Subsidies, Merit Goods and the Fiscal Space for Reviving Growth

An Aspect of Public Expenditure in India

SUDIPTO MUNDLE, SATADRU SIKDAR

The incidence of implicit and explicit budget subsidies provided by the central and state governments has declined from about 12.9% of the gross domestic product in 1987–88 to 10.3% at present, with the bulk of these subsidies being provided by the states and about half being spent on non-merit subsidies. This paper argues that rationalisng non-merit subsidies is one of several deep fiscal reform measures that could together free up massive fiscal space that can be used to finance an inclusive growth revival strