Non-Tax Revenues in Indian States: Principles and Case Studies

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Summary

The study begins by reporting and then extending earlier work that attempts to define the scope and classify not-tax (and non-debt) revenue. Thus non-tax revenue is defined as government revenue that is either requited or voluntary or both. In the case of voluntary requited payments a further distinction is made between revenue from assets and revenue from sale of goods and services. Heads of accounts in state government budgets for different non-tax sources are then identified in a table.

This is followed by a discussion of what is known about economic principles governing these revenue sources and a review of institutional options for provision of different goods and services or for public asset management. Next, the relation between non-tax revenue and subsidies is discussed. Following this, principles for optimally pricing goods and services in which the government has market power are reviewed. These principles are of crucial importance for practical policy.

The section closes with a preliminary attempt to devise a framework for assessing non-tax revenue performance, drawing on the conceptual discussion in the paper.

Turning to Indian States, first an examination is made of major distortions in estimating the magnitude of non-tax revenue in states arising from state government budget accounting practices in India. Despite the data on non-tax revenue being totally unreliable, this is nevertheless followed by an examination of the importance of different sources of non-tax revenue and an examination of recent cost recovery performance in social and economic services across states. This is followed by an assessment of state lottery receipts and also dividends from public sector undertakings (PSUs). A case study of a PSU, a public sector road transport corporation, is then presented.

In the third section, institutional arrangements in eight selected sectors which are of current or potential importance for non-tax revenue in Indian states together with four case studies are presented. Sectors include, mining, forests, irrigation, roads, housing and public buildings, health, education and services for weaker sections. Brief discussion of tourism revenue and revenue from husbandry services is also included. The discussion is preceded by a review of principles of institutional reform for improved service delivery performance by government departments.

Limitations of the current study are identified and suggestions for further work are then made in the penultimate section. Suggestions for strengthening revenue performance and improving management, as also the identification of possible new areas with non-tax revenue potential conclude the paper.

1) Overview

Non-tax revenues cover a wide array of government revenue sources, ranging from proceeds from the sale of communications bandwith, to mineral royalties to interest on loans by governments to fines and penalties. The first mentioned is a potentially lucrative source of revenue for the Centre, as pointed out by the Kelkar Task Force on Implementation of the Fiscal Responsibility and Budget Management Act (Government of India, 2004). The other three examples provide revenue to both Centre and states.

The Karnataka Revenue Reforms Committee (2003) has recently estimated that potential for additional resource mobilisation from non-tax revenue in Karnataka to be as much as 900 percent of current levels.[3] If this is also the case in other states, non-tax revenue could, in time, become a more important source of revenue than taxes. That this is not impossible in principle is suggested by the

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[2] *This report was prepared by consultants for the Asian Development Bank. The views expressed in this report are the views of the authors and do not necessarily reflect the views or policies of the Asian Development Bank (ADB), or its Board of Governors, or the governments they represent. ADB does not guarantee the accuracy of the data included in this paper and accepts no responsibility for any consequence of their use.*

[3] See "Reforms to boost revenue by 800 percent", **Times of India**, 11th December, 2003, available at www.newindpress.com

fact that over a third of government non-tax revenue in Singapore, a country with no mineral or forest resources unlike Indian states, amounts to around a third of its revenue (see Chia, 1998).

Possibly more important, greater attention to non-tax revenue is needed because of the likely decrease in the ability of governments to tap important tax bases in the wake of globalisation. According to some scholars these bases include increasingly mobile capital, skilled labour and footloose industries. Reduced government bargaining power will lead to decreased taxation of these bases, a trend that has already begun and of which several telling examples are to be found both in developed and developing countries.[4]

Nevertheless, no comprehensive exposition of non-tax revenue sources, to my knowledge, exists: Not for Indian states nor for any country. This being the case, it was felt necessary to start from basic principles for this study.

The next section begins with a discussion of non-tax revenue and attempts to provide a working definition of its scope. This is followed by a discussion of applicable economic theory, gathering together the meagre relevant material could be found. The discussion covers the nature of goods, services and assets yielding non-tax revenue from a public finance perspective, institutional options for provision of various goods and services, pricing principles and the relation between non-tax revenue and subsidies. The section closes with an attempt to develop a framework for the assessment of non-tax revenue.

This is followed by a section which covers broad trends in non-tax revenue of states in India after pointing out the severe deficiencies that exist in budgetary data on non-tax revenue. An analysis of two "commercial" sources of non-tax revenue whose performance can legitimately be examined from a financial perspective, state lotteries and dividends, is also attempted.

In the third section, institutional arrangements and (four) case studies in eight selected sectors which are of current or potential importance for non-tax revenue in Indian states is undertaken. Sectors include, mining, forests, irrigation, roads, housing and public buildings, health, education and services for weaker sections. Brief discussion of tourism revenue and revenue from husbandry services is also included. The discussion is preceded by a review of principles of institutional reform for improved service delivery performance by government departments. A key omission in this section is the power sector, which has perhaps the greatest problems in the area of cost recovery. This is deliberate, as an excellent recent discussion of the power sector's problems and reform options is in World Bank (2005).[5]

Limitations of the current study are identified and suggestions for further work are then made in the penultimate section. Suggestions for strengthening revenue performance and improving management, as also the identification of possible new areas with non-tax revenue potential conclude the paper.

2) Conceptual background[6]

a) Non-tax revenue: Scope and classification

Though the focus of this paper is on the economics of non-tax revenue of Indian states, existing government data classifications appear to be ad hoc, making it difficult for non-tax revenue to be identified and examined. Indeed, except implicitly in brief textbook definitions, no consistent definition

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[4] For a discussion of tax base erosion in the wake of globalisation see for example Lodin (2002), Muten (2002) and also Huber and Runkel (2004).

[5] Major problems with assessing non-tax revenue performance in the power sector include (a) unspecified recovery norms which may be different for generation, transmission and by type of end-user, as also by the type and vintage of generating plants, (b) very severe distortions in budgetary data and (c) major differences in institutions across states. A separate study is required to do even minimal justice to these issues and arrive at a useful assessment. World Bank (2005) points out that explicit subsidies in the power sector are the largest component of total subsidies. Some implicit subsidies also exist. Subsidies due to poor cost recovery are particularly large for farmers and for informal and rural households. Overall, these subsidies benefit richer sections disproportionately. Under-pricing and consequently poor power sector cash flows lead to inefficient utilisation of power plants and ill-designed quantity rationing causing erratic power supply. The study points to some promising institutional reforms in some states, such as setting up of Electricity Regulatory and Tariff Commissions, that have begun to lead to improved cost recovery from non-agricultural firms and households, though farm sector cost recovery, a political issue, remains poor. It identifies sustainable, improved cost discipline at all levels in the power sector as the key to improved performance, with or without privatisation.

[6] This section is largely based on Das-Gupta (2004).

of the scope of non-tax revenue is, to my knowledge, available.[7] It is important, therefore, to attempt to carefully delineate the scope of the term non-tax revenue. This exercise will also help to identify some limitations of the analysis here.

Begin with a definition of taxes. According to the System of National Accounts 1993, "Taxes are compulsory, unrequited payments, in cash or kind made by institutional units to government units" (institutional units includes both individuals and other entities). Taking this definition as a base, non-tax revenue includes payments made to the government that are:

i. Compulsory and requited,

ii. Voluntary and unrequited, and

iii. Voluntary and requited.

Together (i) to (iii) delimit the scope of non-tax revenue, though as many as five qualifications are needed to narrow its scope. First, conventionally, if a payment made to the government is requited by future repayment or by a transfer of other assets, this is accounted as a capital receipt and not as non-tax revenue. Such receipts include government borrowing, money creation and privatisation proceeds. Second, the scope of government needs to be clearly specified. This presents difficulties as the legal scope of government may be easily changed without affecting the underlying economic reality. For example, this can be done by converting a departmental undertaking (such as the Indian Railways) into a public sector corporation. This will not change the economic scope of government, or rather the public sector, but will alter the government's legal boundary. Differences in the scope of government across jurisdictions like states in India will then limit the comparability of cross-state data.[8] Third, the basis of accounting for receipts has a bearing on the scope of non-tax revenues. This matters in the way timing affects the recognition of the receipt: on accrual or on actual receipt of the payment. Additionally, not all receipts by the government are necessarily accounted for in its consolidated fund.[9] Fourth is a problem which arises most importantly in the case of state lotteries in budgetary accounting in Indian states:[10] Should these receipts, which belong to group (iii) in the classification above, be accounted for net of pay-outs or on a gross basis? In principle, the same problem arises with any receipt of the government which is partly matched, or overmatched, by an expenditure. Rao (1981) distinguishes between commercial and non-commercial undertakings. According to him, the former should be accounted for on a net basis, since their purpose is to raise revenue and not to provide public services. This logic is also followed here and a distinction is made between gross and net non-tax revenue. Fifth, there is the problem of notional receipts, such as in the case of interest on capital works in irrigation. The notional return on these investments forms a large chunk of non-tax revenue in the budgets of many Indian states, this being matched by a contra-entry signifying notional expenditure.

Here gross non-tax revenue is taken to include

non-capital (or revenue)

cash or in-kind receipts (not accruals) excluding taxes of

governments of Indian states as legally defined

excluding notional receipts matched by contra expenditures on a

gross basis.

The more meaningful concept of net non tax revenue is also used in this paper. This is defined as

Gross non-tax revenue less expenditure on commercial activities undertaken for the purpose of revenue raising, if net receipts from these activities are positive.

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[7] For the standard textbook classification of government revenues see, for example, Musgrave and Musgrave (1989). An earlier classification of government revenue sources is in Rao (1981). I thank M. Govinda Rao for bringing this to my attention.

[8] In commenting on a draft of this paper M. Govinda Rao pointed out that "The classic example is Punjab Roadways run Departmentally and PEPSU Road Transport Corporation run as a non-departmental enterprise by the Punjab Government".

[9] For an Indian example in the context of education see Tilak (2004). For a British example see Newbery and Santos (1999).

[10] State lotteries have receipt and expenditure budget heads 0075-103 and 2075-103. An additional distortion arises in the case of pensions, which has heads 0071 and 2071 for Contributions and recoveries towards pension/ Pension and other retirement benefits. Clearly, these should not be accounted as revenue receipts either on a gross or on a net basis.

For some purposes these definitions may be unsatisfactory. For example, data on government receipts which includes net non-tax revenue as defined here cannot be used to answer the question: "What is the maximum amount available in the current year to the government to retire a portion of the public debt?" Nor "what is the maximum increase possible in the current year in the outlay on health services?". Problems with these definitions including non-comparability of data from different state governments, are pointed out below.

Some additional observations are warranted. The rationale for exclusion of notional receipts matched by contra-expenditure is not clear cut: In principle, government investments are expected to yield a future (social) return. Estimating returns is essential in cost-benefit analysis of proposed investment projects. That this return on capital may not actually be recovered from users is a separate matter. Exclusion of returns means that government cash flows, as accounted, cannot be used to undertake ex post cost benefit analysis of the investment. On the other hand, a notional cash flow cannot be used to finance government expenditure on any other good or service. So inclusion of notional expenditure leads to incorrect estimation of government resources potentially available to finance other expenditures. It also leads to biased estimates of cash-based revenue-expenditure ratios, necessary for assessment of overall fiscal balance.

As mentioned, the rationale for taking state lottery receipts and receipts from other commercially motivated activities on a net basis is because these activities presumably have a purely revenue raising motive. The provision of gambling services to citizens by state lotteries is incidental (and presumably undesirable). The choice of gross instead of net receipts in other cases is less clear. As in the previous paragraph, the question is if inclusion of intrinsically earmarked funds is appropriate versus the desirability of obtaining a consolidated estimate of government revenue. The choice made here is partly motivated by the importance of user charge assessment in examining non-tax revenue performance. Third, revenues are to an extent fungible: Increased user charge collection from an activity can be matched by decreased expenditure, releasing funds for other uses without changing the total outlay for the concerned activity. Nevertheless, to the extent that there are unaccounted in-kind receipts, the magnitude of gross non-tax revenue will be underestimated, a problem which would not arise if revenue was included on a net basis.

Given this definition, satisfactory or not, the scope of non-tax revenue is now further elaborated.

The two important examples of compulsory requited payments are earmarked taxes and fines or penalties.[11] The former are accounted for as tax receipts in state budgets (an example from the Centre is the Government of India's education cess).[12] Penalties and fines are also accounted for as tax receipts when they apply to tax non-compliance, or non-compliance with selected non-tax regulations such as motor vehicle or liquor related regulations, but as non-tax receipts in other cases. Consequently, though the scope of non-tax revenues in government statistics is biased downwards on this account, the discussion of normative principles of penalty design is nevertheless applicable to all types of penalties. Only limited discussion of earmarked taxes is included here.

Voluntary, unrequited payments include contributions made to the government, the best known examples being contributions to the Prime Minister's Relief Fund (again an example from the Centre) and unclaimed deposits with the government or unclaimed excess payments for services. No reporting problem arises in these cases.

The major categories of non-tax revenue fall into group (iii) in the classification above. These payments can be further classified into three broad sub-groups: (iii.1) Revenue from assets, (iii.2) revenue from the sale of goods and services (abbreviated "goods' from here on) and (iii.3) revenue from the sale of licences and permits for regulated activities. Though conceptually distinct, there is some overlap between these groups.

Assets from which the government derives revenue include three sub-categories:

> iiii.1.1 Common property resources of which the government acts as a custodian including, importantly, forests, wildernesses, marine and riparian habitats and wildlife as also historical monuments from earlier times. From these resources the government derives revenue by way of fees from the sale of usage rights including admissions fees, from the sale of (e.g.) pollution permits, and fees or royalty payments from assigning the right to harvest and sell

[11] Fines and penalties are "requited" in the negative sense that they are payments exacted for non-compliance with the law.
[12] Additional discussion in the British context is in Newbery and Santos (1999).

naturally occurring produce. In the context of the Centre, sale of licences to use broadcasting bandwith is another important example.[13]

iii.1.2 Other exhaustible or renewable natural resources to which private property rights are not assigned. The most important example of this is mineral exploration and exploitation of public mineral resources for which the government receives royalty and rental payments. In many Indian states this is the most important source of non-tax revenue, often the fifth most important source of tax and non-tax revenue combined. This is also the most important source of non-tax revenue worldwide.

iii.1.3 Assets created from earlier government investment or which have earlier been nationalised. The most important examples of such assets are public sector undertakings (PSUs), irrigation, roads and other infrastructural capital, equity investments in private concerns and loans provided by the government. Revenues of the government from these assets are by way of dividends and interest receipts (notional or otherwise). As pointed out, creation of a PSU to undertake an activity formerly carried out by a government department can lead to a distorted picture of non-tax government revenue (and expenditure), since gross revenue from the activity is now replaced by dividends paid to the government by the PSU.

iii.2: Revenue from the sale of goods provided directly by the government, including sale of infrastructure services, yield what are commonly termed user charges. In addition there is revenue from the direct sale of naturally occurring produce such as forest produce. A list (inevitable incomplete) of important sectors listed in budgets from which the government derives revenue from the sale of goods is in Table A1. The table also reports corresponding budget heads used in government budgets and Finance Accounts, where possible.

iii.3: Revenue from licences for regulated activity cover a wide array of sectors and include business and shop licences, construction and land use permits, examination and inspection fees, and so on. In Singapore, auction revenue from the sale of vehicle purchase permits (Certificates of Entitlement) are a major source of government revenue. However, this source of revenue is currently not anywhere near as important in Indian states. Three types of fees and charges are reported as a part of tax revenue in state budget accounting in India. First, registration fees for documents and related fees such as for title searches. Second, judicial stamp "duties" including revenue from sale of judicial stamps are accounted for as a part of stamp duties. Third, there are transport sector related fees for licences, permits and vehicle registration as also some portion of road tolls.[14] Though specific discussion of these revenue sources is omitted, some of the general principles discussed below are relevant.

Given the diverse sources of non-tax revenue, different criteria must be adopted to assess non-tax revenue performance of different components. We first attempt to discuss some economic principles of activities from which non-tax revenue is derived. These principles provide the rationale for evaluation criteria proposed thereafter.

b) Non-tax revenue other than voluntary requited payments: Principles

Compulsory, requited payments

Earmarked taxes: These have no overall justification in economic theory. The basic principle for an optimal government expenditure allocation is that the marginal social benefit per rupee of public expenditure should be equal across all activities. If the lower bound introduced on allocation to particular activities by earmarked taxes exceeds the optimal allocation, expenditure allocation will be inefficient. However, Bird (1997), drawing on earlier work by Buchanan (1963) and others, suggests that when earmarked taxes are viewed as substitutes for user charges, especially when the latter are difficult to collect, a benefit tax argument can be made for the optimality of earmarking. He identifies earmarked payroll taxes to fund social security systems, earmarked fuel taxes for roads and earmarked pollution levies for environment preservation expenditure as prominent examples. Nevertheless, widespread earmarking, especially when the tax base is unrelated to the earmarked

[13] This has been recently pointed out by the Task Force on Implementation of the Fiscal Responsibility and Budget Management Act. See Government of India (2004). Major contributions to the theory of auctions, made in the context of bandwith auctions by John McMillan and Preston McAfee and others, are described in McMillan (1994) and McAfee and McMillan (1996).

[14] Road tolls are accounted as a part of goods and passenger tax under head 0042-102 and also under Roads and Bridges under head 1054-102.

use, as is prevalent in Colombia and Ecuador, are not economically justifiable though earmarking may increase the political acceptability of additional taxation (Bird, 1997).

Fines and Penalties: Since by breaking laws citizen's reveal that their private cost of doing so is below the cost to society, fines for breaking the law are similar to Pigouvian taxes levied on goods with negative external effects. The amount of the "tax" in the case of fines is the ex ante, expected value of the fine, in the event that the law breaker is caught and penalised. In designing fines, pure externality considerations must be tempered to take account of the incentive effect of fines on behaviour and also the principle of natural justice which asserts that "the penalty should not exceed the crime". This is the subject of much ongoing research.[15] To my knowledge no empirical assessment of whether fines are over- or under-used by the government has yet been made, though inadequate enforcement of laws in many developing countries makes it a priori likely that fines do not sufficiently penalise non-compliance.

A wide ranging discussion of penalty design which is yet to be surpassed in terms of scope, is in Oldman (1965). As Bird (forthcoming) puts it:

> "Experience suggests that penalties should increase with (1) the potential revenue loss due to the tax offence; (2) the difficulty and cost of detecting the offence; (3) the effect of the offence on other taxpayers; (4) the offender's state of mind (a higher penalty should apply if the offence is deliberate and pre-planned); and (5) recidivism."

Other desirable design features of penalties are:

1. Penalties for lesser degrees of non-compliance should, following the principle of marginal deterrence, be less than the marginal social loss so that citizens have the incentive to substitute away from higher levels of non-compliance (Mookherjee and Png, 1994).
2. The procedure for levy of penalty should be transparent and not subject to administrative discretion.
3. Penalties for corruption or inaction by bureaucrats and political representatives should be high enough to reduce opportunities for non-compliant citizens ("gainers") to compensate bureaucrats or representatives who are punished ("losers").

From a revenue standpoint, collection from well designed fines and penalties should increase with an increase in detected offences but decrease to the extent that non-compliance is deterred. So a monotonic relation between penalty revenue and compliance cannot be expected. Therefore, in evaluating penalties, both their design, in accordance with principles outlined, and implementation need to be examined. In the case of penalties for non-payment of monetary dues, efficient penalties will translate into greater collection of these dues (but not necessarily penalties). Unfortunately, systematic empirical studies of penalty design and implementation are hard to come by for any country.

Voluntary, unrequited payments

Gifts and donations: No analysis is available on the extent to which governments should optimally rely on gifts for revenue.[16] However, in practice governments in India and elsewhere do rely on them to augment their revenue especially in times of war and in the case of natural calamities. To encourage gift giving, certain gifts are even made tax deductible or are the subject of appeals and publicity drives. In practice revenue from gifts has not been a major revenue source for governments even during war or calamity. In the absence of any useful analysis of this revenue source, further examination is not attempted here.

Unclaimed dues: Clearly, no target or performance benchmark can be laid down for these revenues which are in the nature of windfall gains. The key question is to what extent rigidities in government procedures and red tape impede recovery of dues from the government by citizens. Greater hurdles cause them to become arbitrary involuntary and unrequited payments or, that is, arbitrary taxes. In

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[15] Substitutes to fines, such as jail sentences, forfeitures, withdrawal of the right to carry on a business or profession, and even public shaming, must be taken into account in designing optimal fines. For an excellent review of the economic theory of enforcement see Polinsky and Shavell (2000).

[16] The literature on voluntary private provision of pure public goods suggests that they can be provided, though at a level which is likely to differ from (but not necessarily be below) the social optimum, by voluntary payments. This is especially true for local public goods in small communities where the incentive to free ride is limited. A review of this literature is in Myles (1995), Chapter 9.5.

case of such hurdles, any growth in these receipts should be viewed as a decline in the effectiveness of non-tax revenue performance. Overall, however, this source makes a negligible contribution to government revenue.

c) Non-tax revenue from goods and resources

In analysing voluntary requited payments, it is helpful to start with a review of relevant economic characteristics of goods and of resources.

Traditionally, the rationale for government provision of a good is negatively derived in market economies from the inability of private institutions, market based or otherwise, to provide the good efficiently. Three clarifications to this are in order.

This rationale, it should be emphasised, does not imply that the government should provide a good at the quantity which would be efficient if its provision costs were identical to private sector costs. Given cost differences, say a higher cost of provision by the government coupled with institutional failure causing private under provision, if the government directly provides the good the optimal quantity that the government should provide will be below the level compared to the case where its costs are identical to private sector costs. More generally, instead of completely private or direct government provision a variety of institutional options exist which are examined below.

Second, the mix of goods which the government should optimally provide will depend on the extent of market imperfections and economic development, particularly capital market imperfections, and also the effectiveness and coverage of private non-market institutions.

Third, an acceptable rationale for government provision of a good, even if the private sector can provide the good efficiently, is if revenue from public provision (say through a PSU) is the least cost alternative for raising revenue needed to provide other goods which the government should optimally provide. In practice, this logical possibility is seldom found to be sufficient to justify government provision of goods which the private sector can efficiently provide.

Bearing these caveats in mind, characteristics of different goods justifying government intervention can be examined. At least seven characteristics of goods are important in determining if private markets or other non-government institutions, left to themselves, would supply the socially optimal quantity of the good or not. These include (a) excludability, (b) congestibility (or rivalness), (c) geographical coverage (or localness), (d) external effects, (e) private information about the good, (f) supply risk and (g) lumpiness or economies of scale. Restricting attention to two key dimensions, Figure 1 illustrates different goods in the public goods private goods continuum.

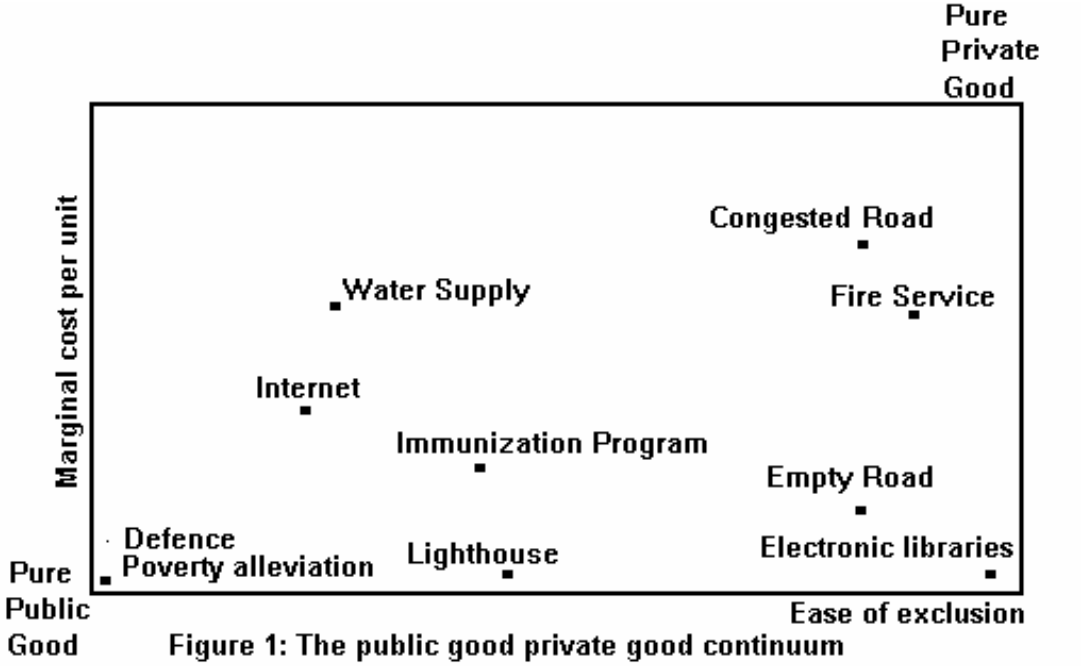

Figure 1: The public good private good continuum

Source: Adapted from Stiglitz (2000)

Goods with (a) lower excludability, (b) greater non-rivalness in consumption,[17] (c) greater geographical coverage,[18] (d) greater external or spillover effects,[19] (e) limited or asymmetric consumer information or bounded rationality,[20] (f) greater supply risk[21] and (g) greater lumpiness in production[22] makes government provision of goods or government intervention in private institutions socially more desirable given that private provision is unlikely to be socially optimal. Two other considerations are also important. The category of pure merit goods, for which government intervention is also generally advocated, includes such things as public transport (concessions) for retired armed force members or school students. In addition, credit market imperfections may provide a rationale for public provision or subsidies.

However, not all these characteristics, nor status as a pure merit good, lead to a rationale for non-tax revenues. For example, non-rival but excludible public goods may be more efficiently provided by the private sector. If this is the case only government subsidies to private providers should optimally be provided. Market failure associated with nonexcludability alone, on the other hand, provides a rationale for tax finance. For private goods with external effects, tax, subsidy or regulatory interventions rather than government supply are generally optimal. The rational for full cost recovery from non-tax revenues is strongest for pure private goods (as in Figure 1) for which government provision is socially desirable due to some characteristic leading to market failure other than from externalities or publicness. For impure public goods, finance via a mix of tax and user charges will normally be optimal, though the precise mix will depend on consumption propensities of different consumer groups and on the importance of distributional considerations in social welfare evaluation.[23]

Next consider charges for regulatory services. These services serve a variety of needs and vary in terms of the characteristics given above (compare judicial services which facilitate property right protection and contract enforcement on the one hand to shop licences or professional certification). Therefore, once again diverse principles apply to these services and the optimal mix of tax finance and cost recovery through charges will vary.

Poverty alleviation services, which have been characterised as a public good in Figure 1, needs some explanation. It is generally held that all or most individuals in the world derive utility from less poverty. In this sense, benefits from poverty alleviation expenditure are fully non-excludible and non-rival. However a paradoxical situation is present with the bulk of poverty alleviation expenditure as direct benefits are excludible and rival. As a result, as illustrated in a case study below, it is feasible to achieve partial cost recovery from user charges and indirect resource generation without reducing – and perhaps increasing – the quantum of services!

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[17] Excludible but non-rival public goods are those for which the marginal cost of supplying an additional consumer is zero but to which access can be restricted to those who pay. For recent discussion see Norman (2003) and Huber and Runkel (2004). Examples in Norman (2003) are described as follows. "To the extent that copying can be prevented, electronic libraries, computer programs, and other goods that can be stored in digital format are almost perfect examples of such excludable public goods. Other examples include cable TV, parks, gyms, zoos, museums, trains (as long as there is excess capacity), innovations, and protection by a police or fire department. These examples may also be thought of as natural monopolies, and an excludable public good may in general be considered as a special case of a natural monopoly, with zero marginal cost." Norman demonstrates the asymptotic optimality of third degree price discrimination and average cost pricing in different cases for such goods.

[18] See the reference to Myles (1995) in a previous footnote.

[19] See the discussion in Srivastava and Sen (1997). Key examples include education, particularly primary education, maternal welfare, nutrition and goods with positive or negative environmental effects.

[20] These problems give rise to what Richard Musgrave termed merit goods, though not pure merit goods which are intrinsically private goods, not subject to market imperfections but which have some desirable distributional characteristic. Examples where these are a factor include curative medical services, old age saving and insurance, and alcohol and tobacco which, ignoring external effects, are "merit bads".

[21] Agricultural goods are an important example particularly when they are subject to price, weather and disease risk and where futures markets are missing or inefficient.

[22] Utility services fall into this category particularly where private savings are low and capital markets are not developed enough to ensure socially efficient levels of investment by the private sector.

[23] Greater reliance on user charges has been shown to be optimal for congestible public goods and for public goods which have negative external effects. An example for both cases is road user charges. In addition, given international tax competition and mobile factors, greater reliance on user charges can be optimal. See Huber and Runkel (2004).
For goods such as food provided through the Public Distribution System or elementary education, Balestrino (1999) presents a model in which full cost recovery from user charges for goods provided to the poor aid redistribution and welfare by causing richer citizens outside of target groups to opt out of public programmes thus permitting superior targeting. However, given differences in preferences of rich and poor and, in particular, a higher demand elasticity of the poor, Sepehri and Chernomas (2001) suggest that the opposite may, in fact, be the case, casting doubt on the desirability of full cost recovery through user charges for such goods. See also Cremer and Laffont (2003).

The discussion so far, has not considered an exogenous revenue requirement, say for financing a portion of the cost of pure public goods. Since tax finance typically imposes distortionary and direct costs, additional cost recovery from user charges, in excess of marginal costs, facilitated by the government exploiting any monopoly power it has may be optimal in this second-best situation. This is true even if this limits consumption of the good.

Turn now to resources. In the case of resources (assets) owned and provided by the government, the rationale for non-tax revenue is more direct. There are few, if any, fully non-excludible and non-rival productive inputs owned by the government. Consequently, for naturally occurring assets user charges, proceeds from sale of goods, rents or royalties are both feasible and desirable, particularly in the case of common property resources. Such charges should be fixed to ensure optimal utilisation rates in the absence of any fixed government revenue requirement.[24] With a revenue requirement, it may, once again, be optimal for the government to exploit its monopoly power to depress usage rates below the unconstrained optimum.

Capital asset creation from government investment is justified if the assets are subject to one or another characteristic leading to inefficient or high cost provision by the private sector. In the first instance, given the gestation period and longevity of the assets, a mix of tax and debt finance will typically be optimal.[25] User charges or other sources of asset income should then be used to recover asset maintenance and debt amortisation over the life of the asset. This is typically the benchmark by which cost recovery for roads, irrigation works and other infrastructure projects is judged.[26] It is again conceivable that a greater portion of costs should be recovered, despite under provision, in the presence of a revenue constraint. In case assets created by the government are institutionally incorporated in PSUs, the same principles apply for cost recovery through PSU dividends. Note, however, that a low return on government equity relative to private returns may result from this.[27]

Equity participation or loans to private sector firms can be viewed as a form of subsidy.[28] An alternative motive is pure revenue generation to substitute for tax finance. In either case the expected return (including from taxes) on such equity participation or loans should equal the pre-tax private return on capital if capital markets are perfect. In the presence of imperfect capital markets, limited guidance for setting benchmarks is available.

d) Institutional options for management of assets and public provision

In practice different institutional mechanisms are available for the provision of goods and management of government owned assets. Direct government provision versus provision via PSUs has already been referred to. The major options available and their implications for government revenue are now reviewed in Table 1. In the table, revenue from different institutional arrangements is contrasted with direct state government provision of the good, which yields user charges, or direct asset management which yields sale prices for produce and various fees. As can be seen, institutional alternatives to direct government provision largely have negative consequences for non-tax revenue.

Table 1: Institutional alternatives to direct state government management of assets and provision of goods: Implications for non-tax revenue

Institution for goods supply or asset management	Examples	Revenue sources lost	Revenue sources gained	Remarks
Public undertaking	Road transport, forest development, power transmission corporations	User charges	Taxes; interest and dividends	Illustrates substitution of tax and non-tax revenue. Expenditure saving
Private sector with subsidies	Schools receiving grants in aid. Solar energy devices	User charges, sale prices	Tax; interest or dividend?	Interest or dividend if subsidy is through loan or equity. Expenditure saving

[24] Optimal utilisation rates are the subject matter of the theory of exhaustible and renewable resources.
[25] This assumes the non-equivalence of tax and debt finance, as empirical evidence suggests.
[26] With external effects or partial non-excludability, the tax finance component should finance the portion of costs which cannot be recovered, given socially optimal provision, through charges.
[27] Rate of return prescriptions based on Government of India (2002) are discussed later in the paper.
[28] This has been pointed out by Srivastava and Sen (1991) and is discussed further in the next sub-section.

Institution for goods supply or asset management	Examples	Revenue sources lost	Revenue sources gained	Remarks
Private ownership of assets	Privatisation; Sale of mining concession	Dividend, interest; rent and royalty	Tax	One time or instalment based asset transfer proceeds. Expenditure saving
Outsourced to local or central government	Employment schemes; agricultural extension[29]	Sale of goods and user charges if any	None	Inter-governmental transfers substitute direct expenditure
Outsourced to NGO	Various social services Professional certification (CA, doctors)	Sale of goods and user charges if any	None	Transfers substitute direct expenditure
Outsourced to private sector	Contractual transport services; Hospitals; Zoos; Road maintenance; bandwith auctions?	User charges, sale of goods	Tax; contract payments	Contract payments affected by assignment mechanism. Expenditure saving
Build-Operate-Transfer (BOT)	Roads, bridges, power plants	User charges, sale of goods	Tax; contract payments	Contract payments affected by assignment mechanism. Expenditure saving
Exploitation permit or lease	Mining concession; Timber harvesting	Sale proceeds	Tax; Rents and royalties; contract payments	Expenditure saving
Community provision or management	Local irrigation: water users associations	user charges (partly)	None	Expenditure saving

From a societal standpoint, the appropriate institutional option is that which enables provision to most closely approximate socially optimal levels while keeping provision costs low. Theoretical and empirical research on the relative social efficiency of different modes of provision of government services and asset management is limited and possibly still inconclusive.[30] However, the general presumption is that direct provision or management is a superior option in few if any cases, at least in terms of the cost of provision. It is widely believed that the government should limit direct provision (aside from pure or nearly pure public goods) to some regulatory services, and asset management to custodianship of common property resources. In other cases, budgetary support through subsidies and perhaps price supports are appropriate. If this view is correct, then most user charges governments collect are an indicator of institutional rigidities leading to social losses. Long term evaluation of non-tax revenue should then take into account the progress of institutional reforms in government provision of goods and asset management. Nevertheless, given the activities that are carried out by the government, short term evaluation of non-tax revenue performance is still worthwhile.

Half way "privatisation" being experimented with in areas such as health care and irrigation in some Indian states is by permitting user charges to be retained wholly or partly by the levying unit for specified expenditures, including capital expenditures. This is commented on further in section 4.

e) Non-tax revenue and subsidies

In the terminology of Mundle and Rao (1991) and Srivastava and Sen (1997), a subsidy (S) on a good is equivalent to the difference between expenditure and cost recovery for different government activities excluding provision of pure public goods:

$S = RX + (d + i)K_0 + i(Z_0 + L_0) – (RR + I + D)$, provided $S > 0$.

In the equation, RX is revenue expenditure on the good, L_0 and K_0 are respectively the "sum of loans advanced", except to PSUs, and "sum of capital expenditure" (excluding equity) "at the beginning of the period", Z_0 is the sum of equity and loans advanced to PSUs within the category at the beginning

[29] See evidence in Bardhan and Mookherjee (2004) for West Bengal evidence. Jutting et. al (2004) examine the impact on services to the poor for several developing countries including India. Empirical analysis of decentralisation, backed by earlier theoretical work by the former authors does not permit a clear-cut conclusion that decentralised provision of poverty alleviation services is superior to direct provision by state governments.

[30] See, for example, the discussion on provision by NGOs and other institutions in Besley (1996) and Bardhan and Mookherjee (2004). Empirical analysis of decentralisation in the latter, backed by their earlier theoretical work, does not permit a clear-cut conclusion that decentralised provision of poverty alleviation services is superior to direct provision by state governments. For analysis and prescriptions of service delivery options see World Bank (2003a), partly summarised in Devarajan and Shah (2004).

of the period, d and i are respectively the depreciation and the interest rate, RR is revenue from the good and I + D are interest, dividends and other receipts from PSUs in the category.[31]

Consequently, subsidies encompass both private sector activities which receive support from government funds and partly tax or debt financed public supplies. Following their definition, non-tax revenue from most sectors falling within groups iii.2 and iii.3 in Table A1, as well as dividends and interest from public investment in these sectors (which form a part of group iii.1), are equivalent to total revenue and imputed flows associated with capital expenditure, equity and loans in the sector less subsidies to the sector.[32] However, the studies mentioned here exclude government goods and services which are considered pure or nearly pure public goods, including all government expenditures under the head "administrative services".[33] So non-tax revenue from services classified as administrative services in Indian budget accounting will be unrelated to subsidies as estimated by these studies. For most other items included in group iii here (excluding, for example, state lotteries), non-tax revenue (that is RR+I+D), corresponds to the recovered portion of expenditure in the Srivastava and Sen subsidy definition. Srivastava and Sen do not include sectors where receipts exceed expenditure in their subsidy estimates. This means that data on subsidies and total (including imputed) expenditure in a sector are not sufficient to determine non-tax revenues in that sector: There is an additional degree of freedom. Sen and Srivastava also point out that in practice there are off-budget subsidies which they do not estimate. Non-tax revenue clearly has no relation to such subsidies. They also identify, but do not estimate, particular types of tax expenditures as subsidies.[34] Again, non-tax revenue will be unrelated to these "tax subsidies" except to the extent that tax and non-tax revenue are imperfect substitutes.

f) Pricing policies

Here we abstract from long run institutional alternatives to direct government supply. As has been pointed out, in the presence of additional revenue requirements, it can be optimal for governments to deviate from marginal cost pricing for goods in which it has monopoly power. From the standard theory of firms with monopoly power, it is known that deadweight costs of production by profit maximising firms can be reduced if they deviate from uniform pricing.[35] This occurs because non-uniform pricing enables firms to extract a greater portion of buyer surplus (seller surplus in the case of monopsony power) making it optimal for them to increase supply, reducing the loss associated with undersupply compared to price-taking industries. In fact when first degree price discrimination is possible, perfect information about demand causes deadweight loss (and buyer surplus) to vanish. For goods other than pure private goods, Norman (2003), for example, shows that third degree price discrimination by a monopoly provider of an excludible public good is asymptotically socially optimal in the presence of buyer heterogeneity.[36]

Non-uniform pricing strategies discussed in industrial economics text-books include first degree, second degree and direct or indirect third degree price discrimination, peak-load pricing, two- and multi-part tariffs, mixed or pure bundling and tying, and bulk sales and purchases. Furthermore, there are situations in which two or more strategies can be combined, often with product differentiation.

Consequently for a wide variety of government supplies, cost recovery can and should optimally be improved through adoption of non-uniform pricing and price discrimination. While normative economic theory for optimal pricing for government supplies is as yet incomplete, several examples can be given.[37] Standard examples are, of course, (i) in the pricing of public utility services where two- or multi-part tariffs along with second and third degree price discrimination and peak-load pricing is used;

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[31] This is the same definition as in Mundle and Rao (1991), though they also net out transfer payments to individuals within the category. Again, compared to Srivastava and Sen, Anand and Jha (2004) additionally net out tax finance though the rationale for this is not clear to me (they also use a different depreciation computation). The discussion here relies on the definition of Srivastava and Sen which is simplest.

[32] Imputed capital "expenditure" in Srivastava and Sen (1997) includes imputed depreciation and interest on capital investment in the sector. In their estimates, no adjustment appears to have been made to budgetary non-tax revenue data.

[33] This point was made in comments on a draft of this paper by M. Govinda Rao.

[34] Sen and Srivastava (1997) also identify 5 other forms of subsidies: subsidies in cash or kind, price supports ("procurement subsidies"), "regulatory subsidies" due to non-market administered prices, and interest and equity subsidies if these returns are below imputed "normal" returns (i+d). The discussion of non-tax revenues here applies to all these subsidy forms.

[35] An excellent textbook introduction to this topic is Besanko, Dranove and Shanley (1996).

[36] The optimal rule provides for supply of a fixed quantity for a fixed but discriminatory access fee. An example could be internet access for a fixed period or zoo access for a fixed duration with differential access fees for different groups of buyers.

[37] Sankar (1992) contains a review of some aspects of non-uniform pricing along with Indian applications to air passenger, electricity, postal and telecommunications tariffs. Srivastava and Sen (1997) allude in passing to price discrimination in their discussion of cross-subsidies.

(ii) transport services, where indirect third degree price discrimination along with product differentiation is practiced; and (iii) telecommunications services where multi-part tariffs, mixed bundling and both indirect and direct third degree price discrimination is prevalent. Such strategies can be optimally adopted to price most public services other than pure public goods.[38] For example, for animal and crop husbandry services, horticulture and pisciculture, introduction of two-part tariffs through a one-time "registration fee", perhaps tied to farm-size or some other suitable indicator, can be used.[39] Consider 3 more examples.

Example 1: Free primary and sometimes secondary education in residential schools is normally bundled with residential services (food, hostels, etc). While completely universal free provision of primary education is the policy of most governments, this need not be extended to residential services for those outside target groups. Target groups typically include students from below poverty line (BPL) families, scheduled castes and tribes and selected minorities. It should be possible to provide two qualities of hostel and boarding services, with the basic level being free or nominally priced and the superior level being priced at above marginal costs to cross-subsidise basic services. Students from relatively well-to do families could then self-select superior hostel services. Such a strategy clearly has the potential to improve cost recovery without adversely affecting target groups.

Example 2: Price discrimination coupled with two-part tariffs is already in use in some state-run referral hospitals. However, targeting is poor as verification of BPL status is difficult. Targeting can be improved if this is combined with quality differences in in-patient facilities and even, say, air-conditioned versus non-air-conditioned out-patient facilities. Superior facilities can be priced at a profit, or to at least exceed variable cost.

Example 3: In Singapore, (transferable) Certificates of Entitlement for ownership of motor vehicles are periodically auctioned and, as mentioned, constitute a major source of government revenue. Similar first degree price discrimination is practiced in some states in India for liquor vends, though the revenue from this is accounted for as part of state excise duty.

g) Revenue from public assets

Similar pricing principles apply to the sale of produce or use rights for selected public assets. For example, timber from forests and mining leases are auctioned in many states achieving first degree price discrimination (though this cannot implement the first best given limited information about buyers).

Das-Gupta (2004a) suggests the following principle for selected government assets: "Identification of under or unutilised government assets, including land and buildings, and improved utilisation, with private sector participation in suitable cases, can reduce the direct cost of government services and also give rise to new sources of non-tax revenue."

For example, a major revenue source, largely untapped, where this principle is applicable is in management and pricing of rest-houses and inspection bungalows owned by the PWD (Public Works Department) and other government departments. This is discussed further below.

h) Towards a framework for assessing non-tax revenue performance

What implications does the discussion above have for assessment of non-tax revenues? First, as has been mentioned, given their diversity, criteria need to be devised on a case by case basis. With the exception of state lotteries and some other commercial activities, which have a pure revenue motive, a common feature of all sources is, however, that revenue performance alone is never an appropriate yardstick to use – in fact revenue performance may, in some cases be entirely irrelevant.

For state lotteries revenue performance relative to other states is the key parameter, in terms of (a) net revenue raised and (b) the revenue-expenditure ratio. Institutionally, complete outsourcing is possibly the preferred mode, as with the Sikkim lottery, with private contractors being chosen by open competitive bidding, but subject to pre-qualification. This requires empirical verification though necessary information will possibly have to be collected state by state. In case of direct provision,

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[38] Thus Das-Gupta, 2004a suggests the following principle: "In applicable sectors price discrimination and usually product differentiation with a self-selection mechanism can lead to improved cost recovery while continuing to provide cross-subsidized and free services for target groups".

[39] Even in provision of irrigation water, indirect discrimination between groups with own water storage facilities and those without can be achieved via peak-load pricing, though this may be distributionally regressive.

lottery design features, distributor incentives and other administration issues need examination to assess revenue performance.

For penalties and fines, as discussed, their structure and administration need to be analysed as part of an overall enforcement system. Penalties are best assessed by (a) ascertaining if they are optimally included in enforcement policy design; (b) assessing if enforcement policy design is itself optimal; and (c) if the appropriate institutional implementation design is in place and performing effectively. The appropriate benchmarks for the enforcement system is the compliance rate achieved per rupee of administrative outlay and the compliance rate itself.[40] Needless to say, much work needs to be done to operationalise these principles.

For government supplies and services in any area within the major category identified above, category iii, it is necessary to consider government policy in the area as a whole. As discussed, benchmarks for cost recovery, which form a part of the optimal financing pattern for different goods remain unspecified in almost all cases by governments in India. Table 2 attempts to outline and illustrate a possible assessment framework for revenue sources in category iii. In the framework, rows 8, 12 and 13 apply specifically to non-tax revenues.[41]

Table 2: Outline of a proposed framework to assess non-tax revenue performance
With examples

Component	Higher Technical Education	Mines and Minerals	Irrigation works and water	Forest produce
1.Nature of good or asset	a. Private good with positive external effects. b. Buyers poorly informed about product quality c. Lumpy (human) capital good d. Jointly produced with R&D[42]	a. Natural, exhaustible resource b. Uncertain stock position c. largely publicly owned d. Exploitation has negative environmental impact	a. Works a capital asset with economies of scale b. Works congestible and partly, in practice, non-excludible. d. Water a renewable resource d. Water supply subject to external effects e. Water supply risk	a. Natural renewable resource b. Partly a common property resource subject to congestion c. Timber a private good: over- (under-) harvesting causes negative (positive) externalities d. Timber supply risks e. Other forest produce: Private goods
2. Market/private failures	a. Undersupply of education and R&D b. Quality uncertainty	a. Oversupply due to stock uncertainty and environmental externalities b. Private market power in some minerals c. Tradeable goods	a. Undersupply b. Socially excessive use of alternative water sources leading to overuse of water resources	Overuse Under-renewal
3. Other (e.g. capital market) failures	Loan finance constraints, especially for the poor	None	Severe capital constraints	Private reforestation constraints
4. Long run government role	a. Subsidy to private providers or buyers b. Accreditation or quality monitoring/ licensing c. Partial loan guarantees and possibly fully charged loan recovery services	(a) Pigouvian taxation/ penalties for externalities and resource depletion. (b) Allocation of mining rights against payment. (c) Enforcing environmental standards and adequate working conditions.	a. Supply of major works b. Subsidies to some minor works d. Full cost recovery for public water supply c. Taxation of irrigation water use and substitutes to ensure optimal utilisation d. Institutional support for water management	a. Conservation, renewal and exploitation b. Support for community user groups c. Regulation of eco-tourism

[40] More precisely the *shadow value* of the *marginal* compliance rate achieved from the *marginal* rupee of administrative outlay should be treated as the marginal benefit from such expenditure which should then be equated across all expenditures.

[41] This framework should ideally be put together, sector by sector, by experts on the sector. The framework as given should be seen as illustrative and may contain errors.

[42] A detailed discussion of properties of education and markets for education, with attention paid especially to higher education is in Tilak (2004).

Component	Higher Technical Education	Mines and Minerals	Irrigation works and water	Forest produce
5. Desirable long-run institutions	Subsidised private provision licensed and accredited by government	Private provision subject to government oversight	a. Public major works b. Supported community minor works c. Some privately owned water resources subject to taxation	a. Outsourcing of exploitation and sale for royalty and rental payments + tax b. Government supported community conservation c. Outsourcing of eco-tourism services? d. Outsourced sale of forest produce to private parties by open auction?
6. Constitutional/ legal constraints	a. Discriminatory access favouring disadvantaged groups (seat reservation) b. WTO rules prohibiting supply restrictions c. Supreme court ruling constraining fees chargeable and mandating accounts review by government	a. Environment related legislation b. Royalty setting by Central government for "major minerals", and by states for "minor minerals" c. Recent Supreme court ruling permitting land taxation for mined and quarried land		a. Environment related legislation b. Private exploitation of public forests not permitted c. Special legislation for forests on tribal land d. "Scientific silviculture" mandated by Supreme Court as per "work plans"
7. Current supply institutions	Private, foreign, state and Central Universities and technical institutes, unaided private sector diploma institutes, distance learning institutes	Direct supply and exploration by state governments Private supply by concession holders	a. State government supply of major irrigation works and water with central support b. Some community and local government maintenance c. Local and community supply of minor irrigation	a. Government conservation, renewal and exploitation b. Public sector corporations c. Community exploitation
Current quantity	Undersupply in all segments due to price ceilings	Not ascertained	Undersupply in some areas oversupply in others due to both pricing and availability	Not ascertained
Current buyer cost	Varies greatly	Uniform across buyers	Below marginal cost	Not ascertained
8. Benchmark distribution of sources of cost	a. x% current user charges (including R&D patent fees, tuition fees, consulting fees and royalties) b. y% loans to buyers c. z% government subsidies with partial discrimination based on socio-economic background of buyers and private returns to education	100% borne by buyers	a. "Justifiable" variable (supply and maintenance) cost plus x% of capital cost from user charges for major irrigation (Vaidyanathan committee) b. Tax finance for balance capital cost and "unjustified" variable cost for major irrigation c. Subsidies to communities/local government for capital cost for minor irrigation	a. Forest produce sales and forest user charges to finance costs + x% conservation costs: may lead to surplus b. Remaining conservation cost, if any, tax financed
9. Current government role	Accreditation (UGC, AICTE, MCI) Price setting Direct supply Subsidies (proposed to be linked to internal resource generation – i.e. x%)	(a) Monitoring and enforcement (b) Direct supply and exploration by governments for a part of mineral supplies	Construction, management and cost recovery for major irrigation	a. Government conservation, renewal and exploitation b. Exploitation and reforestation in some states by public sector corporations c. Control of eco-tourism

Component	Higher Technical Education	Mines and Minerals	Irrigation works and water	Forest produce
10. Benchmark unit cost for government supply	To be determined in accordance with supreme court ruling	a. Marginal cost should equal private supplier cost. b. Tax and penalty finance should cover regulation and enforcement with some surplus c. Royalty (net of administration) a pure revenue	Prescribed by National Water Policy	Not ascertained
11. Benchmark tax finance proportion for govt supply	z%	Nil (Except for enforcement: 100%)	100% of capital cost	Nil (surplus expected)
12. Benchmark cost recovery proportion for government supply	(x+y)%	100% (plus royalty)	100% of maintenance and water supply cost for major irrigation	100%
13. Desirable non-uniform pricing strategies	a. Discrimination based on socio-economic background of buyers and private returns to education b. Indirect discrimination for bundled goods	a. Auction of mining concessions (first degree discrimination) b. Non-linear ad valorem royalty and dead rent schedules with specific floors?	None?	a. Timber and forest produce auctions b. Uniform and non-uniform eco-tourism fees c. Auction based two-part tariffs for private eco-tourism service providers
14. Benchmark watchdog and special regulatory bodies	For fee setting, financial accounts and standards	General oversight institutions	General oversight institutions Irrigation commission to determine quantity?	General oversight institutions
15. Other features	Private returns greatly exceed buyer cost due to undersupply		Public records incorrectly reflect irrigation infrastructure and water potential	Forest cover may be incorrectly reflected in public records
16. Remarks	x, y and z not laid down in any policy document in any state as yet			x% not so far required to be ascertained

3) Non-tax revenue performance in Indian states

a) Distortions from budget accounting

Non-tax revenues are not correctly reflected in budgets, for lotteries, interest and for some other items as well. Due to this a reasonably accurate estimate of non-tax revenue is not possible with current budgetary data. Second, no benchmarks (as in Table 2) are available to assess non-tax revenue performance. For example, to assess the extent of underperformance by PSUs in terms of dividends, benchmarks are needed.[43] Four important examples are now given of inadequacies in budgetary accounting of both gross and net non-tax revenue as defined above.

According to the Karnataka Revenue Reforms Commission (2003), of Rs. 1560 crore gross non-tax revenue in 2000-01, notional entries with corresponding expenditure figures amounted to Rs. 720 crore.[44] Pass through amounts not available to finance general government expenditure or not forming part of the state's own revenue amounted to a further Rs. 305 crore.[45] So net non-tax revenue at Rs. 692 crore was 41.7 percent of the non-tax revenue reported in the state government budget. The Commission did not net out state lottery expenditure. Netting out the lottery expenditure, using RBI data, net non-tax revenue reduces to 40 percent of non-tax revenue as given in the budget.

[43] But see the Report of the Study Group on Reforms in State Public Sector Undertakings (2002).
[44] Irrigation and power sector interest receipts and dividends of Rs. 560 crore and Rs. 160 crore respectively.
[45] Employee State Insurance receipts and pension receipts of those on deputation of Rs. 45 crore, contributions from the centre for elections and old age pension of Rs. 57 crore and cess transfer retained by local bodies of Rs. 204 crore.

Second, consider lottery receipts of the Haryana government reported in Table 3. As can be seen, gross lottery receipts are over Rs 250 crore, while, net of payouts and administration costs, receipts were actually negative.

Table 3: Haryana: Gross and Net Non-Tax Revenue from State Lotteries (Rs Crore)			
	1999-2000	2000-2001	2001-2002
Gross Revenue from State Lotteries	255.1	295.52	388.29
Net Revenue from State Lotteries	-14.99	-15.77	-11.22
Report of the Comptroller and Auditor General of India (Revenue Receipts) as on 31 March 2003			

Table 4 present recent data for 3 states with especially distorted non-tax revenue figures given state lottery expenditure.

Table 4: Own Non-Tax Revenue less State Lottery Expenditures as a % of Gross Own Non-Tax Revenue: Selected States				
Year	All States	Goa	Haryana	Sikkim
1993-94	88.39	100.00	99.94	100.00
1994-95	73.80	100.00	28.25	7.76
1995-96	80.40	45.95	33.35	5.55
1996-97	85.55	59.97	27.40	4.74
1997-98	87.24	42.76	36.41	4.63
1998-99	91.43	52.74	62.25	4.20
1999-00	94.04	59.71	78.55	6.21
2000-01	91.19	54.69	78.37	22.71
2001-02	86.78	48.60	76.02	6.30
2002-03 RE	83.11	51.56	76.83	11.23
2003-04 BE	81.30	54.53	76.37	11.81
Source: Reserve Bank of India obtained from NIPFP.				

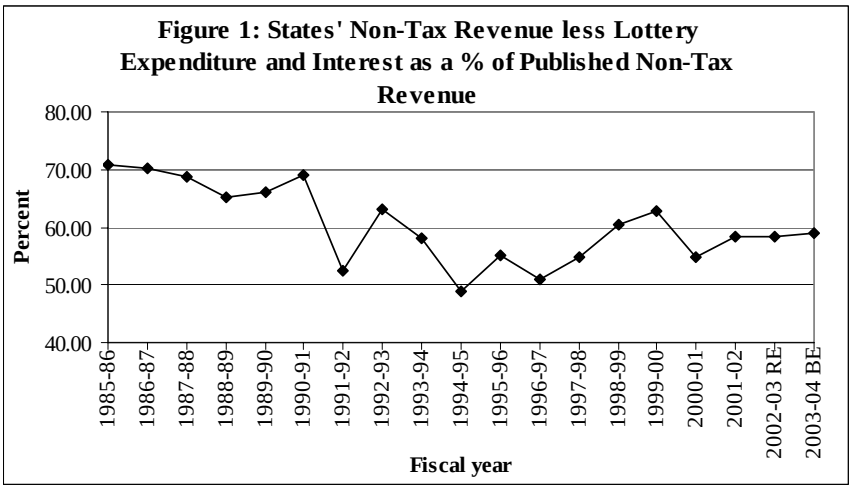
The third example is contra-interest. Information on contra interest is explicitly available in a few cases, such as for Andhra Pradesh.[46] Recent information is reported in Table 5.

Table 5: Andhra Pradesh: Non-Tax Revenue Gross and Net of Contra Interest (Rs Crore)				
	2000-01 (A)	2001-02 (A)	2002-03 (RE)	2003-04 (BE)
State's Own Revenue	13294.83	14468.24	16014.58	18169.12
State's Own Non-Tax Revenue	2923.9	2917.65	3293.38	3592.52
(a) Contra Interest	1170.53	1228.03	1487	1487
(b) Interest Receipts	295.13	310.55	263	298
State's Own Non-Tax Revenue less (a)+(b) as a % of Total	59.97	57.91	54.85	58.61
State's Own Revenue less (a)+(b) as a % of Total	91.20	91.51	90.71	91.82
Source: Government of Andhra Pradesh: Annual Fiscal Framework, 2003-04.				

Unfortunately, despite over-reporting due to contra-interest (particularly for irrigation and possibly power) these and other notional data are only available from a perusal of individual state budgets, if at all. Overall, interest receipts including notional receipts, contributed 28.5% of total non-tax revenue in 2001-02 (and 22.4% in 2003-04 BE). It is of interest to see the combined impact of taking lotteries on a net basis and also excluding interest receipts. These data are shown in Table 6 and Figure 1.

Table 6: Published Non-Tax Revenue Receipts Data versus Receipts Net of Lottery Expenditure and Interest (Rs Crore)			
	2001-02 (Actuals)	2002-03 (RE)	2003-04 (BE)
States' Own Non-Tax Revenue (SONTR)	32,280.90	35,956.40	41,555.30
Total Own Revenue of States (SOR)	160,377.60	181,097.50	207,882.40
SONTR net of Interest Receipts and Lottery Expenditures – A	18,807.50	21,013.20	24,520.70
SOR net of Interest Receipts and Lottery Expenditures – B	146,904.20	166,154.30	190,847.80
A as a % of SONTR	58.26	58.44	59.01
B as a % of SOR	91.60	91.75	91.81
Source: Reserve Bank of India data (www.rbi.org.in)			

[46] Andhra Pradesh, on the other hand, does not run a state lottery.



Data source: Reserve Bank of India obtained from NIPFP.

The last example concerns costing of inter-governmental services. As is well known, pricing of services provided to government departments by other government departments (such as for police services, PWD inspection bungalow accommodation, rental charged for government buildings and financial audit services by the Comptroller and Auditor General) is generally based on administered rate schedules which bear no relation to actual expenditure by the supplying department, let alone market prices. To the extent that actual resource costs of government services are required to correctly estimate cost recovery, this is not possible where the government itself is a service buyer.

b) Revenue and cost recovery: Aggregate trends over time

For whatever they are worth, data on unadjusted non-tax to GSDP ratios of 14 major states as also buoyancy estimates are reported in the annex, Tables A2 and A3. These data suggest declining performance relative to GSDP with 4 exceptions (3 if interest receipts are included). Buoyancies are mostly below unity and even negative in 3 cases (2 if interest receipts are included). It should be noted that Figure 1 shows that non-tax revenue net of interest receipts and lottery expenditure has been declining even relative to declining unadjusted non-tax revenue.

Data reported in Table 7 supplements data in Table 6. In Table 7, indices of non-tax revenue as a percentage of GSDP (1993-94-100) are presented for two sub periods during 1994-95 to 2001-02.[47] While several of the figures are visibly unreliable, the figures suggest improved performance relative to GSDP in net revenue from state lotteries (but see Figure 5 below), social services as a whole largely due to Education, Sports, Art and Culture and, within economic services, irrigation, industries and tourism. Year by year details are in Table A4.

Table 7. Revenues as a percentage of GSDP (1993-94 series): Indices with 1993-94=100 (Average of 19 states*)

YEAR	1994-95 to 1997-98	1998-99 to 2001-02
Total Revenue	107	98
States Own Revenue	158	141
State's own Non-Tax Revenue	200	166
SONTR less State Lottery Expenditures	100	89
SONTR less State Lottery Expenditures Less interest Receipts	96	88
SOR less State Lottery Expenditures Less interest Receipts	96	94
Interest Receipts	135	124
Dividends and Profits	220	338
Non-tax Revenue from General Services (incd state lotteries)	591	541
State lotteries	112	90
General Services (net of state lottery expenditures)	150	129
Net Revenue from State Lotteries	28	69

[47] Non-tax revenue net of state lottery expenditure and interest receipts as a percentage of GSDP averaged 2.53 in 1993-94 for the 19 states in Table 6. This fluctuated but trended downward to 1.87% in 2001-02.

Social Services	98	105
Education, Sports, Art and Culture	98	108
Medical, Public Health and Family Welfare	83	81
Housing	182	124
Urban Development	748	180
Labour and Employment	96	97
Social Security and Welfare	129	133
Economic Services	86	81
Fisheries, Crop Husbandry and Animal Husbandry	88	65
Forestry and Wildlife	79	64
Irrigation	88	135
Power	998	738
Industries (Includes Non-Ferrous Mining and Metallurgical Industries and Other Industries)	112	116
Road Transport	78	53
Tourism	127	132
Note: *: Andhra Pradesh, Arunachal Pradesh, Assam, Goa, Gujarat, Haryana, Himachal Pradesh, Karnataka, Kerala, Maharashtra, Manipur, Meghalaya, Orissa, Punjab, Rajasthan, Sikkim, Tamil Nadu, Tripura and West Bengal.		
Source: Reserve Bank of India data obtained from NIPFP.		

Table 8 compares the contribution made by different sources of non-tax revenue for the same 19 states as in Table 7. Ignoring interest receipts, the major contributor to non-tax revenue has been revenue from economic services throughout the period 1985-86 to 2001-02, though its share has been declining. However, within economic services, the share of revenue from forestry, the largest contributor to non-tax revenue in 1985-86, has declined alarmingly by two thirds. On the other hand, the share of revenue from Industries, mainly consisting of revenue from Non-Ferrous Mining and Metallurgical Industries, has grown by 40 percent over the period. It is interesting to note that both these revenue sources are in the nature of revenue from assets or group iii.1 in the classification proposed in section 1 of the paper.

Table 8: Percentage Contribution to Non-Tax Revenue Net of State Lottery Expenditure

YEAR	1985-86	1993-94	2001-02	2003-04BE
1. Interest Receipts	26.71	34.34	32.86	27.63
2. Dividends and Profits	0.41	0.45	0.46	0.66
3 General Services (net of state lottery expenditures)	9.81	8.28	13.20	14.73
Net Revenue from State Lotteries	0.76	1.02	0.54	2.49
4 Social Services	8.79	6.63	9.13	9.42
Education, Sports, Art and Culture	NA	1.59	2.37	2.66
Medical, Public Health and Family Welfare	NA	2.31	2.22	2.31
Housing	NA	0.43	0.46	0.94
Urban Development	NA	0.20	0.34	0.48
Labour and Employment	NA	0.36	0.43	0.39
Social Security and Welfare	NA	0.50	0.74	0.53
Water Supply and Sanitation	NA	NA	1.18	1.15
5 Economic Services	54.29	50.30	44.35	47.57
Crop Husbandry, Animal Husbandry & Fisheries	2.26	1.61	1.41	1.25
Forestry and Wildlife	17.56	10.85	5.23	5.69
Major and Medium Irrigation projects	4.32	3.42	2.26	3.49
Minor Irrigation	0.74	0.57	0.31	0.30
Power	1.41	1.96	2.76	3.37
Industries (Includes Non-Ferrous Mining and Metallurgical Industries and Other Industries)	12.98	18.23	18.54	20.12
Road Transport	2.99	3.13	2.59	2.25
Tourism	0.04	0.11	0.07	0.12
Total (1 to 5)	100.00	100.00	100.00	100.00
Source: Reserve Bank of India data obtained from NIPFP.				

To provide an indicator of cost recovery, Table 9 presents revenues as a percentage of revenue expenditure. The averages are for the same 19 states as in Table 6. While the table suggests that cost recovery in economic services is around 10 times that in social services, it should be borne in mind that cost recovery figures in economic services are severely biased in an upward direction. By way of comparison, cost recovery rates for economic and social services for 1994-95 in Srivastava and Sen (1997) are respectively 1.63 percent and 0.62 percent.[48] Note that the figures in Table 9 suggest for economic services a declining cost recovery trend till 1997-98 with some recovery thereafter, but no trend in social services.

[48] Their definition of cost recovery rate is implied by their definition of subsidies discussed in section one of this paper.

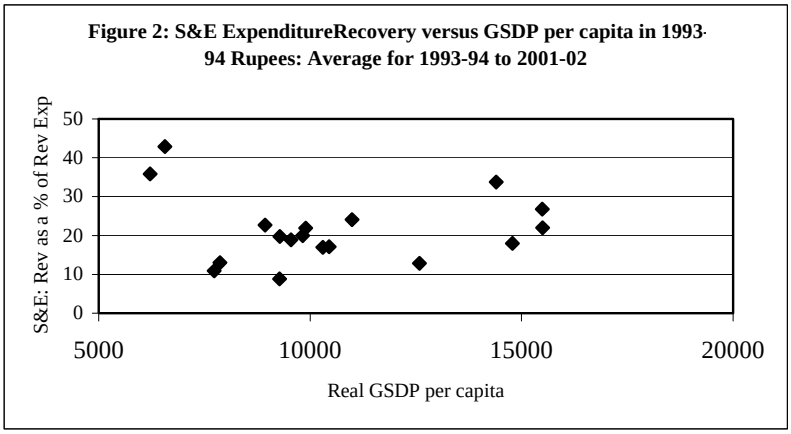
Table 9: Revenue as a Percentage of Revenue Expenditure: Average of 19 states		
YEAR	Economic Services	Social Services
1993-94	24.29	2.52
1994-95	24.38	2.36
1995-96	23.46	2.30
1996-97	20.89	2.24
1997-98	20.59	2.87
1998-99	20.91	2.59
1999-00	24.94	2.56
2000-01	21.97	2.56
2001-02	22.45	2.79
Average	22.65	2.53
Source: Reserve Bank of India data obtained from NIPFP.		

Overall, therefore the picture suggested is one of declining performance of net non-tax revenue, with the decline being greater than that suggested by data in state budgets. Two possible causes are a severe decline in forest revenue and declining or stagnant cost recovery ratios. Given data limitations, these conclusions should be re-examined when better data are available.

c) Revenue and cost recovery: Cross-state comparison

While examination of data on non-tax revenue itself is eschewed given the data quality,[49] it is possible that cost recovery ratios or revenue expenditure ratios can be given some credence. While this is subject to verification with better data, some basic cross-state patterns are now presented. First however, it should be pointed out that the relation between per capita GSDP and cost recovery from expenditure on social and economic services (S&E expenditure) across Indian states is not very robust, though it appears to be mildly positive (the R-square in a linear regression being around 0.3 if 3 outliers are excluded). This can be seen from Figure 2 which plots average data for 19 states. The outliers in the graph are Assam and Orissa which have the best cost recovery performance, bettered only by the rich state, Goa (not shown in the graph), which has a relatively low expenditure GSDP ratio.[50]

Figure 2: S&E ExpenditureRecovery versus GSDP per capita in 1993-94 Rupees: Average for 1993-94 to 2001-02



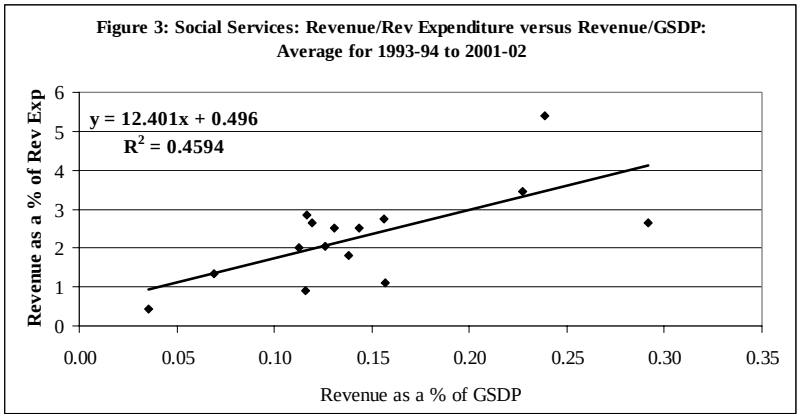
Data source: Reserve Bank of India obtained from NIPFP.

Figures 3 and 4 suggest a stronger relation between cost recovery and the revenue-GSDP ratio rather than per capita GSDP. Cost recovery is positively related to expenditure in both these sectors though there ranks of states across these categories are not highly correlated (Table 11). While this could

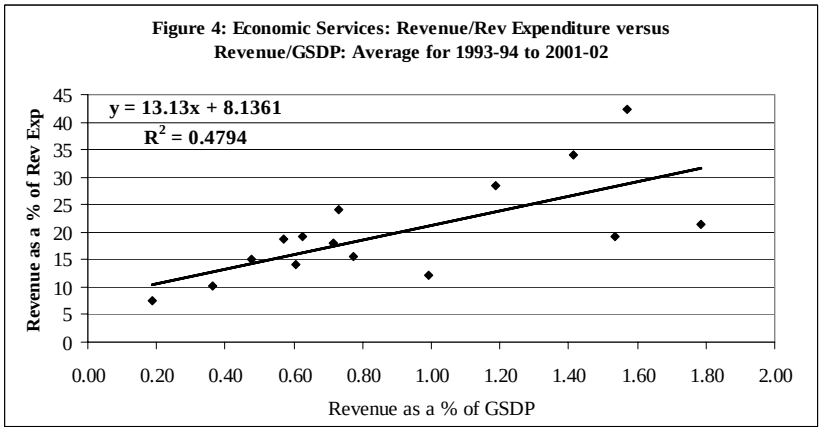
[49] But see the Annex.

[50] States in the graph include Orissa, Assam, Rajasthan, West Bengal, Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, Haryana, Gujarat, Maharashtra, Punjab, Goa, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Himachal Pradesh and Tripura.

partly reflect the underlying influence of higher per capita GSDP, Figure 2 together with the low correlations in Table 11 suggests that this relation warrants further examination.[51]



Data source: Reserve Bank of India obtained from NIPFP.



Data source: Reserve Bank of India obtained from NIPFP.

Intuitively, a ranking of economic and social services in terms of how essential they are can be thought of. The correlation here may reflect better cost recovery possibilities from less essential services. This hypothesis receives additional support from cost recovery in the presumably more essential social services being around a tenth of that in economic services.

Table 11: Revenue as a Percentage of (a) GSDP and (b) Revenue Expenditure
Average for 1993-94 to 2001-02

Social Services			Economic Services		
	Rev/GSDP	Rev/Rev Exp		Rev/GSDP	Rev/Rev Exp
Assam	0.04	0.45	West Bengal	0.19	7.45
Tripura	0.12	0.91	Manipur	0.87	9.81
Manipur	0.16	1.12	Tamil Nadu	0.36	10.11
West Bengal	0.07	1.35	Tripura	0.99	12.07
Orissa	0.14	1.83	Karnataka	0.61	14.01
Andhra Pradesh	0.11	2.01	Kerala	0.48	15.09
Kerala	0.13	2.04	Gujarat	0.77	15.47
Karnataka	0.14	2.50	Andhra Pradesh	0.71	17.93
Gujarat	0.13	2.51	Punjab	0.57	18.76
Maharashtra	0.12	2.64	Rajasthan	0.62	19.26
Himachal Pradesh	0.29	2.65	Himachal Pradesh	1.79	21.41
Tamil Nadu	0.16	2.75	Maharashtra	0.73	24.15
Punjab	0.12	2.85	Haryana	1.19	28.36

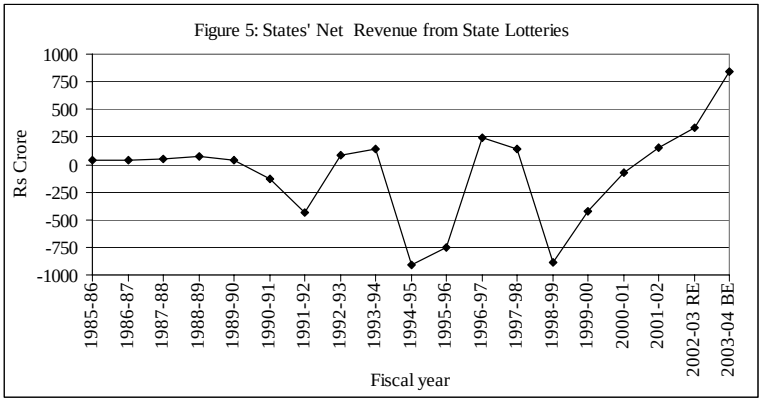
[51] State-wise fixed effects generalized least squares regressions using a panel of 18 states for 1993-94 to 2001-02 show that there is a significant positive (negative) relation between the expenditure-GSDP ratio for social services (economic services) and GSDP per capita. However, if the revenue to revenue expenditure ratio for social (economic) services is regressed on both these variables using the same statistical method, neither variable proves significant (both variables have significant negative effects).

Rajasthan	0.23	3.45	Orissa	1.42	34.02
Haryana	0.24	5.40	Assam	1.57	42.40
Note: Revenue/Revenue Expenditure Rank Correlation for States across Social and Economic Services: 0.232. Revenue/GSDP Rank Correlation: 0.195.					
Data source: Reserve Bank of India obtained from NIPFP.					

Overall, subject to re-examination, this analysis throws up the possibility that practically feasible cost recovery norms could depend on per capita income of states, with lower norms being feasible for poor states.

d) State lottery receipts

How good a revenue source are state lotteries? Figure 5 shows all states' net lottery receipts since 1985-86.[52] The tables and graph together show the severity of distortions in budget data for non-tax revenue on this account. The graph also suggests that net revenue from state lotteries has not proved to be a major source of revenue up to the latest year for which revenue data are available (2001-02): Indeed expenditure exceeded revenue in 7 of the 17 years in the graph. The third point suggested by the graph is that budget estimates for state lottery revenue are unduly optimistic if 2002-03 (RE) and 2003-04 (BE) figures are typical.



Data source: Reserve Bank of India (www.rbi.org.in)

However, it is probable that lottery receipts and associated expenditures are not synchronised. This is suggested by the large year to year fluctuations in both expenses and receipts for some states. To get around this, Table 12 presents aggregate data for selected multi-year periods and selected states which have lotteries. Revenues and expenditures are presented, followed by estimates of return on expenditure.

If the data presented here can be relied on, state lotteries are clearly not a major source of revenue for most states. Nevertheless, the table suggests that lotteries, in fact, do make some contribution to individual state revenues. Particularly profitable lotteries are those of Mizoram, followed distantly by states in the table other than Goa and Sikkim. The case of Sikkim, with its hugely popular, outsourced, online lottery arrangements is puzzling and warrants further examination: Table 12 suggests that Sikkim loses over 50 paise out of every rupee of expenditure on lotteries: This could very well be due to poor data.

Table 12: State lottery receipts and expenditures for selected periods: Selected states

From	To	All States	Goa	Har	Kar	Ker	Mah	Miz	Pun	Sik	TN	WB
Expenditures (Rs lakh)												
1985-86	1989-90	1152		236	36	105	148	0	25	Nil	39	25
1990-91	1994-95	9498		2776	174	241	174	1	1555	306	48	22
1995-96	1999-00	13078	997	5978	113	346	101	1	7	3247	89	41
1985-86	2001-02	32549	2197	9971	433	995	591	4	5073	5812	421	147
1990-91	2001-02	31396	2197	9735	396	890	442	4	5048	5812	382	123
Receipts (Rs lakh)												
1985-86	1989-90	1393		271	73	137	201	1	69	5	36	24
1990-91	1994-95	8243		3569	204	312	214	14	1590	Nil	77	21
1995-96	1999-00	11821	1013	6114	151	417	143	53	479	1699	128	55
1985-86	2001-02	29938	2239	10892	544	1223	759	81	6236	2778	614	182

[52] The number of states in the data varies between 25 in 1985-86 to 29 from 2001-02 onward.

From	To	All States	Goa	Har	Kar	Ker	Mah	Miz	Pun	Sik	TN	WB
1990-91	2001-02	28545	2239	10622	471	1085	559	80	6167	2773	578	159
Return on expenditure (Percent)												
1985-86	1989-90	20.89		14.69	101.29	30.59	35.17	1142.86	180.29	--	-7.18	-2.94
1990-91	1994-95	-13.21		28.57	17.13	29.27	22.55	1844.59	2.26	--	58.35	-3.39
1995-96	1999-00	-9.61	1.65	2.28	33.57	20.55	41.76	4113.49	6775.57	-47.67	44.42	34.93
1985-86	2001-02	-8.02	1.91	9.25	25.86	22.89	28.55	2044.15	22.92	-52.19	45.66	23.86
1990-91	2001-02	-9.08	1.91	9.11	18.93	21.98	26.33	2061.25	22.16	-52.28	51.05	29.21
Source: Reserve Bank of India data obtained from NIPFP.												

e) Dividends from PSUs

As discussed in the introduction, increasing erosion of traditional tax bases due to globalisation will make it necessary for governments to focus on other sources of revenue, including importantly non-tax revenue. One source of revenue which has already been tapped successfully by some countries is dividends from investments in private undertakings. However, currently dividends from public investments in private sector undertakings are of limited importance in India. The bulk of dividends are from PSUs.[53] This discussion, therefore, is limited to dividends from PSUs though future revenue raising strategy of governments in India should increasingly focus on dividends from investments in the private sector.

States derive very little revenue from PSUs despite substantial investment in them by states, the Centre, public financial institutions and others. The Study Group on Reforms in State Public Sector Undertakings (Government of India, 2002, referred to in this section as the Study Group) recently examined their working and made several recommendations for reform. Tables 13 to 16 summarizes their main findings.

Table 13: Structure and Finances of Public Sector Undertakings in States and Union Territories

State	Number of PSUs in 2001		State Equity	Capital Employed	Accumulated Losses	Net Worth	Net Profit
	Total	Manufacturing	Rs Crore 1998-99	Indicator as a % of capital employed (both in 1998-99)			
Manipur	11	7	19	548.89	436.32	174.60	-46.25
Meghalaya	14	6	450	17.94	67.51	98.00	-0.87
Himachal Pradesh	17	6	2130	24.96	10.07	93.14	-0.72
Tripura	12	5	95	58.83	178.20	92.18	-13.86
Pondichery	10	3	262	103.91	44.75	82.36	-6.07
Goa	13	6	574	33.48	9.16	61.02	-0.28
Maharashtra	48	15	33021	23.66	2.75	55.44	0.30
Haryana	22	7	1061	17.91	15.74	47.12	2.11
Sikkim	7	2	34	77.09	101.49	37.09	-21.84
Delhi	8	NA	14612	52.89	46.31	35.06	-6.54
Punjab	24	3	11214	28.46	7.03	33.51	0.30
Madhya Pradesh	18	9	1078	15.81	10.88	30.91	-2.08
Kerala	102	64	9689	42.08	24.13	28.05	-1.59
Karnataka	78	41	18574	22.08	7.81	24.55	0.08
Gujarat	37	9	17408	7.30	6.54	24.06	0.96
Rajasthan	22	9	14199	15.71	1.91	21.38	0.25
Tamil Nadu	67	21	15170	15.42	13.09	20.82	-6.05
Andhra Pradesh	40	18	23259	15.33	7.37	18.78	0.70
Arunachal Pradesh	4	NA	103	8.77	19.84	14.31	-1.02
Orissa	27	8	6962	19.23	24.59	11.47	-4.36
West Bengal	49	32	8552	34.63	44.01	9.80	-11.12
Mizoram	7	2	387	4.27	7.40	7.35	-13.17
Uttar Pradesh	50	19	20683	8.49	13.97	2.27	1.15
Assam	42	22	3353	51.60	92.76	-36.72	-17.91

[53] Detailed revenue information is available, by and large, in the Finance Accounts of states, a source that could not be tapped for this study.

State	Number of PSUs in 2001		State Equity	Capital Employed	Accumulated Losses	Net Worth	Net Profit
Nagaland	4	2	19	187.51	961.77	-98.38	-69.52
J&K	14	7	397	47.82	212.29	-131.18	-28.80
Total/Average	747	323	203306	57.08	91.06	29.11	-9.47

Note and definitions:
1. Capital Employed: Net fixed assets and working capital investment = Investments + internal resources less depreciation
   1.1. Investment: Includes all equity & debt capital of State Govt, Centre, holding companies and financial institutions
   1.2. Investment in working capital: Current assets - current liabilities
   1.3. Net fixed assets: Gross fixed assets less accumulated depreciation
2. Accumulated Losses to Paid-up Capital:100*Accumulated losses/paid-up capital
3. Net Worth: Paid-up capital + reserves + surpluses - intangible assets - accumulated losses - fictitious assets
4. Net Profit or Profit after tax (PAT): PBIT - tax - interest
   4.1. PBIT: Profit before interest and taxes
5. Net Profit to Net Worth (NP to NW): 100*NP/NW

Source: Government of India (2002)

Table 13 shows that, on average net worth is only 29 percent of capital employed with accumulated losses being over 90 percent of capital employed. (furthermore according to figures in the Report, it is 16 percent above total equity investment by states). This erosion of capital of state governments and others is a matter of far greater concern than the fact that the PSU sector is largely loss making (being profitable, if only marginally, in only 7 of the 27 states in the table).

Other financial and profitability indicators are reported in Table 14. The silver lining in the table is that profits before interest and taxes are positive in 15 states, though net profits are negative on average. PSU performance as measured by return on equity in 1998-99 was satisfactory in Uttar Pradesh, Gujarat and Haryana though this did not translate into much dividend income for these governments. Both facts show that state PSU performance need not always be poor, despite mandatory social obligations. This point is discussed further below.

Table 14: Average Financial performance of State PSUs, 1998-99

State	Return on Equity	Net Profit to Net Worth	PBIT to Capital Employed	Debt-Equity Ratio	Dividend	State Non-Tax Revenue from Dividends: RBI Data
	Percent , 1998-99				Rs Cr , 1998-99	
Uttar Pradesh	12.38	50.75	6.87	10.00	1.08	5.92
Gujarat	11.67	3.98	4.33	7.27	29.38	33.60
Haryana	9.94	4.49	-4.32	3.11	2.40	2.51
Andhra Pradesh	3.68	3.75	-3.88	4.28	1.92	1.39
Rajasthan	1.46	1.15	5.25	3.28	4.56	5.10
Maharashtra	1.27	0.54	1.94	1.88	2.28	15.88
Punjab	0.90	0.89	10.56	1.88	1.09	1.30
Goa	0.56	-0.47	1.50	0.90	0.02	3.52
Karnataka	0.34	0.32	-16.47	3.30	1.68	3.22
Sikkim	-0.89	-58.89	6.16	1.88	0.45	1.00
Himachal Pradesh	-2.63	-0.77	8.72	3.23	0.11	0.65
Kerala	-3.64	-5.66	1.38	1.86	8.48	10.65
Meghalaya	-4.77	-0.89	0.56	4.49	0.06	0.03
Pondichery	-5.66	-7.37	-44.96	0.16	0.30	NA
Manipur	-8.00	-26.49	-0.22	0.27	0.00	0.00
Nagaland	-8.15	70.66	-11.24	0.27	0.00	0.00
Delhi	-10.02	-18.66	-57.14	1.33	69.74	7.00
Madhya Pradesh	-10.21	-6.74	-0.88	3.30	1.06	2.69
Arunachal Pradesh	-11.39	-7.11	-2.89	4.45	0.00	0.00

State	Return on Equity	Net Profit to Net Worth	PBIT to Capital Employed	Debt-Equity Ratio	Dividend	State Non-Tax Revenue from Dividends: RBI Data
Orissa	-18.73	-38.05	6.02	3.19	163.34	33.00
Tripura	-21.09	-15.04	7.22	0.87	0.00	0.00
West Bengal	-31.89	-113.46	11.05	2.76	0.55	5.42
Assam	-34.38	48.76	1.40	1.10	1.79	1.20
Tamil Nadu	-37.43	-29.04	-10.44	3.97	14.83	25.49
J&K	-54.46	21.96	11.76	2.06	NA	9.60
Mizoram	-307.24	-179.13	-3.81	1.23	0.00	0.00
TOTAL	-1.66	-6.30	3.64	2.76	305.12	220.76

Notes: 1. Return on Equity and Debt-Equity ratio figures in italics are for 1997-98.
2. Figures in bold in the last column exceed dividends reported by the Study Group: Being logically impossible, this points to serious data discrepancies.
3. Return on Equity: 100*PAT/Capital Employed.
4. PAT, Capital employed and other terms are defined in the notes to Table 13.

Source: Government of India (2002)

Table 15 presents information on the distribution of PSUs according to (non-) performance characteristics. In terms of dividends, Delhi (37.5 percent), Gujarat (21.6 percent) and Rajasthan (18.2 percent) had the largest proportion of dividend paying PSUs. The highest frequency of non-performing PSUs were in the Eastern and North-Eastern states excluding Meghalaya and Sikkim, and in Jammu and Kashmir. In these states most PSUs made zero or negative net profits. In fact large percentages of PSUs in these states (as also, unexpectedly, Tamil Nadu) had a negative net worth. Dividend payouts, as would be expected, are highly correlated with PSU profitability.

Table 15: Distribution of PSUs by Non-Performance Indicators, c. 1998-99

State/ Union Territory	Number of Reporting PSUs	PSUs with No Dividend payout (%)	PSUs with Zero or Negative Net Profit (%)	PSUs with Accumulated Losses (%)	PSUs with Negative Net Worth (%)
Arunachal Pradesh	4	100.0	100.0	100.0	50.0
Mizoram	8	100.0	100.0	75.0	0.0
Nagaland	4	100.0	100.0	75.0	50.0
Manipur	11	100.0	90.9	81.8	45.5
Jammu & Kashmir	14	100.0	78.6	85.7	42.9
Tripura	12	100.0	50.0	50.0	0.0
West Bengal	49	97.9	79.6	85.7	55.1
Assam	41	97.5	82.9	87.5	65.0
Uttar Pradesh	50	96.0	52.0	62.0	40.0
Himachal Pradesh	17	94.1	47.1	64.7	11.8
Maharashtra	48	93.8	62.5	41.7	16.7
Meghalaya	14	92.9	71.4	85.7	21.4
Orissa	27	92.6	55.6	55.6	25.9
Andhra Pradesh	40	92.5	52.5	65.0	27.5
Goa	13	92.3	53.8	53.8	30.8
Punjab	24	91.7	75.0	41.7	4.2
Karnataka	78	91.0	56.4	52.6	29.5
Pondicherry	10	90.0	50.0	40.0	10.0
Madhya Pradesh	18	88.9	55.6	50.0	11.1
Kerala	102	88.2	54.9	59.8	34.3
Sikkim	7	85.7	71.4	42.9	14.3
Haryana	21	85.7	61.9	38.1	9.5
Tamil Nadu	67	83.6	65.7	62.7	50.7
Rajasthan	22	81.8	31.8	22.7	18.2
Gujarat	37	78.4	54.1	37.8	27.0

State/ Union Territory	Number of Reporting PSUs	PSUs with No Dividend payout (%)	PSUs with Zero or Negative Net Profit (%)	PSUs with Accumulated Losses (%)	PSUs with Negative Net Worth (%)
Delhi	8	62.5	50.0	37.5	25.0
Average	28.7	91.4	65.5	59.8	27.6

Notes: (a) For all PSUs data are for the latest available year, which is 1998-99 for the bulk of PSUs. Data are incomplete for 3 PSUs in Assam and 2 in West Bengal.
(b) Definitions are in the notes to Table 13.

Data Source: Government of India (2002)

Returning to Table 14, as stated, return on equity can admittedly not be expected to be at par with private sector companies given social obligations. The Study Group proposed return on equity norms for different categories of PSUs taking obligations into account. As Table 16 shows, PSU performance was far below Study Group norms except for PSUs in the category Trading and Services.[54] From the perspective of non-tax revenue generation, public sector activities in other sectors would appear to be non-contributing or contributing poorly, particular PSUs devoted to promotion or welfare and public utilities (including in the power sector). A positive lesson to be drawn from this is that, contrary to the general belief, it is possible for PSUs in selected sectors, even state PSUs, to earn reasonable profits.

Table 16: Return on Equity For State PSUs by Category: All India (Percent)

Category	1998-99	1990-91	Study Group Norm
Manufacturing	4.95	2.85	12
Trading and Services	11.47	15.84	10
Financial	5.48	6.8	9
Promotional	-0.43	3.03	8
Welfare	0.93	-8.74	5
Utility	3.44	4.79	12

Note: Return on Equity: 100*PAT/Capital Employed (PAT and Capital employed are defined in the notes to Table 13).

Source: Government of India (2002)

Besides proposing rate of return norms, major PSU reforms proposed by the Study Group include

(a) Setting up of disinvestment commissions in each state to look into privatisation and restructuring of PSUs. Furthermore, the Study Group recommends privatisation of manufacturing and trading PSUs and manufacturing activities of promotional PSUs.

(b) Conversion of non-commercial welfare PSUs into government departments.

(c) A variety of institutional reforms including minimum tenures for CEOs, greater operational autonomy, strengthening of management and also the audit function and introduction of a system of Memoranda of Understanding (MOUs) between state governments and PSUs.

Several of these institutional reforms are part of the framework for effective governance presented below (see Table 18). However, the motivation of the Study Group's privatisation recommendations does not include improving revenue from dividends but instead derives from a concern for the appropriate sphere of public activities. Though their implementation may not result in improved revenue from dividends, this should not be considered a drawback. To improve dividend payout performance, which is apparently poor even for most healthy PSUs, norms need to be devised for dividend payouts.

To conclude this discussion a case study of a road transport corporation is presented to illustrate how, despite technical efficiency, profitably can be eroded by, first, ill-advised public sector participation in

[54] However, even here, the Study Group points to inefficient financial management and fluctuating profits. While state by state information by categories is provided in the Study Group's report, given different investment levels in different categories, to arrive at overall state-wise norms a detailed computational exercise has to be undertaken.

providing private goods when the government is unable to curb private sector non-compliance and, second, social obligations.

Case study: AP's Road Transport Corporation (APSRTC), 2000-01[55]

Overall adequacy of provision of road transport services for passengers in AP

APSRTC is the monopoly provider of bus transport services in Andhra Pradesh (AP). APSRTC's services can be divided into two components: A "merit good" component and a private good component. The former arises since it provides connectivity to remote areas which are uneconomical to private operators and also due to travel concessions to students, senior citizens and other target groups. Given the public and merit goods nature of a portion of APSRTC services, outright and full privatisation does not appear to be the best option.

Nevertheless, the quantum of services provided by APSRTC is inadequate. Per capita availability of passenger bus seats is lower than in most other states (particularly Southern states) due to the inability of APSRTC to provide adequate capacity and despite weak enforcement. The situation is mitigated to an extent by unauthorized vehicles, particularly smaller passenger vehicles (but also contract carriages plying as stage carriages). Reliable data are not available, but to the extent that small vehicles ply where buses are more economical, this increases the cost of services to the public.

APSRTC's functioning

APSRTC, is jointly owned by the Governments of India and AP, in the approximate ratio 1:2. With the world's largest bus fleet, it provides both inter-city and intra-city bus services throughout AP. In terms of physical performance indicators[56] and importantly, safety, APSRTC is easily India's most efficient large-scale bus operator. In certain respects it has even received internationally recognition for its efficiency. In terms of customer satisfaction, APSRTC ranks high, but punctuality, reliability, crew behaviour and adequacy on certain routes are capable of improvement. APSRTC became a loss making organisation in 1997-98. The two main cause of this are

- A steep increase in APSRTC's motor vehicle tax burden, on moving from a specific tax regime to an ad valorem tax regime, from Rs 127 crore in 1994-95 to Rs 282 crore in 1997-98.[57]
- A falling occupancy ratio due to private sector competition from 76 percent in 1994-95 to 61 percent in 2000-01.

Nevertheless, APSRTC remains profitable before (motor vehicle) taxes. The following table gives summary statistics of APSRTC's financial performance.

Table 17: APSRTC's financial performance, 1994-95 and 2000-01

All figures in paise per route km.	1994-95	2000-01
Cost	795	1263
Revenue	803	1166
Motor Vehicle Tax	64	172
Net of Tax Cost in 1994-95 paise*	731	739
Revenue in 1994-95 paise*	803	791
Pre-MVT profit rate	9.85%	6.87%
Post-MVT profit rate	1.00%	–7.68%

Notes: To obtain real figures an appropriate price index needs to be used (the inappropriate GDP deflator is provisionally used here).
Corresponding 2001-02 cost and revenue figures up to August are1310 and 1257 leading to a projected loss of around Rs 200 crore for the year. This is to be financed by market borrowing without a government guarantee.

Source: APSRTC except GDP deflator, World Bank.

Inferences from this table are that (a) APSRTC has been unable to hold down real costs despite potential scale economies, though whether this is due to exogenous factors or not requires additional

[55] This case study is based on earlier work by me for the World Bank.
[56] Indicators include fuel efficiency, tire use efficiency, age of the bus fleet, fleet utilization and off-road time, route kilometers per bus, staff-bus ratio and breakdown rate.
[57] Instead of a revenue neutral rate of 9.7 percent, APSRTC's tax rate was fixed at 13% and subsequently raised to 15 percent. This is by far the highest rate of motor vehicle tax applying to state transport undertakings in the country

enquiry. (b) APSRTC's revenue realization has deteriorated by around 1.5 percent over the past 7 years. Inadequate surplus generation leads directly to inadequate resources for fleet expansion.

Major constraints faced by APSRTC

On all APSRTC routes a floor equal to private bus capacity on the date of nationalization is prescribed. APSRTC capacity on these routes cannot fall below this. Since APSRTC is obliged to provide services to all major villages, additional uneconomical routes are added annually. APSRTC is required to issue concessional or free travel passes to specified groups (handicapped, veterans, etc), mainly students. The total subsidy bill in 2000-01 was Rs 202[58] crore or about 8 percent of costs. Approximately 7000 buses of a total of over 19000 buses ply on loss making routes (including all intra-city buses). Due to poor enforcement, APSRTC is unable to sub-contract off-peak routes to small vehicle operators as there are no takers.

APSRTC's wage bill per employee is above that of private operators due to its adherence to minimum wage laws and negotiated wage increases, though comparative data are not available. A major consequence is that it is uneconomical for APSRTC to use smaller vehicles at low occupancy times and increase the frequency of buses on routes where this is possible, as this leads to increased manpower costs.

Reform suggestions

APSRTC should not be made to bear the cost of "public good" and "merit good" components of APSRTC's services, though it should be permitted to levy fares in accordance with consumer willingness to pay to maximize recovery from users. However, the rest of the subsidy burden should be reimbursed according to a predetermined formula. No other budgetary support should be given to APSRTC. For other routes or times of day, which are well served by the private sector, APSRTC should be allowed to compete with the private sector on a commercial basis with no obligation to provide bus services if they prove to be uneconomical. There is apparently no long term justification for continuation of "schemes" which prohibit private operators and related road use regulations. Regarding taxation, rates of motor vehicles tax on the private sector and APSRTC should be equalized between all modes of road passenger transport, on a per seat basis, by raising rates of tax on the private sector and reverting to a per seat tax basis for APSRTC. This should be revenue enhancing.[59]

4) Institutional arrangements and case studies

a) Principles

To improve non-tax revenue performance, institutional reforms hold the key.[60] First, as pointed out above, for most activities, government objectives are not clearly specified. Consequently, ministers in charge of and bureaucrats manning concerned departments have to set their own objectives. If performance is not clearly defined, it cannot be measured and the government cannot be made accountable for performance. Table 18, based on Das-Gupta (2004b) outlines the structure of performance oriented institutions.[61]

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[58] This estimate, by APSRTC, merely reflects differences in concessional and full fares It takes no account of administered fares.

[59] Specific rates on the private sector have not been revised for the past four years despite inflation.

[60] An assessment of the quality of public service delivery in India under current (2001) institutional arrangements, in terms of "access, use, reliability and user satisfaction", is in Paul et. al. (2004). Five services, drinking water supply, health care, the public distribution system (for foodgrains and essentials), public transport and primary education are examined. Note that cost efficiency was not a focus of this study. Of the 22 states included in the study, service delivery performance was found to be best in Tamil Nadu, then Gujarat, Karnataka and Maharashtra, in that order. However, further service quality improvements were possible even in Tamil Nadu.

[61] The framework presented here focuses on public sector reform. World Bank (2003a) presents a more inclusive framework for improving service delivery for the poor covering different institutional options for service provision.

Table 18: Institutions for Effective Government Administration	
Objective	Operational implementation
Clarity of goals	(a) Mission and Vision statements (b) Citizen's Charter (c) Medium range modernization plan
Measuring goal achievement or performance	Systems of Performance Indicators reflecting effectiveness, efficiency and citizen's service quality, that enable achievement of the administration's mission and modernization plan to be quantitatively assessed[62]
Enabling performance	(a) Operational autonomy. (b) Functional organization
Communicating performance	(a) Annual Reports to government on the administrations effectiveness and efficiency in delivering performance. (b) Performance Reports for individuals, functional units and field offices based on performance indicators
Rewarding and motivating performance	Administration budgets linked to performance Positive and negative individual and unit performance incentives

The importance of clear mission statements has been emphasised in the context of private sector management. For bureaucracies this has been echoed in an important recent theoretical contribution by Dewatripont, Jewitt and Tirole (1999) drawing on the pathbreaking examination of bureaucracies in Wilson (1989). Both these studies also suggest the importance of operational autonomy in enabling performance. The importance of properly designed performance incentives has also been widely noted and there is growing empirical support for this (e.g. see Olson, 1996). Within performance incentives, the introduction of well designed collection and enforcement incentives to improve cost recovery performance is of key importance.[63]

Instead of performance orientation, voter orientation of incumbent governments tends to be transmitted to bureaucrats heading spending departments in the form of an orientation towards increased departmental budgets and spending.[64] Importantly, a concern for cost efficiency, let alone cost recovery, is currently absent in most spending departments of state governments.[65] Such an orientation can only be institutionalised if efficiency is seen to be an integral part of performance. Stepping back from a purely not-tax revenue perspective, it is worth repeating that effectiveness, the other component of performance, cannot be defined if a department's mission is not clearly specified. In this context, clear government statements of the desired financing pattern for different goods and services it provides, including benchmarks for cost recovery (along the lines suggested in Table 2 above) is clearly a vital prerequisite.[66]

In terms of communicating performance, performance budgets brought out by spending departments of some state governments are poorly designed and largely fail to reflect even the few performance parameters that have been identified for different departments. Their compilation is viewed as an irksome routine chore, ignored by those responsible in government for evaluating performance. In addition they are generally hard to obtain – even within departments.

In line with this framework, Das-Gupta (2004a) suggests the following specific principles (applications in specific case studies are to be found in this paper and also below).

> Principle 1: In applicable sectors introduction of collection and enforcement incentives for field staff, both rewards and sanctions, can lead to greater collection effort and cost recovery.
>
> Principle 2: In applicable sectors computation of notional cost-based prices and explicit compensation via book transfers for the difference between notional prices and user charges can bring about greater transparency and realism in costing of government services by removing hidden cross-subsidies.

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[62] For an introduction to and assessment of numerical performance measurement, see Carter (1991).
[63] This point was made in comments on a draft of this paper by M. Govinda Rao.
[64] This observation, discussed insightfully by Niskanen (1975) is borne out by my personal experience, though no systematic evidence in the Indian context has yet been compiled.
[65] This assertion is based on my personal experience from interactions with around 30 heads of spending departments and PSUs, and also other department staff, in 4 states. Unfortunately, no formal statistical evidence is available to verify this.
[66] This point was made in comments on a draft of this paper by M. Govinda Rao.

> Principle 3: Physical and financial performance indicators should reflect outputs within the control of responsible departments and social outcomes relative to targets as accurately as possible and be subject to external auditing (indicators currently used are largely inadequate).

As mentioned earlier a strategy being experimented with in some states is partial or complete retention of user charges by the levying unit.[67] This leads to management flexibility at the operational level imparting greater control over expenditure allocation, presumably a positive feature. As against this, three possible pitfalls need to be borne in mind. First, without adequate accounting and audit control, this may give rise to a new channel for siphoning of funds. Second, such de facto earmarking can potentially lead to a misallocation of government expenditure, with some activities being over-funded and other, possibly more important activities being under-funded. Third, unless suitable reporting and accounting conventions are devised, the principle that all government receipts and expenditures must be reflected in the consolidated fund will be violated.[68] In particular, non-tax revenue and expenditure by user charge retaining units will be understated. Whether or not user charge retention leads to service improvement or not is an empirical question which cannot be answered by appeal to theory. Since no study, to our knowledge, is yet available on the service delivery impact of user charge retention, no assessment of this institution is as yet possible.

b) Institutions and case studies in selected sectors[69]

i) Minerals and mining

Mineral royalties and rents are the most important source of non-tax revenue in several states, often next only to the 4 major taxes (see Table 8). For departments of mines and geology, revenue generation is an important activity along with conservation and enforcement. In this respect they bear a close resemblance to transport departments which collect motor vehicles taxes and also provide regulatory and transport services (the latter generally through road transport corporations).

Briefly, the legal position covering revenue from mines and minerals is, as follows. The Constitution Seventh Schedule, List II (State List) Entry 50, includes taxes on mineral rights; entry 53, List I gives the Centre power to regulate and develop oilfields and mineral development; and entry 54, List I provides for Parliamentary regulation of this activity. The legal framework is given in the Mines and Minerals (Development and Regulation) Act, 1957. In particular, this act distinguishes between major and minor minerals. The Centre has royalty rate setting powers for the former, states for the latter. Major mineral rates are specified in the Second Schedule of this Act. The (Central) Mineral Concession Rules, 1960 under this Act lays down procedures for permits and licences for prospecting and operating mining leases on both govt. and private land – for major minerals. For states a similar function is served by state-wise Minor Mineral Concession Rules, where they exist. Additional regulation of conservation and development is from the (Central) Mineral Conservation and Development Rules, 1988 and the (Central) Granite Conservation and Development Rules, 1994.

Royalty rates for major minerals have recently been revised by the Centre by around 5 percent over rates prevailing in 2000.[70] Over the years, states have faced revenue problems due to infrequent Central revision of some major (specific) mineral royalty rates, particularly for coal, petroleum and iron ore. Regarding rate setting, for example Assam, a major oil producing state, has a continuing complaint that the Centre fixes royalty on crude oil at below 50 percent of the import parity price (Srivastava, et. al., 1999).

Minor mineral royalty rates are typically revised once in 3 years by states along with rates of "dead rents". Conversion of specific rates to ad valorem rates with a specific floor can improve the buoyancy of royalties, particularly when there is a boom in mineral prices. Rates of fines and penalty for violation of leases for minor minerals, which are typically specific, are also set by states though they are seldom revised to keep pace with inflation. Furthermore, given their low levels and poor enforcement, their deterrent effect is limited.

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[67] The discussion in the paragraph was suggested by a participant at the final ADB-NIPFP-ASCI workshop in March, 2005 where this paper was presented. The participant has my grateful thanks.

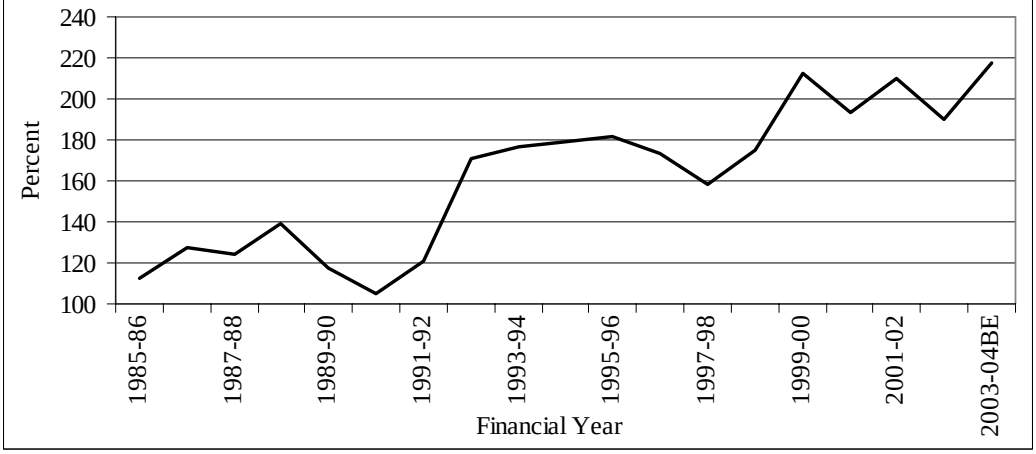
[68] The Comptroller and Auditor General has, it is understood, objected to procedures to enable user charge retention in Andhra Pradesh for this reason.

[69] The discussion here draws heavily on Das-Gupta (2004a).

[70] There are 51 major minerals. With some significant exceptions, royalty rates fixed by the Central Government are ad valorem.

A recent Supreme Court judgement that state governments have the power to levy cess on coal-bearing lands, tea estates, brickfields and lands with minor minerals has further enhanced the revenue potential of minerals (but in this case for tax revenue).[71]

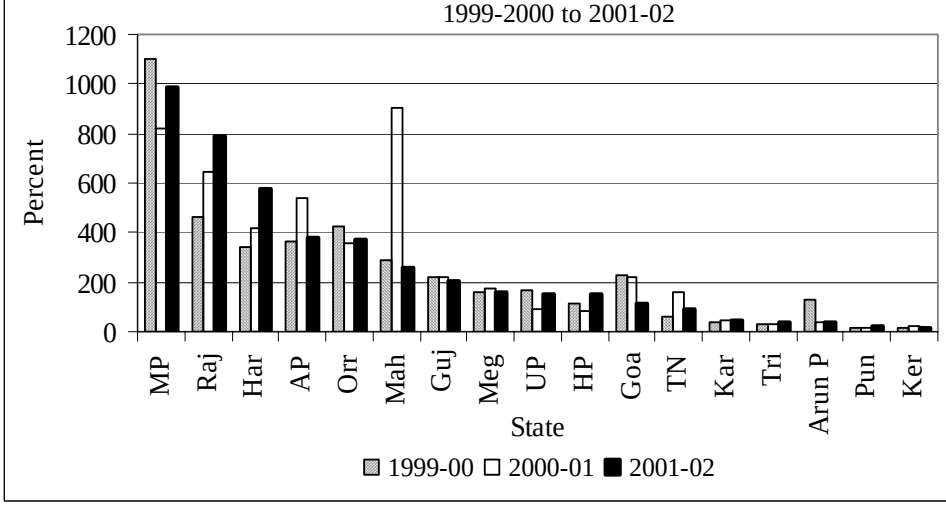
Figure 6: All States' Non-Tax Revenue as a % of Revenue Expenditure: Non-Ferrous Mining and Metallurgical Industries and Other Industries



Data Source: Reserve Bank of India obtained from NIPFP.

While separate figures for revenue from Mines and Geology are available only from the Finance Accounts – and disaggregation of expenditure into revenue and non-revenue activity may not be available even in state budgets – the bulk of non-tax revenue from industries is from mining. Figures 6 and 7 graph revenue-expenditure ratios in aggregate and across states. Figure 6 shows that net revenue generation from industries shows a highly satisfactory upward trend. However, Figure 7 shows that this ratio varies widely across states. Without further data disaggregation it is difficult to identify reasons for this. The case study below of the Karnataka Department of Mines and Geology shows that revenue collection costs of this department are comparable to state tax collecting departments, though cost recovery from Industries as a whole is below 100 percent in Karnataka (Figure 7). To permit urgently needed analysis of this important state revenue source, it is imperative that disaggregated data be made readily available.

Figure 7: All States' Non-Tax Revenue as a % of Revenue Expenditure Non-Ferrous Mining and Metallurgical Industries and Other Industries 1999-2000 to 2001-02



[71] See "States can levy taxes on land says SC" **Business Standard**, January 22, 2004

Note: Revenue is below 100 percent of expenditure in Tamil Nadu, Karnataka, Tripura, Arunachal Pradesh,
Punjab and Kerala.

Data Source: Reserve Bank of India obtained from NIPFP.

Administration in many of these departments has features and problems similar to tax raising departments. Possible reform measures to improve revenue generation are identified below in the course of a case study of the Karnataka Department of Mines and Geology.

It should be noted that in Madhya Pradesh, which has the highest revenue to expenditure ratio and where revenue from industries has been contributing around 40 percent of non-tax revenue in recent years,[72] auction of leases for minor minerals and royalty administration are with district collectors rather than with the state government department. In fact, till 2003, leasing and collection of minor mineral revenue was done directly by Panchayats. The reform described was motivated by sharply declining revenue from royalties as well as a desire by the state to ensure more equal distribution of mining royalties across local governments in the state.[73] This experience illustrated a case where decentralisation to local government did not prove beneficial, contrary to the generally held presumption.

Case Study: Karnataka Department of Mines and Geology, 2003-04

Karnataka is one of the top 3 producing states of a number of minerals including chromite, gold, iron ore, manganese, felsite, kyanite, limeshell, magnesite, and shale. The major sources of revenue from mines and minerals arise from mineral royalties and from leasing of mineral concessions.

A key feature of the Department of Mines is that it views its revenue generation role as secondary to regulation and exploitation of mines and minerals. The Department is organised in 18 district offices headed by Deputy Directors or, with unfilled vacancies, by Senior Geologists. 7 districts in the state have no Departmental presence. Geologists (2-3 per office) and an office superintendent besides clerical and ministerial staff man district offices. All offices have staff below their sanctioned strength. District offices perform regulatory, enforcement and royalty collection functions, and issue minor mineral leases according to prescribed priorities.

The Department administers around 600 major mineral leases, 3000 decorative granite leases and 70,000-80,000 minor mineral leases with this staff. Total departmental expenditure amounted to around 3% of revenue collected in 2002-03 (Table 19). Of this, administration and maintenance (i.e. non-plan) expenditure made up five sixths. The Department's non-plan expenditure to revenue ratio compares favourably with Karnataka's tax collection cost during the same period, which amounts to just over 3.3 percent of tax revenue in the same year.

Table 19: Karnataka Department of Mines and Geology: Revenue & Expenditure (Rs. Lakh)

Year	Revenue	Expenditure			Total Expenditure as a % of Revenue	Non-Plan Expenditure as a % of Revenue
		Plan	Non-Plan	Total		
1998-99	9498.86	59.07	366.64	425.71	4.48	3.86
1999-00	10942.56	65.25	465.26	530.51	4.85	4.25
2000-01	15135.34	64.56	443.67	508.23	3.36	2.93
2001-02	14740.73	130.90	455.76	586.66	3.98	3.09
2002-03	17543.02	116.39	432.99	549.38	3.13	2.47

Source: Das-Gupta (2004a) based on data from Government of Karnataka, Department of Mines and Geology

Table 20 provides details of revenue by category of minerals. The table shows that the revenue importance of minor minerals has recently outstripped that of major minerals, partly due to depressed mineral prices but also due to infrequent and, in some cases, inadequate Central rate revision.

[72] Both before and after the formation of Chhatisgarh.
[73] This paragraph is based on a special supplement in the **Financial Express** (2004).

Table 20: Karnataka: Revenues from Major & Minor Minerals, 1990-91 to 2002-03 (Rs. Lakh)					
Year	Major	Minor	Total	of which Granite	Annual Growth Rate of Total Revenue (%)
1990-91	839.74	566.66	1406.40	133.00	
1995-96	6216.62	4199.38	10416.00	2605.63	89.03
1999-00	5677.13	5265.43	10942.56	1944.36	15.20
2002-03	8107.54	8135.48	17543.02	2343.88	19.01
Average Annual Growth Rate: 1990-91 to 2002-03					26.87
Standard Deviation of Average Annual Growth Rate: 1990-91 to 2002-03					31.30
Note: 1. For 2002-03 there is a discrepancy between total realisation and realisation from major plus minor minerals. Source: Das-Gupta (2004a) based on data from Government of Karnataka, Department of Mines and Geology					

Analysis of the department's commercial activities suggests that certain areas are in need of reform.

Regarding the issuing of mining leases, the process for major minerals is cumbersome and can take 5 to 6 years. A major reason for this is the need for scrutiny and clearance by several state departments (Forest, Environment, Revenue, Pollution Control Board, besides Mines) as well as the Centre. Streamlining is possible by stipulating time limits with accountability, and introducing select e-governance initiatives.

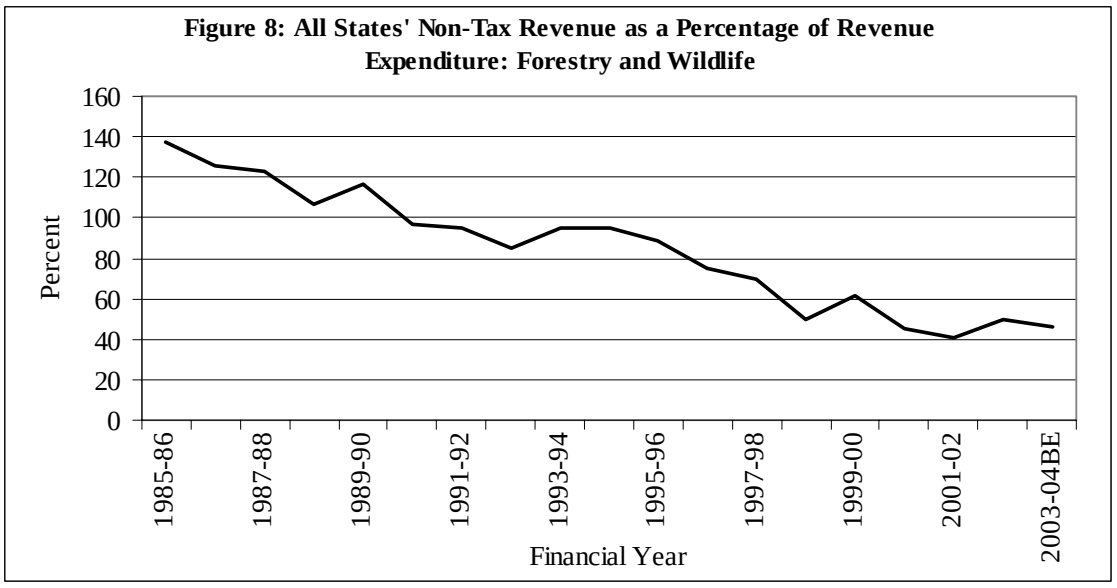
Currently, assessment of royalties for minor minerals is done in the field on a best judgement basis by mines inspectors, often without owners being present. This has, for example, led to around Rs 4 crore of arrears being locked up in disputes for over three years. While there is self assessment of royalty for major minerals and granite with a system of monthly return filing, "scrutiny" of self-assessed royalties has yet to be put on a scientific basis. Consequently, the assessment procedure for royalties is in need of scientific streamlining and introduction of performance incentives. On the other hand, no major problems have been reported with the functioning of royalty deduction at source by government companies from contractors.

The department currently has 7 check posts which are entirely staffed by non-gazetted staff and undermanned. To achieve economies of scope, outsourcing of check post management to, say, the Commercial Tax Department (CTD), on an agency basis could be considered. Regarding mobile squads, the department estimates that royalty realisation could go up by Rs 60 to 70 crore per year if equipment for 5 additional mobile squads (5 jeeps and 10 mobile phones) could be provided. No additional staff need be hired for a pilot project of 1 jeep and two mobile phones.

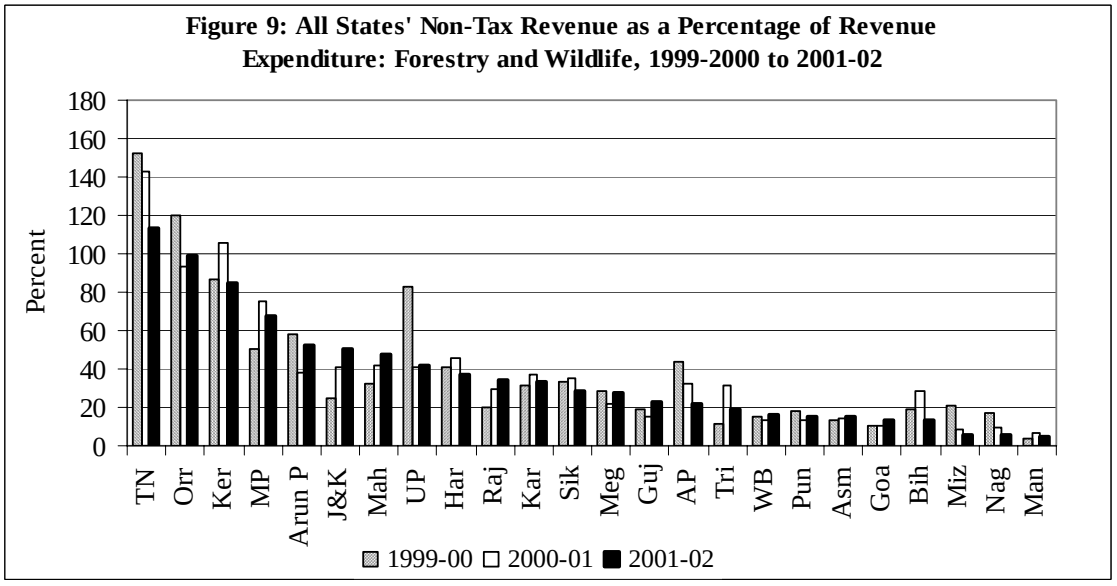
ii) Forestry

Revenue from Forestry and Wildlife, has moved from the most important source of non-tax revenue in the mid '80s to a distant second place in recent years (Table 8). This suggests that forest revenue management is in urgent need of reform and streamlining. Causes of the revenue decline as well as some reform suggestions are discussed in this section.

With regard to cost recovery, from a net revenue contributor in the mid 1980s, forest departments became, on average, net resources users after 1990 and, in fact, contributed only around 40 percent of expenditure in 2001-02 (Figure 8). This is the case in all but 3 states in recent years (Figure 9).



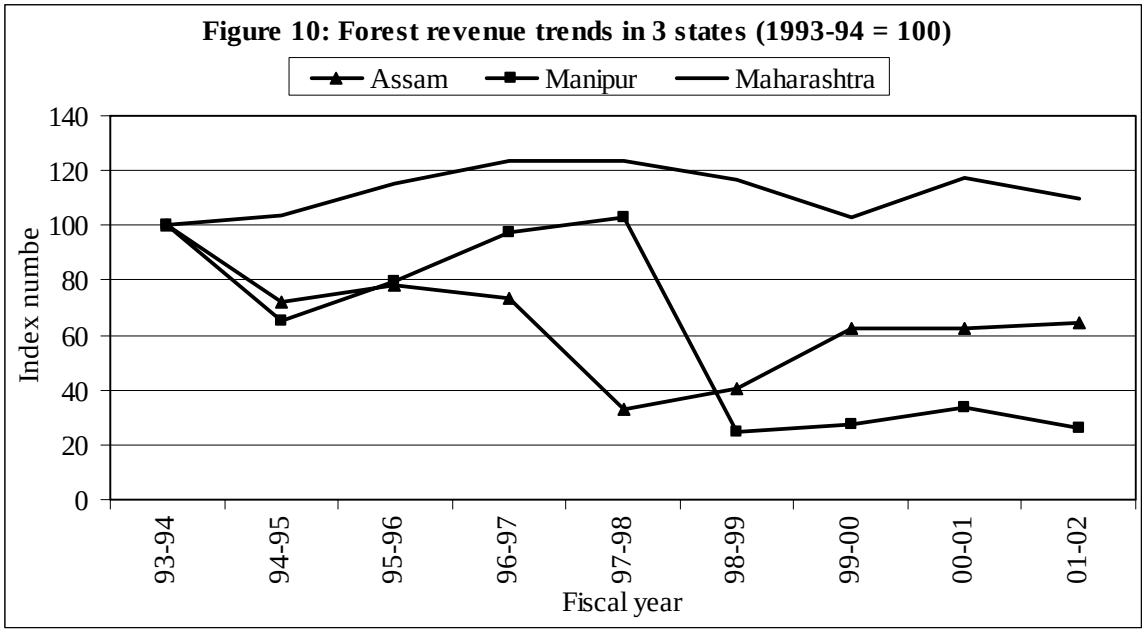
Data Source: Reserve Bank of India obtained from NIPFP.



Data Source: Reserve Bank of India obtained from NIPFP.

The major source of revenue of forest departments is from auctioning and sale of timber which is a government monopoly.[74] However according to a Supreme Court ruling, silviculture and timber exploitation cannot be undertaken by a state in a forest zone until it has in place "scientific" work plans covering the zone. The failure of some states to draw up work plans is the chief cause of severely declining forest revenues pointed out above. The decline is particularly marked in the North-Eastern states Assam and Mizoram (Figure 10).

[74] In sale of trees from private land only the auction commission gets reflected in government revenues.



Data Source: Reserve Bank of India obtained from NIPFP.

Other minor sources of revenue, for example in Karnataka, can be seen in Table 21. Even in Karnataka forest revenue from timber auctions, eucalyptus and sandalwood has been falling in recent years. This is partly due to depressed market conditions and partly due to incomplete work plans.[75]

[75] Karnataka's forest revenues are partly channelled through 3 forest corporations whose earnings are not reflected in the table. The corporations are the Karnataka Forest Development Corporation (KFDC) which develops, maintains and exploits eucalyptus and rubber plantations, the Karnataka State Forest Industries Corporation (KSFIC), engaged in logging on an agency basis, sale of fuelwood and production of plywood, veneer, furniture and matches, and the Karnataka Cashew Development Corporation (KCDC) which manages cashew plantations. The combined tax and dividend contribution of these corporations was around Rs 2 crore in 2003. In Karnataka, zoo management is also in the hands of a PSU.

Table 21: Karnataka: Revenue from Forest Produce and Regulation (Rs in Lakh)				
Budget Head	1998-99	1999-2000	2000-01	2001-02
Timber	5766	4731	4446	4402
Firewood and Charcoal	926	1004	911	818
Eucalyptus Plantations	153	321	97	50
Other Plantations	968	969	1412	1215
Bamboo	387	196	419	298
Sandalwood	597	260	165	119
Minor Forest Produce	338	403	342	287
Receipts from Sanctuaries	97	132	224	254
Interest on belated payment of Govt. Dues	30	24	20	34
Fines and Forfeiture$	93	89	97	91
Receipts from Compensatory Plantations**	368	355	815	1133
Miscellaneous Receipts	1021	981	1813	1323
Refund of revenue	(58)	(16)	(13)	(15)
TOTAL	10,686	9,448	10,748	10,010

Notes: $: Including for contract violation.
** : Earmarked for spending on new forests: Not part of budgeted revenue. Per a Supreme Court judgement this goes to the Centre and is returned via the Ministry of Environment and Forests.
Source: Das-Gupta (2004a) based on data from Government of Karnataka, Department of Forests

In the process of (a) extraction of timber, (b) transporting it to depots for auction, and (c) preparation for auction, and possibly in (d) the timing of auctions and in (e) auction procedure there is thought to be scope for improving accountability via a system of random checks and improved, computerised, records of different stages in the process beside, possibly, revamped auction procedures.[76]

Given ecological concerns and also large tribal populations living and relying economically on forests, conservation, exploitation and reforestation activities in tribal forest areas are through Joint Forest Management (JFM) programmes by Forest Departments and special tribal or village committees in some states.[77] Though JFM was instituted over a decade ago, studies evaluating its success or lack of it, particularly studies with a revenue focus, are not available. As a result the success or otherwise of participative and decentralised governance in this sector is still open to verification.[78]

Besides forest produce, receipts from "eco-tourism" and wildlife sanctuaries are an area with additional revenue potential. Given private sector expertise in the area, outsourcing may be the most efficient option, with government oversight to ensure no environmental and natural resource abuse. However, in some states, hurdles need to be overcome for this. First, private sector commercial activity can violate the Forest Conservation Act and second, state governments have to find a way to credibly commit to not renege on outsourcing contracts (see Box 1). A study of the many existing private or joint sector eco-tourism and wilderness operations in various states needs to be carried out to shed further light on the issue.

Box 1: Problems with the Forest Resort at Murukkal under Taj Hotels Management[79]

In response to a 1989 tender by the Forest Department, the Taj Group entered into a contract with the Government of Karnataka to construct and operate a forest resort at Murukkal.[80] At the time of signing the contract, the government assured the Group that necessary approvals would be obtained from the Centre, given possible contravention of the Forest Conservation Act and given that the resort was located on tribal land..

[76] See the Report of the Karnataka Revenue Reforms Commission (2003).
[77] The Financial Express (2004) reports that Madhya Pradesh had 14,173 JFM committees in March 2004.
[78] For a description and by and large negative assessment of JFM (locally called Joint Forest Planning and Management) in Karnataka, see Gokhale (2004).
[79] Information here is from discussion with Ms Pep Kumar, General Manager and Mr Mohan, Financial Controller, Taj West End, Bangalore.
[80] There were 2 bidders and a "second price" bid selection criterion was used after pre-qualification.

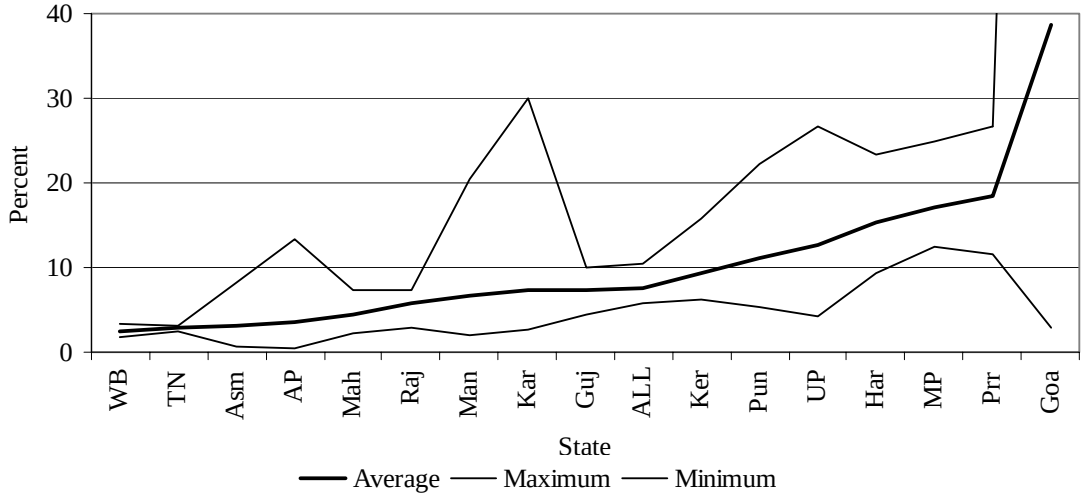
According to the contract, the resort would be constructed and operated for a period of 18 years. The government would be paid a lease fee of Rs 13.5 lakh in the first year increasing to Rs 16.5 lakh after the resort was operational. In addition, a security deposit of Rs 5 lakh was given to the government. There was also a provision for revenue sharing with the Karnataka government. The contract required the group to adhere to prescribed environmental norms, provision and pricing of a designated number of rooms at existing rates, including for government servants on tour duties and tribal development. Subsequently, the group invested around Rs 8 crore, mainly in civil works.

A public interest litigation was filed in the Karnataka High Court by an NGO due to the resort being on tribal land and therefore in violation of section 2(c) of the Forest Conservation Act. In accordance with the judgement of the High Court, the project was terminated in 1996. No compensation was paid by the Karnataka government to the Taj Group. This has made the Taj Group wary of further public-private ventures. Group executives feel that Karnataka officials only pay lip service to this concept.

iii) Irrigation and water resources

That water resources are becoming increasingly scarce is much commented on in national debate. Proper pricing and management of water, besides permitting cost recovery for water supply can also ensure that water is conserved. The literature on irrigation in India is replete with evidence of inefficient water use in agriculture due to inappropriate pricing, for example by cultivation of water intensive crops in arid zones.[81] Evidence of wasteful industrial use of water due to pricing below marginal cost is in Kumar (2004). He finds that water demand is price elastic, so that proper pricing should lead to significant conservation gains. Water management and (effective) pricing inadequacies are reflected in poor cost recovery besides misuse.

Figure 11: Revenue as a % of Revenue Expenditure
Major and Medium Irrigation, 1995-95 to 2001-02



Data Source: Reserve Bank of India obtained from NIPFP.

Irrigation cost recovery estimates for 1995-95 in Srivastava and Sen are 3.83 percent at the Centre and 4.34 percent at the state level. Their discussion does not clarify if receipts and expenditures are taken gross or net of contra entries. The wide variation (from 3 percent in West Bengal to around 38 percent in Goa) in cost recovery across states during 1995-96 to 2001-03 is shown in Figure 11. However, data used the graph is gross of contra entries.

Overall, India's water management and irrigation policies are capable of improvement, perhaps by drawing lessons from international experience. Thus Shah, Giordano and Wang (2004) point to rigidities in India's National Water Policy and instances of lack of cooperation by states in retarding water management performance in contrast with Mexico. On the other hand, Shah and Scott (2004) point to well planned local incentives as an important determinant of better cost recovery in China.

[81] For example see Chapter 5 by Raju and Amarnath in Rao (2003) and references cited there.

Suggestions made by experts for integrated institutional structures for water management to promote efficient use and conservation are reviewed below.

Major and medium irrigation

In rural and agricultural water use in India, cost recovery in irrigation has been a major problem. Important reasons include political problems related to cost recovery from farmers, especially in years of poor agricultural performance, poor water delivery management by irrigation departments, poor state of maintenance of irrigation works, inaccuracy of published technical data on these works and allegedly widespread corruption in Irrigation Departments, particularly in the case of new irrigation projects.[82] An additional problem is infrequent revision of water rates in most states due to their political sensitivity. Nevertheless, cost recovery performance, for example in Maharashtra, has shown recent improvement due to increased frequency of revision of water rates and possibly improved, participatory, institutions for revenue collection and water management.

The Vaidyanathan Commission (1992)[83] recommended that irrigation water charges should meet part of capital costs in addition to O&M expenditure. However, recoverable expenditure should be based on norms: Inefficiencies in capital and O&M expenditure should not be reflected in water rates. Since around 80 percent of O&M expenditure consists of staff related costs, and since there is surplus staff, particularly, non-technical and ministerial staff, this suggests that full recovery of O&M expenditure must await institutional and staffing improvements in irrigation. For the present, a rate of Rs 450 per irrigated hectare was suggested as a norm by the Commission.

Additional inefficiencies arise in water delivery facilitated by inadequate performance measurement. Unreliable water delivery, and being unable to adhere to pre-announced water release schedules are a principle source of inefficiency. This has led to a proliferation of ground water wells even in command areas of major irrigation projects. Evidence also suggests that unreliable water supply greatly reduces the willingness to pay for water by farmers, particularly since water assessment does not always reflect actual water supplied in the absence of volumetric pricing. Studies suggest that willingness to pay would be up to 5 times higher with an assured supply of water in accordance with release schedules. This is particularly true for "tail-enders" in parts of command areas of irrigation works that are far from main canals and regulation points. Reform suggestions for improved physical performance measurement in irrigation are in Box 2.

Box 2. Measuring Physical Performance in Irrigation[84]

The current stress on area irrigated does not reflect (a) the intensity of irrigation nor the extent of water misuse due to mal-distribution of water in a command area. This can be remedied by introducing a system of 4 performance measures.

1. Area irrigated.
2. Number of irrigations for each crop in a season as a percentage of designed number of irrigations. (measures intensity). The summary indicator is the average percentage deviation for all crops.
3. Average delay in water release relative to scheduled release.
4. Cropping pattern: Percentage deviation of acreage under different crops from the designed acreage expressed as a percentage of the designed area under different crops (measures misuse/inefficiency). Summary measure: average across all crops.

Year to year improvement in all four indicators, rather than only the first, reflect improved performance.

Besides inefficiencies, a major problem exists in that, due to construction problems, many irrigation canals are unable to supply water volumes as per their rated capacity. This can only be remedied by independent reassessment of irrigation capacities. Given the reality of extensive ground water capacity in command areas, a "conjunctive reassessment" is needed which takes into account both ground water and irrigation capacity in designing rehabilitation projects.[85]

Unambiguously beneficial institutional reforms to improve irrigation management and cost recovery are yet to be identified though a persuasive proposal is reviewed below. Recent institutional reform in

[82] A now classic study is that of Wade (1982).
[83] Government of India (1992).
[84] The indicators given here are due to Professor K.V. Raju.
[85] See, for example, Ranade and Kumar (2004) and also Talati and Shah (2004).

Maharashtra, Andhra Pradesh and now Karnataka, by transferring farmer level water release and assessment from the Irrigation Department to local Water Users Associations (WUAs) has belied hopes of efficient management, except possibly in parts of Maharashtra.[86] In other states (e.g. Punjab), where self-rationing by communities through "warabandi" arrangements is in vogue, success has also been mixed. In the medium term, outsourcing of irrigation management and water supply, possibly to local government, community groups or NGOs seems to offer the best hope for improvement. This will eventually permit reduction in Irrigation Department manpower, since engineers to manage water release will become redundant, and so further improve cost recovery by reducing recoverable costs. Irrigation Departments can then concentrate on capital works and providing technical "consultancy" to WUAs for O&M in command areas. Furthermore, service delivery by Irrigation Departments, currently not geared to service provision will likely improve.

A less attractive alternative is to improve the accuracy of water assessment for bulk release over time, by gradually moving to volumetric assessment. This, combined with a scheme of assessment and collection incentives for Irrigation Department inspectors, could reduce collections arrears.

An interesting institutional proposal for the management of water from the Sardar Sarovar Project in Gujarat has been made by Talati and Shah (2004) using Chinese institutions as a model. Given the vast experience of the authors, the proposal is worth recounting. In this framework, water is released through publicly constructed major canals into medium sized local reservoirs. Local communities are required to pay in advance for water released from these reservoirs into local channels which it is the responsibility of local communities (or water users' associations) to construct. Pricing of water released is on a volumetric basis. By building in an allowance for seepage loss, minimum water charges required to be recovered by engineers amount to around 75 percent of the value of water released. This puts in place an "incentive" system whereby engineers can receive up to around 35 percent of their normal salary directly from water users for efficient and timely water releases. Under an alternative model, without "institutionalised bribes", sub-contracting water release at the local reservoir level to franchisees chosen through open tendering is proposed by them. However, the proposal does not address incentives of Command Area managers of water releases into major canals and at the dam.

Minor irrigation

The discussion above has only covered major and medium irrigation projects. Government involvement and expenditure is much smaller though not insignificant in minor irrigation works like tanks, check dams and other water storage arrangements, especially in arid and semi-arid areas (Sakthivadivel, et. al, 2004). Furthermore, though expenditures are only about 10 percent of that in major and medium irrigation, cost recovery in minor of irrigation is only about a third the level in major and medium irrigation. Clearly local management of minor irrigation works is needed to improve both management efficiency and cost recovery. A detailed discussion is not attempted here.[87]

iv) Roads

Roads and bridges are excludible and congestible public goods. The large capital outlays required for their construction and their significant external effects, both positive and negative, make private provision likely to result in undersupply. It should be noted that in most developing countries there is undersupply even with public provision. Furthermore, if freedom of movement within a country is seen as a basic right, then roads also have pure merit good features. Consequently, as in most countries, government provision is seen as appropriate in India. Nevertheless, as discussed below, for supply of road related goods and services, different methods of private sector involvement are feasible and widely used.

Current road sector financing: World Bank (2003) estimates that only 51 percent of total road related revenue collections of all levels of government in India goes towards road expenditure. However road user charges (motor vehicle tax and fuel cess) amount to 90% of road sector expenditure and around 300% of maintenance expenditure. Furthermore, notional user charges of cars and buses cover total attributable road sector cost, while user charges for all vehicles cover attributable cost except in the case of heavy commercial vehicles, where there is a small shortfall. Nevertheless, to improve India's road network to middle income country standards and provide connectivity to remote villages, a much

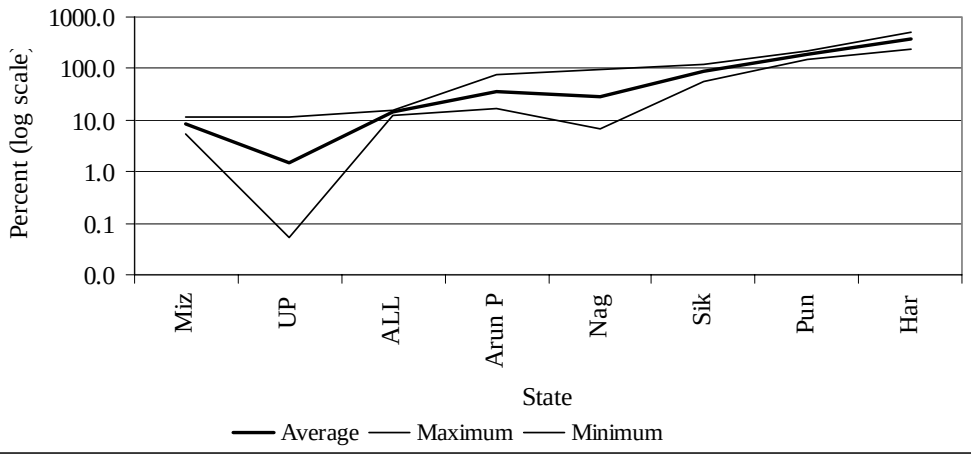
[86] See for example Talati and Shah (2004).

[87] For a detailed discussion of successful institutional arrangements of irrigation tanks based on a study of 41 tanks in 8 states, see Sakthivadivel, et. al. (2004).

larger outlay on both construction of new roads and maintenance of existing roads is required. Consequently, a further increase in direct road sector cost recovery and indirect user charges to finance additional road sector expenditure will aid development, besides helping to reduce fiscal pressure.

On the other hand, Srivastava and Sen (1991) estimate cost recovery in the road sector in 1994-95 at 2.87 percent from Central expenditure and 2.28 percent from state level expenditure. These estimates only cover direct non-tax revenue from the sector. The wide variation in road sector revenue as a percentage of revenue expenditure, in 7 states for which data were available, is documented in Table 12. Recovery rates so measured, vary between around 10 percent to around 300 percent! More detailed examination is needed to identify the reasons behind the superior recovery performance of states like Haryana and Punjab.

Figure 12: Revenue as a % of Revenue Expenditure
Roads and Bridges, 1993-94 to 2001-02



Data Source: Reserve Bank of India obtained from NIPFP.

Roads and bridges are classified into 5 categories. The PWD in states is responsible for national and state highways and major district roads. Finance for national highways is from the Centre. Different departments construct and maintain other district roads and village roads. For example, they are the responsibility of the Rural Development and Panchayat Raj Department in Karnataka.

Institutional reform for road financing holds out promise for improved cost efficiency. For example, in Karnataka current state highway and major district road maintenance is on a 3 year cycle and contracts are awarded by open competitive tenders. However, payment in the first year amounts to 85 percent of the contract value while the security plus earnest money deposited by contractors amounts only to 7.5 percent of the contract value. So there is little in-built protection of government funds in case of contract breach. Only 15 percent of the contract amount is held for payment till the end of the contract period. Furthermore, though contracts provide for the PWD to undertake maintenance work not done by contractors and charges them at a penal rate of double the cost, this clause is seldom invoked (there were only 2 or 3 cases in 2002-03). In 2003 the PWD moved from contracts for routine maintenance of selected road sections in relatively good repair (technically, roads with a "CBR" above 6), to maintenance and rehabilitation of entire roads. Clearly, decreasing the extent of frontloading in maintenance contract payments to, say, 50 percent can improve cost efficiency and reduce default risk. Furthermore, improved, norm based, financial road maintenance planning and improved contract terms for road contractors by are also possible.[88]

Additional road sector financing options: Besides reformed maintenance cycles and contracts, a road cess, increased use of tolls, and better utilisation of government land in the right-of-way of major roads can help improve road sector finances. World Bank (2002) suggests further strengthening of the Central Road Fund and possibly setting up State Road Funds, partly financed by an additional cess

[88] For example, assistance for contract design, including guarantee clauses and technical specifications, is available from the World Bank, drawing on existing templates.

on fuel.[89] This is the major method of increasing road sector funding. Greater use of capital markets to raise finances for the road sector is also envisaged. A full road fund proposal is, it is understood, currently under preparation.

Tolls cannot be expected to contribute to full recovery of upgrading and maintenance expenditure. Nevertheless the practice of tolling only to recover capital costs of bridges in some states can be amended (on selected roads) to also make possible partial recovery of O&M expenditure. Second, cordon tolls (for central business districts and commercial areas) and new or enhanced parking fees can be introduced in major cities. The practice in some states of tender based out-sourcing of toll and parking fee collection is likely to be superior to direct government operation, but this need empirical verification. Given the limited recovery possibility from road tolls, private sector Build-Own-Operate arrangements cannot be self-financing, though outsourced road construction and operation contracts with government subsidy is a feasible option, as illustrated by the ongoing Bhopal-Indore expressway project.

Some other measures to improve cost recovery include (1) leasing out of prime roadside land in selected areas, (2) instituting charging for utility lines laid in the right-of-way of identified roads, (3) levying service charges on large bridges and (4) developing bypasses as shopping plazas[90] For the latter two activities, outsourcing to the private sector is a feasible option.

v) Housing and public buildings

Housing is perceived to be an important merit good. Furthermore, provision of housing to the poor is seen as an important redistributive activity. Consequently many state governments have expenditure programmes for house construction, and yet others for subsidised housing provision. Nevertheless, a large part of housing supplied by the government is at subsidised rates to government servants, surely a non-merit category.[91] The prime cause of this is administered price and budgetary accounting distortions in government supply: To keep wage bills and the measured deficit down, governments find it cheaper, in cash flow terms, to supply housing they own to government servants. This results in non-tax revenue receipts which goes to defray some portion of maintenance expenditure. The upshot is a measured surplus or a small net cash outlay on government housing. That the government incurs a huge subsidy cost when the services are valued at market prices is not reflected in government accounts. Sen and Srivastava estimate 1994-95 cost recovery rates of 14.1 percent for the Centre and 6.7 percent for states, for all government housing. This is likely to be an underestimate since they do not use market prices or rentals in their subsidy estimates.

Besides housing, budgetary distortions also make it "cheaper" for governments to own and use their own office buildings and also public institutional buildings (such as hostels and auditoria). Third, most state governments own and operate inspection bungalows, rest houses and "circuit" houses for their staff and, if not occupied by government servants, the general public. Pricing of these facilities is again dictated by budgetary distortions: To keep measured expenditure down, travelling and daily allowances for government servants on tour are below what would be needed to pay for private board and lodging. This leads to minimal prices being set for inspection bungalows.

For social housing, there are limited options to improve cost recovery, aside from institutional reform of bureaucracy to improve performance (as in Table 18 above). Likewise, without budgetary reform, little can be done in the short term to improve cost recovery from facilities utilised by the government or government servants, with the exception of performance oriented institutional reform.

However, improved cost recovery and even surplus resource generation from inspection bungalows and generous grounds attached to most inspection bungalows can feasibly be implemented immediately. For example, to the extent that these buildings or attached grounds are commercially exploitable, they can be competitively tendered out on a BOT basis to private parties with (a) permission to expand them, and (b), a stipulation to preserve the status quo for government servants, by reserving the currently existing number of rooms for government at existing rates. Such a scheme

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[89] Gwilliam and Shalizi (1999), examine the desirability of dedicated road finds but managed by independent boards of user representatives as advocated by road sector professionals but generally thought to be undesirable by public economists. They suggest that the desirability of interim road finds, pending improved public expenditure management systems, cannot be assessed using basic principles but must be looked at case by case.

[90] These are taken from the Medium Term Fiscal Framework of the Karnataka PWD.

[91] Srivastava and Sen (1997), however, classify all housing as non-merit goods.

can be worked out with input from reputed private and public sector hospitality firms.[92] For these and other inspection bungalows with excess commercially exploitable land, land can be leased out for commercial or agricultural use, or even sold.

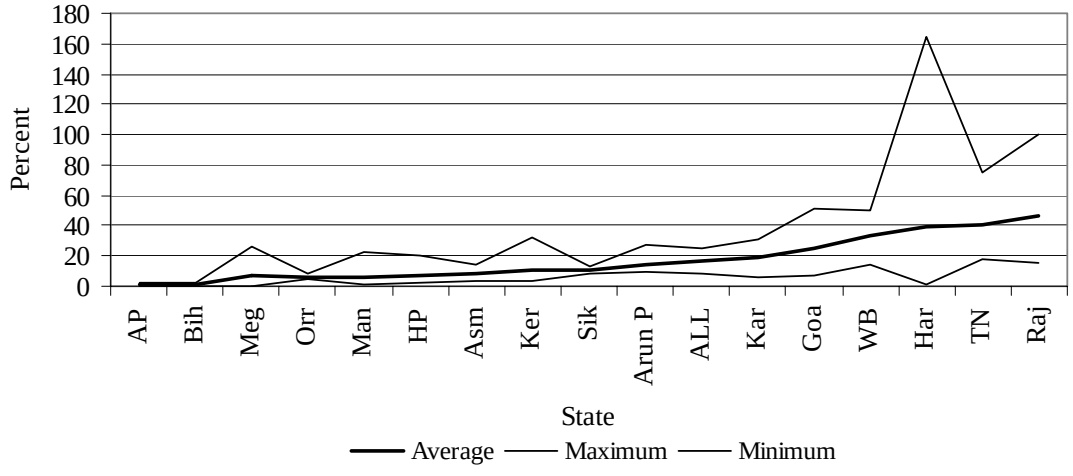
Second, several inspection bungalows in remote areas are a legacy of earlier days when only slow animal transport was available and roads poorer than today. Consequently, there are likely to be many unviable and under-utilised rest-houses which merely act as a drain on the government budget. This is likely to be the case for most inspection bungalows outside of district headquarters and major towns. Cost saving and better recovery rates can result by closing such inspection bungalows and selling or leasing out these assets.

vi) Tourism and heritage sites

Promotion of tourism, both domestic and international, is an activity engaged in by both the Centre as well as many state governments. This is done via running hotels and other tourist facilities and by maintaining tourist information infrastructure. While tourist facilities can be considered private goods, tourist information is partly non-excludible and non-rival in character and so has a partial public goods rationale. However, since tourist information is often jointly consumed with tourist services, private sector supply incentives exist. The major rationale for provision of these services is to promote local industry and employment and for earning foreign exchange. Therefore, to the extent that public provision exists, it should be expected to be a profit making activity with better than 100 percent cost recovery.

Nevertheless, as Figure 13 shows, 100 percent cost recovery has been achieved by no state having tourism revenue between 1992-93 and 2001-02 except in some years in Haryana. In fact, on average, cost recovery, and that too only of revenue expenditure, averages around 20 percent of expenditure. Clearly, improved cost recovery performance from tourism should be expected. The case for this is strengthened by the significant monopoly power that governments have over desirable tourist locales. For example, the proliferation of star hotels in Goa's beach belt is hard to reconcile with the 30 percent cost recovery performance for tourist related activities in the state (Table 13). Pricing of access licences and permissions, as also civic services in these areas, to improve cost recovery needs to be looked into. No study has been found which examines reasons for this poor cost recovery performance in different states. Without such a study, it is difficult to suggest measures to improve of cost recovery or to assess the scale of tourist promotion activities.

Figure 13: Revenue as a Percentage of Revenue Expenditure
Tourism: 1993-94 to 2001-02



Data Source: Reserve Bank of India obtained from NIPFP.

[92] Informal consultations with senior executives of two reputed private sector firms in the hospitality sector suggest that such a scheme would be welcome, provided adequate guarantees were available that negotiated contracts would not be arbitrarily modified or terminated.

The Karnataka Revenue Reforms Committee (2003) points to immense additional potential from tourism revenue, particularly in the fast emerging areas of eco-tourism and medical tourism and makes detailed suggestions to garner additional revenue in Karnataka. Once again, an examination of additional tourism revenue potential in different states is needed.

A second, related, activity is preservation and commercial exploitation of heritage sites, given India's rich historical and natural heritage. Preservation of India's heritage is clearly a public good, albeit one which cannot be considered to be a government priority. While no detailed data on cost recovery is available, anecdotal evidence suggests that preservation of heritage is under-funded. Furthermore, admission fees charges by governments to heritage sites are usually set below costs. By suitable tourist promotion activities and appropriate revision of user charges, improved cost recovery from heritage sites is clearly possible.

vii) Husbandry

Husbandry services provided by state governments cover an array of services including animal and crop husbandry and extension services, seed farms, pisciculture, fish rearing and marketing and the like. Most of these services, though largely private goods, have a poverty alleviation and agricultural development rationale, given lack of access and information prevalent in most of rural India. Nevertheless, given their private goods status as also the government's largely monopolistic position these services can be expected to be priced close to cost, especially via the adoption of strategies such as two part tariffs consisting of access charges related to indicators of farm or fishery assets (such as land or livestock owned or fishery related assets). As a result, the poor cost recovery performance documents in Table 22, is clear indication of scope for improvement.[93] While this paper has no detailed information of these sectors, a study to devise a strategy to improve husbandry cost recovery is needed.

Table 22: Revenue as a Percentage of Revenue Expenditure in Husbandry Services 1993-94 to 2001-02: Average for 27 states

YEAR	Crop Husbandry	Animal Husbandry	Fisheries
1985-86	9.28	5.88	20.93
1989-90	8.77	4.58	12.41
1993-94	5.46	3.90	12.15
1994-95	5.79	3.85	12.82
1995-96	5.88	3.73	10.76
1996-97	5.29	3.87	11.59
1997-98	6.06	4.06	12.39
1998-99	4.69	3.33	10.75
1999-00	4.33	3.40	10.05
2000-01	6.58	4.00	16.55
2001-02	6.45	3.10	11.26

Source: Reserve Bank of India data obtained from NIPFP.

viii) Health

Preventative health care and public health services have benefits that are largely non-excludible and non-rival, giving them public goods characteristics which make finance largely by taxes optimal.[94] On the other hand, curative health care has external benefits, though these are more limited. It also facilitates poverty alleviation and is sometimes considered a merit good, particularly in relation to maternal and child health services and in connection with the widespread incidence of AIDS. Two sided asymmetric information makes markets for health care highly imperfect. A review of differences between health care markets and competitive markets is in Table 23.

Table 23: Competitive Markets Versus Medical Markets

Competitive Markets	Medical Markets
Many small sellers	Few hospitals and health centres; mixture of hospitals and private practice.

[93] Comparing different states, there is limited variation in cost recovery from animal and crop husbandry, but wide variation in fisheries: recovery in 2001-02 ranged from under 1 percent in Meghalaya to 100 percent in Rajasthan and Tamil Nadu.

[94] It is possible that out-sourcing may be more efficient than direct government provision in some cases. This issue is beyond my competence.

Profit-maximizing firms	Prevalence of not-for-profit hospitals - hospitals may maximize quality of health care rather than be cost efficient
Homogenous good and well-informed buyers	Heterogeneous good and poorly informed buyers - difficult to judge the quality of doctors: quality judged by price; importance of reputation - price and quality comparisons difficult - doctors usually choose hospitals or laboratories for the patient - many doctors are specialists and must co-operate to provide health care - may lead to collusion - consumers cannot judge the need for treatments prescribed - danger of overmedication to increase doctors earnings - malpractice litigation - leads doctors to protect their own safety rather than only prescribe what is best for the patient - malpractice insurance raises medical costs
Direct payments by buyers	Patients bear only part of the cost due to health insurance - insurance companies may not be able to monitor the need for different types of treatment in hospitals - danger of over billing - moral hazard: individuals may demand more medical care than if they had to bear the entire cost - adverse selection: if premiums reflect average medical bills per person insured, healthier persons will find medical insurance to expensive and will drive up the cost of health insurance
	Source: Based on Stiglitz, (2000).

Different countries have experimented with various institutional options but no fully satisfactory institutional mechanism for curative health services has yet been identified.[95] Consequently, the discussion here simply attempts to identify possible methods for improved cost recovery for government provided curative health services without attempting to assess different institutional options or optimal funding schemes.[96] It should nevertheless be pointed that rising longevity has lead to rising health care expenditures all over the world, which has made proper institutional design an increasingly important issue.

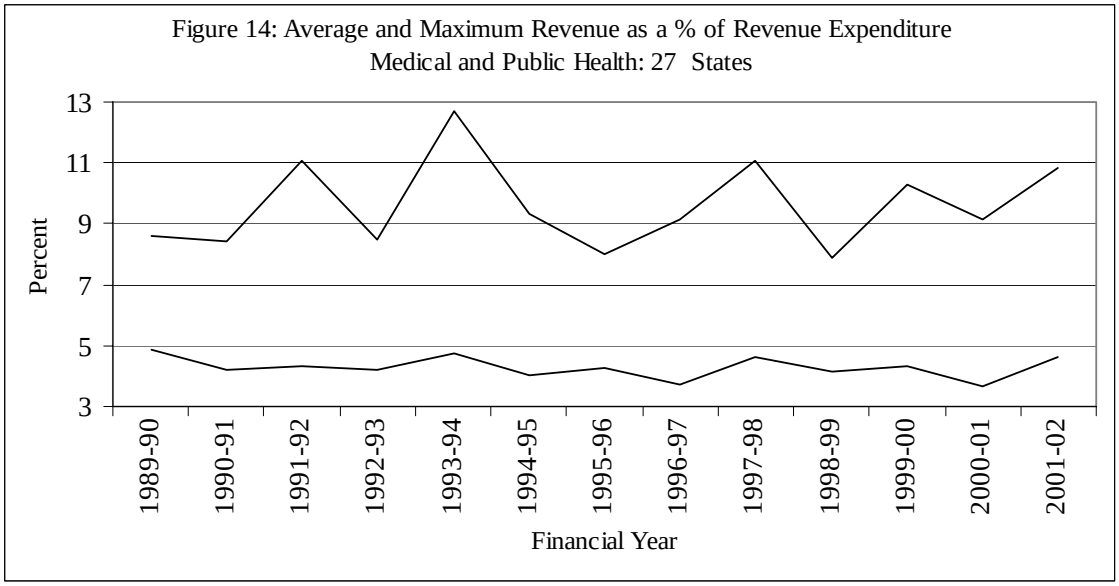
In financing of curative health care services, a major role is played by health insurance in several countries. While insurance schemes exist in India through (a) the Employee State Insurance Corporation (ESIC) for government servants, (b) the General Insurance Corporation (GIC) and private sector insurance providers via the Mediclaim scheme for those opting for it and (c) some NGOs for community health services, the extent of insurance coverage is limited. Except for Mediclaim, other schemes only provide medical services in their own facilities with very limited reimbursal (by the ESIC) of expenses on treatment in other approved hospitals. Full insurance funding has its limitations due to moral hazard and adverse selection problems faced by insurers (Table 23). Nevertheless, a policy statement as to the extent of health insurance coverage deemed socially desirable for different groups is needed and steps taken to devise a scheme to implement this policy using both public and private insurance providers.[97]

Information on the causes of low cost recovery performance in states is not available for this study, Figure 14 shows that cost recovery (measured by revenue as a proportion of revenue expenditure) has remained at around 4 percent since 1989-90 and has not exceeded 12 percent in any year in any of the 27 Indian states covered in the data.

[95] For a discussion of private provision in the context of South Asia, see Basu (2003).

[96] Sepehiri and Chernomas (2001) review user charge principles and practices in 7 developing countries in health care. The conclude that high price sensitivity of the poor to health care services combined with ineffective targetting greatly limit equity benefits from user charge finance. This emphasises the importance of effective targeting mechanisms in health care services. For recent empirical studies of the quality of health care in India: See Banerjee, Deaton and Duflo (2004) and Das and Hammer (2004). Overall econometric assessment of health service efficiency is in Sankar and Kathuria (2004).

[97] For further discussion of health insurance in India, including discussion of health insurance benefits to the poor, see the series of articles on the issue in the **Economic and Political Weekly**, July 10, 2004.



Data Source: Reserve Bank of India obtained from NIPFP.

A recent survey in Karnataka found that 89 percent of households were willing to pay for medical services at government hospitals if these were between 25 percent to 50 percent of the rates charged in private hospitals.[98] However user dissatisfaction with the quality of hospital services in government hospitals was also reported. In government hospitals, it was found that besides below cost pricing or free medical services, there is ineffective control over the quality and timeliness of these services and no formal patient feedback about the quality of care received.[99] However, there is price discrimination for hospital services with below poverty line (BPL) patients usually being provided free services. This discrimination is not effectively targeted as current procedures to verify BPL status are generally ineffective and need to be strengthened, with, possibly, assistance being provided by district administrations.

In general, hospital cost accounting and budgeting procedures also need strengthening as pointed out by the Karnataka Revenue Reforms Committee (2003). Hospital budgets for maintenance and replacement of facilities and equipment are usually decided annually and not in accordance with medium term plans.

Possibilities for strengthening hospital cost recovery and resource generation include:

1. Adjunct facilities in which services are priced close to prices in private hospitals, along with quality discrimination (in terms of bundled goods but excluding doctor, nursing and lab services), for both out-patient and in-patient care, possibly involving the private sector may be instituted along with free or low priced services. A pre-condition is that superior services prices should enable recovery of more than marginal costs so as to cross-subsidise services to target (BPL) groups.

2. Introducing "value added services" like executive health check-ups and special clinics for diabetes, cardiac and selected other conditions.

3. Permitting doctors to privately practice in the hospital premises after hospital hours on a commission basis to help government hospitals retain qualified doctors and improve internal resource generation.

4. Permitting hospital doctors to receive a part of the fee from paying patients can also help government hospitals to retain qualified doctors.

5. To improve targeting of free or low priced medical services, means testing can be improved. One possibility, drawing on the theory of enforcement of self-assessed taxes, is self-certification by patients together with selective cum random follow up by district officials on

[98] See Karnataka Revenue Reforms Commission (2003).
[99] Karnataka Revenue Reforms Commission (2003). See also Sepehiri and Chernomas (2001).

the basis of cases sent to districts by hospitals. Penalties could be levied on a few widely publicised cases of detected fraud.

To illustrate possibilities of improved cost recovery by adopting reform measures suggested, a case study of current operations of a state level referral hospital is now presented.

Case Study: Victoria Hospital, Bangalore, December, 2003.

Victoria Hospital is situated in a multi-facility complex which also includes the Vani Vilas Hospital, the Minto Ophthalmic Hospital and the Bangalore Medical College. The latter includes the Bowring and Lady Curzon hospitals and also the Rajiv Gandhi Institute of Chest Diseases in a separate location, 6 km away. Educational facilities include, besides Bangalore Medical College, dental, nursing and physiotherapy colleges(awarding bachelors and masters degrees and a school of nursing (awarding diplomas). All degrees and diplomas are awarded by the recently established Rajiv Gandhi Institute of Health Sciences. Each of the facilities is separately administered by a Superintendent or Principal. While the Minto Hospital is semi-autonomous and partly funded by the Centre, other facilities are under the Department of Medical Education of the Karnataka Government.

Departments at the Victoria Hospital include general medicine, general surgery, dermatology, ear-nose-throat and burns, nephrology, neurology, neurosurgery, nuclear medicine, orthopaedics, plastic surgery, psychiatry, radiology, radiotherapy, surgical gastroenterology. Other hospitals in the complex include obstetrics, gynaecology, paediatrics and paediatric surgery (Vani Vilas), and ophthalmology.

The hospital has a staff of 105 staff doctors, 267 staff nurses, and 314 other staff, including non-technical and ministerial staff. Around 30 nursing posts and 127 other posts are vacant and not planned to be filled, leading to perceived staff shortage. Temporary staff includes 90 research students or residents with MBBS degrees who assist in patient care and 14 radio technicians. In addition, medical waste disposal, security and cleaning services are outsourced to contractors.

Doctors are allowed to engage in private practice in up to two nursing homes outside hospital premises and outside of hospital duty hours. The hospital administration acknowledges that some abuse of these restrictions occurs.

Residential accommodation is provided for around 20 percent of staff nurses, around 10 percent of "Group D" staff and for one Resident Medical Officer.

The hospital has 754 beds sanctioned and funded by the hospital budget and a further 200 beds that are not fully supported. Services are provided free of charge to below poverty line (BPL) patients. Part of their costs are defrayed from the hospital's share of interest earnings on a corpus of about Rs 100 crore in the (Karnataka) Chief Minister's Medical Relief Fund. However, the schedule of fees introduced in 2000-01 (Table 24) suggests that services are not priced to recover costs even from non-BPL patients.

Table 24: User Charges and Services Provided in Victoria Hospital, 2003-04

Item	Fee (Rs)	Services Covered/Remarks
Registration Fee	10	Can be waived by Casualty Medical Officer
Admission to General Ward	20	Food, Linen, Medicine, Nursing, Doctor's services
Semi-Private Room	150/day	Food, Linen, Medicine, Nursing, Doctor's services
Private Room	300/day	Food, Linen, Medicine, Nursing, Doctor's services
Lab Investigations	Per Schedule	
Medical Certificates	200	

Note: Services and lab investigations are free for Below Poverty Line (BPL) patients.
Source: Das-Gupta (2004a) based on data from Superintendent, Victoria Hospital Bangalore

Equipment and facilities include, besides a kitchen, a casualty and emergency room and an out-patient department, 8 operation theatres, 5 old X-Ray machines, 1 cobalt machine for radiotherapy, 1 new gamma camera for nuclear medicine, and a blood bank. Key equipment and facilities not available include Intensive Care and Intensive Cardiac Care units, a CT Scan machine and a MRI facility.[100] An effluent treatment plant is also felt to be needed for medical waste since these cannot be incinerated within city limits. There is no budgeting or planning for maintenance or replacement of

[100] It was reported that no CT Scan machine or MRI facility is available in any Karnataka government hospital, though some are available in private hospitals.

existing capital equipment. However, there exists a Master Plan for further upgrading and expansion of Victoria Hospital. Furthermore, there is no systematic analysis of demand for medicines and drugs relative to availability. Likewise, there is no demand gap analysis for hospital services, though there is a waiting list for operation theatres.

Management of the hospital is by the Hospital Superintendent and office staff. The Superintendent is a qualified medical specialist and also responsible for care of patients within his speciality. He and some other doctors also engage, part time, in teaching at Bangalore Medical College. Financial powers of the Superintendent are limited to sanctioning cash disbursements of no more than Rs 500. Except for "Group D" staff, he has no flexibility in recruitment and hiring decisions. All major decisions have to be referred to the Department of Medical Education for approval.

Besides pay and salaries, no other major area of hospital administration is computerized. Manual systems of record keeping include supplies and stores, and patient records in the Medical Statistics unit. This limits cost control efforts.

In terms of quality and adequacy of care, patient feedback is planned to be introduced in the current year. No system of quality and timeliness indicators exists nor is one planned.

The hospital budget and expenditure, as given in hospital records are summarised in Table 25. The table shows that around 20 percent of expenditures are incurred directly on patients, while around 50 percent consists of salaries and allowances. Expenditure on equipment constitutes under 2 percent of expenses. Wide fluctuations in shares of different items (e.g. in officer's salaries and DA) and in total expenses suggest that these figures may be unreliable.

Table 25: Expenditure Incurred and User Charges in Victoria Hospital, Bangalore, 2000-01 to 2002-03

Head	2000-01	2001-02	2002-03
Total Salary and Allowances (%)	40.18	51.84	51.24
Officer's Salary (%)	10.32	1.67	1.84
Staff Salary (%)	19.57	31.74	29.69
DA and Other Allowances (%)	10.29	18.44	19.71
Establishment Expenses (%)	0.92	0.91	2.42
Utilities (%)	38.17	23.33	25.19
Drugs and Chemicals (%)	14.71	13.68	12.35
Other Expenditure in Patients (%)	4.85	9.03	7.11
Equipment Upgrading and Maintenance (%)	1.17	1.21	1.68
Total Expenses (Rs lakh)	2216.91	1403.00	1601.54
Cost Recovery From User Charges (Rs '000)	3034.39	3632.97	3908.42
Cost Recovery as a % of Expenses	1.37	2.59	2.44

Source: Das-Gupta (2004a) based on data from Superintendent, Victoria Hospital, Bangalore

ix) Education

The discussion in this section concentrates on higher education, with only brief remarks being made about primary and secondary education.

Higher education is a private good with positive external effects of which buyers are poorly informed about product quality. They are also generally poorly informed about returns to investment in education. Furthermore, higher education is a lumpy (human) capital good which is often jointly produced with R&D. On the other hand, primary education is considered to be a public good due to its key role in poverty alleviation and human development.[101] Despite their differing features, the private benefits they confer lead to education at different levels being substitutes, so that public outlays on different levels of education need to be jointly determined. Thus, a theoretical analysis of individual human capital accumulation incentives leads Teles and Andrade (2004) to conclude: "…since government spending on basic education may have a negative effect on agents' incentive to accumulate human capital via higher education, if the government allocates a higher value to basic education in detriment to higher education subsidies, these expenditures may be insignificant with regard to the human capital stock and economic growth. …It thus becomes clear that the composition

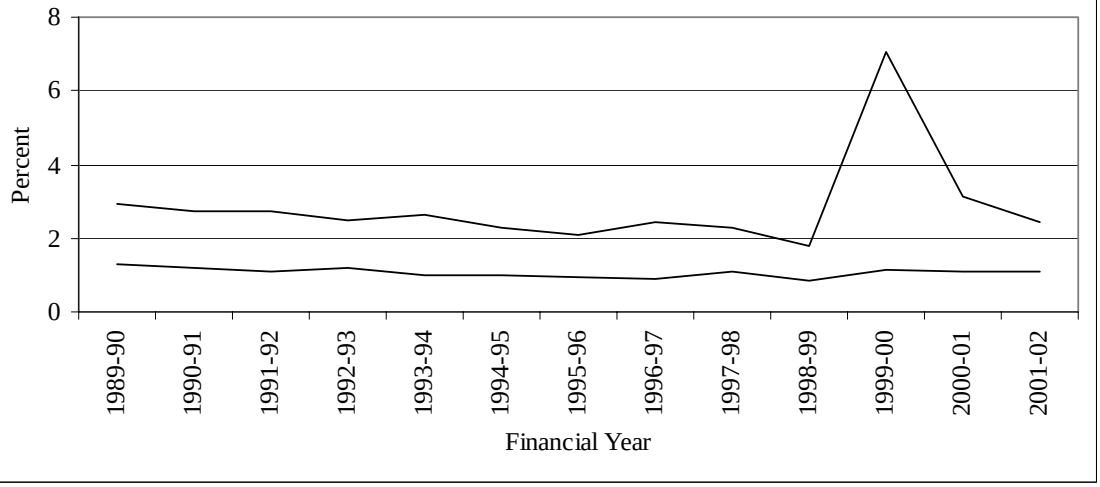
[101] A more detailed discussion of characteristics of education as a good as well as markets for education is in Tilak (2004).

of government spending between basic and higher education is important with regard to the significance of the relation between public spending on education and economic growth."

To confound the picture further, recent econometric analysis of all-India household data covering four National Sample Survey rounds (spanning 1983 to 1999) by Chamarbagwala (2004) suggests that participation by children in primary education is positively influenced by (objectively measured) private return to education, in turn influenced by education quality and employment prospects. This suggests that there may be significant indirect effects on education demand from government spending on, firstly, employment subsidies and second, higher education by way of teacher's training. Clearly, determining "socially optimal" public expense on education is not straightforward.

While cost recovery rates in different levels of education are not available for this study, overall cost recovery rates in the states for a somewhat broader expenditure category are in Figure 15. This shows that recovery rates have averaged somewhat over 1 percent during the 1980s and the 1990s. These are similar to estimates for 1994-95 in Sen and Srivastava (1997). In contrast, Tilak (2000) points to deficiencies in budget data. The chief reason for this is that not all student fees are shown as receipts in state budgets. According to him, compared to estimates of around 2.89 percent for all education and 1.7 percent for higher education during 1987-88 in an earlier study by Rao and Mundle (1992), cost recovery rates derived using alternative and more accurate data were around 10 percent for education as a whole and 20 percent for higher education.[102] It should be pointed out that these figures pertain only to government owned or government supported institutions. Since privately funded education institutions are not reflected in government expenditure or revenue, their finances are not taken into account. On the other hand, governments do not earn revenue from universities, though universities receive public grants, since they retain fees and other income they earn. Overall, therefore, public subsidies to the education sector as a whole are likely to be higher than cost recovery out of government expenditure implies.

Figure 15: Average and Maximum Revenue as a % of Revenue Expenditure
Education, Sports, Art and Culture: 27 States



Data Source: Reserve Bank of India obtained from NIPFP.

Higher Education

In terms of India's public policy toward education, Tilak (2004a) points to the changing and confused nature of the public policy stance in India over even the decade of the 1990s. This is particularly true in the sphere of higher education. According to Tilak, two government committees in the mid 1990s strongly advocated the continuing need for government funding of higher education also suggested the need to strengthen own resource generation through fee hikes, sale of consultancy and other services, introduction of self-supporting courses and increased student loans.[103] He goes on to state

[102] The date source he uses is the annual publication **Education in India** of the Ministry of Human Resource Development. Figures pertain to both Centre and states and not just to the states.

[103] The committees were the for Mobilisation of Resources in Central Universities (Justice K. Punnayya Committee) in 1993 and the AICTE Committee on Technical Education (D. Swaminadhan Committee) in 1994.

that while the government focused on the cost recovery recommendations, actual expenditure on higher education decreased as a proportion of total government expenditure given the macroeconomic need for fiscal compression. More recently, further privatisation of higher education has recently been contemplated, especially in view of a Task Force report in 2000 which recommended full privatisation of higher education and even an act to permit setting up of private universities.[104]

Four categories of higher education institutions need to be distinguished in terms of the optimal burden on government expenditure. These are government colleges, private aided colleges, private unaided colleges and universities and their affiliated colleges. While government colleges are generally fully funded and all cost recoveries go to the general budget, private aided colleges receive grants-in-aid (GIA) for aided courses. For example in Karnataka 50 percent of fees recovered from these courses are required to be transferred to the government. The gross quantum of GIA is generally linked to the salary bill of both teachers and other staff. State governments generally regulate fees, posts and salaries in both government and aided colleges. As mentioned, universities are generally autonomous and receive block grants from the government, though many are also subject to grant ceilings tied to employment levels on a cut-off date. All these types of institutions can exploit currently unexploited sources of finance to meet their expenditures.

Regarding the impact and structure of GIA institutions, there is little justification for continuation of GIA in its current form, since there is no in-built incentive either for maintaining quality or for internal resource generation. For example, "evidence showed that GIA schools and colleges were not necessarily serving the poor at all – with less than 20 percent of students from disadvantaged backgrounds in what appeared to be typical colleges" (Tooley, 2003). On the other hand, "qualitative evidence showed that PUA [Private Unaided] schools and colleges were reaching out to the poorest areas, serving disadvantaged groups where there are not GIA or G[overnment] institutions available." (Tooley, 2003). Tooley (2003) also points to the fact that differences between aided and unaided colleges are gradually disappearing:

> "Courses offered: GIA colleges offer PUA courses that are popular with students, sometimes to the extent of opting-out of GIA status altogether; GIA schools are found that offer (illegal) English medium options, or extend their schools to offer PUA sections;
>
> "Teachers employed: both GIA colleges and schools employ PUA teachers either to fill vacancies and/or to service PUA courses;
>
> "Fees charged: both GIA colleges and schools charge fees (sometimes illegally) that make them increasingly in line with PUA institutions."

An important development in the setting of fees for higher education is the Supreme Court judgement and resulting guidelines in the Islamic Academy of Education case of August 14, 2003 (WP Civil, No 350 of 1993). Guidelines mandate government committees to make recommendations for the setting of fees linked to cost recovery. Even so, full recovery of costs from fees is not a practical alternative in the short run, since cost recovery would, for example, entail about a 20-fold increase in fees in Karnataka.[105]

In addition, there are mandatory institutions to determine fees in technical education. For example, in Karnataka, price discrimination and quantity regulation in admissions for professional education are covered by the Committee of Experts to Draft Legislation on Admissions to the Professional Colleges in Karnataka ("Fee Regulatory Commission"), Interim Report, who has kept in view the Supreme Court judgement and resulting guidelines in the Unnikrishnan case (SCC 645, 1993) and the Judgement in the Islamic Academy of Education case of August 14, 2003 (WP Civil, No 350 of 1993).

Besides fee setting, a second vital issue is the extent to which increased bank loans will permit higher fees to be levied without excluding students from disadvantaged backgrounds. Current loan schemes are not utilised much by students and require 100% collateral above a threshold (of Rs 4 lakh).[106] A similar scheme, even with larger loans, may be acceptable to private banks but would require a government guarantee of a proportion of loans that are not supported by collateral.[107] Note that, even with poor loan recovery, government cost recovery from higher education can improve relative to the

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[104] This was the Prime Minister's Task Force on Education (Ambani-Birla Committee). See Tilak (2004a).
[105] See Government of Karnataka, 2003a.
[106] See Narayana (forthcoming).
[107] This is based on informal discussion with Professor V. Raghunath, President, ING Vysya Bank.

current situation while continuing to provide support for higher education. This is because, firstly, current outlays are converted to future outlays, and secondly, even some proportion of loan recovery helps to reduce education sector expenditure given the limited extent to which fees can be used to recover costs. Nevertheless, improved mechanisms for loan recovery can be devised which utilise existing government machinery. For example, defaults could be recoverable as arrears of land revenue or, if agreement with the Government of India can be reached, through the Income Tax Department: This is similar to procedures for recovery of student loans used in Canada

Other measures which could improve cost recovery are:[108]

1. Government institutions could introduce a quota of paying seats priced reasonably close to private institutes having regard for differences in service levels.

2. Cross subsidy by raising fees of popular courses such as management and computer skills in both government and private aided colleges can be considered, with fees being demand determined rather than regulated.

3. Private aided institutions (including societies and universities) could have continuation of a portion of grants-in-aid linked to implementation of measures to harness additional revenue, in accordance with an action plan they are required to draw up.

4. While discrimination in the provision of education is neither desirable not practical, discrimination in the provision of residential facilities, even via outsourcing, is possible.

Primary and secondary education

The general view world-wide, including in the Indian government is that of universal free primary education and largely subsidised secondary education particularly for the poor. Thus Sen and Srivastava (1997) point to near zero cost recovery rates in primary education both at the Centre and in states. Nevertheless there is significant variation in cost efficiency across states, a major reason being differences (of up to 25 percent) in teacher salaries as well as in the extent of employment of para-teachers (see Mehrotra, 2004 and World Bank, 2005). Furthermore, though there appears to be lower absenteeism among para-teachers compared to regular teachers, no statistical quality differences in education outcomes between schools with para-teachers and government schools with regular teachers appears to be present (Mehrotra, 2004, World Bank, 2005). Thus, it appears that improvements in cost efficiency are possible in primary and secondary education.

Mehrotra (2004) also suggests that bringing unaided secondary schools into the GIA fold has two undesirable and efficiency or equity reducing outcomes. First, it has been observed that most such schools have students drawn from non-poor families thus implying increased share of the non-poor in government subsidies. Second, since government set salaries must now be paid to teachers (or claimed to be paid – which may not always be the case) this results in higher costs per student.

Turning to cost recovery proper, the third and fourth measures proposed above in the context of higher education, involving reform of provider incentives and price discrimination for bundled goods, can be used to effect limited improvements in cost recovery.

x) Services for minorities and weaker sections

Finally, consider government services for minorities and weaker sections of society (Scheduled Castes, Scheduled Tribes and Other Backward Classes). For example, in Karnataka, the bulk of these schemes are education related or to create employment opportunities. The total outlay on these schemes was Rs 318 crore in 2002-03. These largely private goods have a merit goods rationale. However as benefits to citizens from poverty alleviation are non-excludible and non-rival, a public goods rationale may also exist. As discussed, this paradoxical situation is present with the bulk of poverty alleviation expenditure, where direct benefits are excludible and rival but indirect benefits have the opposite characteristics. To illustrate the possibility of improved cost recovery, consider a case study of hostels for weaker sections in Karnataka where, currently, there is zero cost recovery.

[108] The first two measures here are identical to two recommendations of the Punnayya and Swaminadhan Committees discussed in Tilak (2000a).

Case Study: Hostels and Schools for Weaker Sections in Karnataka, 2003

In government run hostels, outlays (including some capital outlays) work out to be Rs 810 per student per month or Rs 6 lakh per hostel per year. For schools, the outlay per student is Rs 2145 per month or nearly Rs 11 lakh per school per year.[109] Of hostel costs, around Rs 400 to 450 was reported to be the outlay per inmate on food and other consumables. This is reported to be barely sufficient given current food costs. Even so, given difficulties with ensuring field level accountability, there is reported to be leakage of funds. Two representative facilities are now described.

a) The Pre-matric Girls Hostel, Yehlanka, Bangalore (North). This facility has a strength of 50 students between 10 and 16 years of age belong to SC/ST (38) and OBC (12). Monthly spending on these residents amounts to Rs 400 on food, soap, etc. Inmates are also provided with bedding and some clothes. The hostel also provides part time tuition via 3 part-time tutors. Other services include medical check-ups at a government hospital supposedly every 4 months.

The hostel warden visits hostel only during the day. Other round the clock staff include a watchman and a cook. Staff are not specially trained.[110] The two major administrative documents maintained include an inmates register with photographs of inmates and a supply issue and store register.

The hostel has a large internal courtyard bounded by single-storey rectangular hostel building approximately 30m by 3m on each side, with dormitory rooms for 6 students each, two dining rooms, two common bath and toilet areas, warden's office, and a kitchen. Furthermore there is a large unused area forming a 3 metre perimeter outside hostel building but inside the compound wall. The internal courtyard is also largely unutilised except for some decorative plants maintained by inmates. Clearly, improved space utilisation is possible.

b) The Morarji Desai Residential School at Chamarajapet: This is one of 4 such schools in Bangalore district. The school is currently in temporary premises though a permanent facility is under construction. Student selection is by examination plus merit from those whose parents' income is below Rs 15,000 per annum. The school has 188 students (96 boys and 92 girls) from SC-ST (77), backward classes and religious minorities (106) and financially backward (7) backgrounds. This can be compared to a sanctioned capacity of 250 students. The reason for the existence of a waiting list for admission given unoccupied dormitory space not clear. The students are in standards VI to X. Staff consists of 10 teachers and 1 Principal. There is also one visiting medical officer who is paid an honorarium of Rs 500 per month.

Students are each provided a mattress, sheet, pillow and case, blanket, uniform, shoes, socks, book-bag, trunk, books and school supplies, washing and bathing supplies and food. The consumables budget is Rs 500 per student per month. The annual school budget is Rs 35.70 lakh of which Rs 17.21 lakh is teachers salaries and Rs 3.69 lakh is for non-teaching staff salaries. Rs 9.5 lakh is spent annually on students' food and Rs 3.3 lakh on student supplies. School facilities include a computer lab with 5 PCs and a crafts room. Some other school equipment is from in-kind donations.

The major current methods of curbing leakage is via surprise inspections and regular staff transfers. These measures are of limited efficacy. There is also a system of volunteer visitors, where this is possible, but this too is reported not to work adequately. There is no system to obtain inmate feedback. Obtaining feedback from parents of minor children is felt to be of limited use given the low education levels and manual occupations of parents, most of whom are also below the poverty line.

Cost recovery, either from inmate fees or via internal resource generation is currently absent. While charging fees from current pre-matric hostel inmates, who are from underprivileged backgrounds, is infeasible, internal resource generation is, in the opinion of some Social Welfare Officers, feasible. For example, this is possible through handicraft products or market gardening by hostel inmates, especially in post-matric hostels. In field visits to pre- and post-matric hostels it was seen that surplus land was available for possible commercial exploitation and that enlargement of hostels (by adding additional floors or better space utilisation) was feasible. Consequently, construction of for-payment rooms for allotment to inmates from non-BPL backgrounds, while not reducing or even possibly enlarging available facilities for target groups could also result in greater cost recovery.

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[109] These figures are based on data in the Annual Report, 2002-03 of the Social Welfare Department, Government of Karnataka.

[110] Several other hostels were reported to have unfilled warden's posts. The current warden is a freshly recruit with no experience but has BA and BEd degrees. The previous warden was reported to be on suspension for suspected irregularities.

Scope for internal resource generation in hostels for weaker sections exists through the following measures.

1. By inviting identified NGOs to construct and run additional capacity for "open category" inmates, with charges set to cross-subsidise weaker section inmates.
2. Using the surplus land areas attached to the hostel for income generation either by market gardening using hostel inmates to tend gardens or, in suitable cases, by leasing out the land for commercial activity.
3. By encouraging inmates to learn a trade and produce handicrafts or provide identified services for, say, 3 hours per week in case they are not involved in garden activities. This will also help inmates develop marketable skills.
4. To provide incentives for this, income from student activity may be shared with students and wardens and not just earmarked for cost recovery.
5. A prize scheme from recovered costs may be instituted for hostel wardens and Block and District Social Welfare Officers for outstanding performance, with performance based on (a) income per inmate, (b) feedback from inmates on service quality.
6. A system of anonymous feedback, to be centrally processed, combined with staff incentives is crucial to improve accountability and curb leakage. For example feedback could be collected by an officer from a different department in pre-designed anonymous formats on one day of the year with a return visit to cover absent inmates. Feedback forms could then be processed centrally by the Department of Social Welfare to ascertain hostel-wise performance. These statistics, together with action taken on the basis of the information should be reported in the Department's Annual Report.
7. For post-matric hostels, a small monthly fee (say Rs 20) could be introduced.
8. Alumni associations can be formed for students and inmates in weaker section hostels and also Morarji Desai schools. Students and inmates should be made aware of the cost incurred to finance them and could be encouraged to return a portion of the expenditure in future through alumni donations.

These measures should help in increasing what should be the major effectiveness indicator for social welfare services – the number of beneficiaries of norm-based levels of services – while lowering cost per beneficiary.

5) Conclusions, limitations and suggestions for further work

The main conclusions reached in this study are as follows.

1. Due to severe deficiencies in budget reporting conventions (and consequently, RBI data on state finances), non-tax revenue of individual states is overstated. Revenue data cannot be compared across states or across years with any confidence.
2. If data used for this study can be relied on (a big if), state lotteries are not a major source of revenue for most states. Nevertheless, lotteries do contribute adequately to revenues in most states which run them (Sikkim being an exception).
3. Overall performance of state PSUs is poor, with around 60 percent having accumulated losses and around 28 percent having negative net worth (c. 1998-99) . Nevertheless, state PSU performance is not always poor with 34 percent making net profits, despite mandatory social obligations in many cases. So no one-size-fits-all closure or privatisation policy should be followed, particularly from a revenue standpoint.
4. In most sectors where the government has a large fiscal presence, policy goals are not clearly articulated. This greatly hampers assessment of performance in these sectors including cost recovery and non-tax revenue performance.
5. Furthermore, to the extent that actual resource costs of government services are required to correctly estimate cost recovery, this is not possible where the government itself is a service buyer
6. Despite data deficiencies the significant positive relation between cost recovery performance (as measured by non-tax revenue to revenue expenditure) and the revenue expenditure to GSDP

ratio is likely to be robust. If there is also a positive relation between the expenditure GSDP ratio and GSDP per capita, then feasible cost-recovery in states differs with the level of development.[111]

7. Major contributors to non-tax revenue are mines and mineral fees and royalties and forest revenues - Not sectors where cost recovery is a major issue.

8. In improving cost efficiency performance of other spending departments in state governments, a (possibly the) key problem is that a concern for cost efficiency, let alone cost recovery, is currently absent in most spending departments of state governments.

Despite the length of this paper, it has severe deficiencies. The three major limitations are, first, the poor data base making impossible a reliable assessment of non-tax revenue performance over time and across states. Second, performance criteria and indeed, the economic theory of non-tax revenue on which these should be based, is yet to be adequately formalised. Even worse, principles applicable to different sources of non-tax revenue are clearly not uniform, so that an immense amount of conceptual work is needed to rectify this. Third, a related point, detailed knowledge of principles as well as Indian conditions in major non-tax revenue generating sectors is needed for a satisfactory assessment. No one scholar can hope to have such a breadth and depth of knowledge: An adequate study of non-tax revenues should ideally be carried out by a team of experts on different sectors together with public finance and public administration specialists. Obviously, such a multi-disciplinary and multi-speciality study is worth doing in further work. However, the severe revenue data and budget presentation problems must first be overcome.

6) Suggestions for strengthening revenue performance and improving management

Despite the study's limitations, some suggestions for strengthening non-tax revenue performance are now offered. The two major problems identified which can be highlighted as the most pressing problems which need to be addressed:

1. To ensure transparency, accountability and enable effective monitoring, it is essential that budgetary figures for non-tax revenue reflect reality and are not artificially inflated by various "tricks" as is presently the case, particularly for interest receipts. At the level of major heads, realism should also be ensured by the Reserve Bank of India, which is the major source of cross-state data on non-tax revenue.

2. To improve cost efficiency and recovery, institutional reform holds the key. A framework for such reform is described in Table 18 and related discussion. To make a start, it is important to make principal secretaries of expenditure departments for various economic and social services accountable for cost efficiency. Reforms should next focus on specification of benchmarks and improved cost recovery incentives for staff and agents to whom collection is delegated. For sustainable improvement, a detailed administrative reform plan is needed based on a changed mind-set of administrators who currently show no interest in cost effectiveness. However, an immediate step that may be taken is a circular to selected departments in state governments requiring them to include, in their annual reports or annual performance budgets, (a) figures on departmental expenditure and (b) figures on benefits in appropriate physical units per rupee of outlay.

Other reforms which can help improve non-tax revenue performance or its assessment include:

3. Comparability of non-tax revenue data across states is limited by different states having different boundaries between government departments and PSUs. This should be addressed and uniform conventions devised, possibly by the Reserve Bank of India.

4. The greatest scope for improved cost recovery as well as non-tax revenue generation through the profitable sale of government provided goods and services appears to be through restructured pricing. Important sectors where this is the case include healthcare, higher education, services for weaker sections, roads and public buildings and, to an extent, irrigation. States should consider setting up task forces to recommend pricing reforms in these sectors.

5. With regard to revenue from mines, first, to facilitate monitoring of this important revenue source creation of a dedicated major head in budget accounts is needed. Second, reform is needed in procedures for sanction of mining concessions, an area where practices in different states are not

[111] Broad evidence of this relation, reported in Table 10, does not survive detailed statistical examination.

uniform. Third, field enforcement in the case of minor mineral leases requires modernisation and automation, along lines similar to tax administration modernisation.

6. For forests, completion of work plans in states which are yet to do so and, second, better control and monitoring of timber felling and auctions, making use of automation as well as modern remote sensing technology will greatly boost revenue. To improve revenue performance, corporatisation of commercial activities is suggested, which will leave forest departments free to focus on conservation and protection. In the long run, when the legal framework can be reformed and a suitable framework for private sector accountability devised, PSUs can be privatised. An exception to commercial exploitation by corporations is needed in areas where there is traditional community dependence on forests, particular in certain tribal areas. For these, increasing the coverage joint forest management (JFM) appears to be the way forward, though the effectiveness of JFM needs to be evaluated.

7. Several states which currently derive negative net revenue from state lotteries (for example, Haryana) or where profit margins are low, can improve net (not gross) non-tax revenue by discontinuing lotteries.

8. Dividend revenue can be improved – as can the efficiency of PSUs – by implementing the recommendations of the Study Group on Reforms in State Public Sector Undertakings. However, there is one suggestion of the Study Group that may need to be reconsidered: From a pure revenue standpoint, it is not desirable to privatise PSUs which pay good dividends to the government purely because ideology dictates that the activities of the concerned PSU are outside the desirable scope of government activity.

9. Other sectors where problems exist include the usual suspects, irrigation, housing, and passenger transport services, but also crop and animal husbandry along with pisciculture services. For these sectors, institutional reform, particularly to improve cost recovery incentives, along with specification of recovery and performance benchmarks holds the key.

10. Regarding non-traditional areas with significant scope for non-tax revenue generation, the Karnataka Revenue Reforms Commission (2004) identifies various tourism related activities including eco-tourism and health tourism.

11. Sector specific suggestions for improved service quality and cost recovery, particularly through pricing, incentive and monitoring reforms, have been made in the paper for education, health services, housing, husbandry, roads and government buildings, irrigation, services for weaker sections, and tourism.

Annexes

Classification of non-tax revenue in state budgets

Table A1: Sources of non-tax revenue
With budget heads in Indian state government accounts

Sl.	Description	Budget head	Sl.	Description	Budget head
i. Compulsory, requited payments to government					
1	Earmarked taxes	---	2	Fines and penalties	
			2.1	Police Fees, Fines and Forfeitures	0055-103
			2.2	Judicial Fines and forfeitures	0070-01-102
			2.3	Other fines and forfeitures	Various
ii. Voluntary, unrequited payments to government					
3	Donations	??	4	Unclaimed deposits and excess payments	0075-101
iii. Voluntary, requited payments to government					
iii.1 Revenue from assets					
5	Interest receipts	0049	11	Fishery rents	0405-011
6	Dividends from Public Undertakings	0050-101	12	Environmental, Forestry and Wildlife	0406-02
7	Dividends from Other Investments	0050-200	13	Major and Medium Irrigation Projects[1]	0701
8	Mineral Concession Fees, Rents and Royalties	0853-102	14	Minor Irrigation Projects[1]	0702
9	Public works (rents on buildings, hire charges for equipment, etc)	0059	15	Petroleum	0802
10	Housing	0216	16	Roads and Bridges[1]	1054
iii.2 and iii.3 Revenue from regulated activity and sale of permits, goods and services					
General Services[2]			Economic Services		
17	Public Services Commission	0051	33	Crop Husbandry	0401
18	Police (except 0055-103 above)	0055	34	Animal Husbandry[3]	0403
19	Jails	0056	35	Dairy Development	0404
20	Stationery and printing	0058	36	Fisheries (excluding 0405-011)	0405
21	Other administrative services	0070	37	Forestry[4]	0406-01
22	Miscellaneous general services (excluding 0075-101, 0075-103)	0075	38	Plantations	0407
23	State lotteries	0075-103 less 2075-103	39	Food Storage and Warehousing	0408
Social Services			40	Cooperation	0425
24	Education, Sports , Art and Culture	0202	41	Other Agricultural Programmes	0435
24.1	Elementary Education	0202-101	42	Land Reforms[5]	0506
24.2	Secondary Education	0202-102	43	Other Rural Development Programmes	0515
24.3	University and Higher Education	0020-103	44	Other Special Areas Programmes	0575
24.4	Technical Education	0202-02	45	Power[1]	0801

Sl.	Description	Budget head	Sl.	Description	Budget head
25	Medical and Public Health	0210	46	Village and Small Industries	0851
25.1	Urban Health Services	0210-01	47	Non-ferrous Mining and Metallurgical Industries (excluding 0853-102)	0853
25.2	Medical Education, Research and Training	0210-03	48	Other Industries	0875
25.3	Public Health	0210-04	49	Ports and Lighthouses	1051
26	Family welfare	0211	50	Civil Aviation	1053
27	Water Supply and Sanitation	0215	51	Road Transport	1055
28	Urban Development	0217	52	Other Scientific Research	1425
29	Information and Publicity	0220	53	Tourism	1452
30	Labour and Employment	0230	54	Civil Supplies	1456
31	Social Service & Welfare	0235	55	Other Economic Services	1475
32	Other Social Services	0250			
32.1	Welfare of SC, ST and OBC	0250-102			

Notes: The Budget head numbers in the table are based on the Finance Accounts for West Bengal for 2002-03. There is some variation in items included in minor budget heads across states and years.
(1) : May include contra entries.
(2) : Head 0071 less head 2071, pertaining to pensions and retirement benefits, is omitted as being conceptually capital receipts.
(3) : Includes head 0403-110, Grants from the Indian Council of Agricultural Research, which should be netted out to arrive a state's own non-tax revenue.
(4) : Mainly consists of 0406-01, Sale of timber and other forest produce.
(5) : Includes 0506-103, Receipts from maintenance of land records.

Selected state-wise revenue statistics with uncorrected data[112]

Table A2: Revenues as a % of GSDP for selected own revenue components: 1985-86 to 2001-02 (RE)

Year	AP	BI	GU	HA	KA	KE	MP	MA	OR	PU	RA	TN	UP	WB	14 major	Other	All
States' own revenue excluding interest receipts																	
1985/86 to 1992/93	9.1	7.0	13.0	10.0	10.2	9.5	7.8	9.6	6.3	8.5	7.6	9.5	5.8	6.1	8.4	4.3	8.0
1993/94 to 1999/2000	7.4	6.0	8.5	13.0	9.7	9.7	7.6	7.9	6.3	9.5	7.4	9.3	5.8	5.4	7.8	7.1	7.7
2000/01	8.5	7.8	9.5	10.1	9.5	9.4	9.8	9.3	7.4	10.8	8.0	9.6	7.2	4.6	8.5	5.5	8.2
2001/02 (RE)	8.7	5.3	9.5	10.7	9.2	9.5	7.6	9.4	7.6	10.7	7.5	9.4	6.8	5.2	8.3	8.5	8.3
States' own non-tax revenue																	
1985/86 to 1992/93	2.4	3.0	3.6	3.5	2.4	1.4	2.9	2.7	1.9	2.4	2.8	1.5	1.6	0.7	2.2	2.0	2.2
1993/94 to 1999/2000	2.0	1.9	2.4	6.9	1.8	1.1	2.5	1.9	2.0	3.9	2.8	1.1	1.4	0.5	2.0	2.5	2.0
2000/01	2.0	1.7	3.0	2.6	1.6	1.0	2.4	2.3	1.8	4.4	2.1	1.2	1.1	0.9	1.9	1.5	1.9
2001/02 (RE)	2.0	0.7	3.3	3.0	NA	0.9	1.6	1.2	1.6	4.4	1.7	1.1	0.9	0.9	NA	NA	1.7
States' own non-tax revenue excluding interest receipts																	
1985/86 to 1992/93	1.1	3.0	2.0	2.5	1.4	1.2	2.5	1.8	1.7	1.1	1.9	0.9	1.0	0.5	1.5	1.8	1.6
1993/94 to 1999/2000	0.9	1.7	1.1	6.1	0.9	1.0	2.2	1.0	1.8	2.9	1.7	0.7	1.0	0.4	1.4	2.3	1.4
2000/01	0.9	1.5	1.3	2.2	0.9	0.9	2.1	1.0	1.7	3.4	1.4	0.9	0.8	0.4	1.2	1.2	1.2
2001/02 (RE)	0.9	0.5	1.9	2.4	0.9	0.9	1.3	0.9	1.6	3.6	1.1	0.7	0.6	0.5	1.0	2.4	1.2

[112] Tables A2 and A3 are taken from Das-Gupta (2004).

Year	AP	BI	GU	HA	KA	KE	MP	MA	OR	PU	RA	TN	UP	WB	14 major	Other	All
Source: Reserve Bank of India data from Das-Gupta (2004b)																	

Table A3: Buoyancy Regression Results: 1985-1986 to 2000-01

	States' own revenue	States' own revenue excluding interest receipts	States' own non-tax revenue	States' own non-tax revenue excluding interest receipts
Constant				
1985-86 to 1992-93				
AP	3.49	3.57	2.55	2.98
BI	3.11	3.1	3.83	3.83
GU	3	2.86	2.56	1.78
HA	3.27	3.11	3.31	2.88
KA	3.15	3.04	3.2	2.98
KE	3.16	3.09	3.03	2.62
MP	2.97	3.01	2.61	2.73
MA	3.50	3.50	3.44	3.76
OR	2.53	2.57	2.11	2.23
PU	2.87	3.25	1.83	2.93
RA	2.9	2.96	2.2	2.39
TN	2.81	2.93	1.58	2.34
UP	2.57	2.38	2.27	1.44
WB	2.85	2.8	3.19	2.92
1993-94 to 2000-01 (Significantly different constants from 1985-86 to 1992-93 at 10% marked with a "*")				
AP	2.51*	2.37*	2.89	2.99
BI	3.31	3.5	4.07	4.93
GU	2.99	2.99	2.25	2.16
HA	4.5	4.41*	6.33*	6.46*
KA	3.38*	3.32*	2.71	2.27*
KE	3.22	3.2	3.06	2.88
MP	2.72	2.62	3.06	2.83
MA	2.75*	2.76*	2.73	3.37
OR	2.96	2.74	3.49*	2.83
PU	2.77	3.04	0.8	1.33
RA	3.49*	3.18	4.57*	4.18
TN	2.96	2.88	2.14	1.27*
UP	3.02	2.92	5.41*	5.81*
WB	3.68*	3.81*	1.18*	1.97*
Buoyancy				
1985-86 to 1992-93				
AP	0.81	0.75	0.93	0.61
BI	0.89	0.89	0.42	0.42
GU	1.07	1.11	0.99	1.23
HA	0.89	0.95	0.63	0.77
KA	0.96	0.98	0.65	0.64
KE	0.92	0.95	0.59	0.75
MP	0.98	0.95	0.94	0.86
MA	0.82	0.81	0.63	0.44
OR	1.14	1.12	1.08	1.00
PU	1.05	0.85	1.22	0.59
RA	1.01	0.97	1.11	0.95
TN	1.08	1.02	1.23	0.85
UP	1.09	1.14	0.97	1.21

	States' own revenue	States' own revenue excluding interest receipts	States' own non-tax revenue	States' own non-tax revenue excluding interest receipts
WB	0.98	1.00	0.45	0.52
1993-94 to 2000-01 (Significantly different buoyancies from 1985-86 to 1992-93 at 10% marked with a "*")				
AP	1.14*	1.17*	0.8	0.66
BI	0.82	0.74	0.32	-0.01
GU	1.00	0.98	1.05	0.96
HA	0.46	0.49*	-0.4	-0.47*
KA	0.88*	0.88*	0.84	0.89*
KE	0.91	0.92	0.62	0.67
MP	1.07	1.10	0.77	0.83
MA	1.06*	1.05*	0.87	0.58
OR	0.95	1.03	0.52*	0.77
PU	1.10	0.98	1.68	1.41
RA	0.8*	0.89	0.22*	0.28
TN	1.01	1.03	0.97	1.2*
UP	0.93	0.95	-0.05*	-0.22*
WB	0.68*	0.63*	1.19*	0.87*
Significant increase (UP) or decrease (DOWN) in buoyancy in the post 1992-93 period.				
AP	DOWN	DOWN		
HA		UP	UP	UP
KA	UP	UP		DOWN
MA	DOWN	DOWN		
OR			UP	
RA	UP		UP	
TN				DOWN
UP			UP	UP
WB	UP	UP	DOWN	DOWN
Note: Regressions included a dummy variable for the "bad year" 1998-99 with state specific coefficients. Source: Das-Gupta (2004b), using RBI data.				

Table A4: Revenues as a percentage of GSDP (1993-94 series): Indices with 1993-94=100 (Average of 19 states*)

YEAR	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02
Total Revenue	106	110	108	106	96	99	96	102
States Own Revenue (SOR)	143	163	165	160	147	153	113	153
State's own Non-Tax Revenue (SONTR)	179	210	211	201	176	194	122	174
SONTR less State Lottery Expenditures	98	109	99	93	80	106	90	78
SONTR less State Lottery Expenditures Less interest Receipts	99	112	86	89	82	104	84	82
SOR less State Lottery Expenditures Less interest Receipts	100	100	92	91	86	96	97	99
Interest Receipts	104	126	191	121	76	195	142	84
Dividends and Profits	221	186	256	216	200	766	257	128
General Services (incd state lotteries)	400	715	561	689	589	540	369	666
State lotteries	143	126	92	86	82	94	89	93
General Services (net of state lottery expenditures)	104	217	117	161	143	159	104	112
Net Revenue from State Lotteries	100	-286	171	128	152	-157	189	93
Social Services	94	96	89	113	96	104	106	113
Education, Sports, Art and Culture	104	114	89	87	79	97	121	135
Medical, Public Health and Family Welfare	81	84	87	82	88	82	75	82
Housing	98	87	75	467	218	91	95	93
Urban Development	93	1033	986	880	160	153	287	120
Labour and Employment	92	96	97	99	83	84	102	122
Social Security and Welfare	97	101	118	198	152	129	128	124

Economic Services	100	91	81	72	70	92	83	81
Fisheries, Crop Husbandry and Animal Husbandry	95	87	83	89	65	66	67	60
Forestry and Wildlife	94	88	75	59	46	80	66	62
Irrigation	112	93	75	71	73	66	64	336
Power	3277	505	74	136	90	1441	1324	96
Industries (Includes Non-Ferrous Mining and Metallurgical Industries and Other Industries)	120	108	110	111	123	113	120	108
Road Transport	81	87	60	86	49	53	43	68
Tourism	123	145	123	118	263	87	72	103
Note: *: Andhra Pradesh, Arunachal Pradesh, Assam, Goa, Gujarat, Haryana, Himachal Pradesh, Karnataka, Kerala, Maharashtra, Manipur, Meghalaya, Orissa, Punjab, Rajasthan, Sikkim, Tamil Nadu, Tripura, West Bengal.								

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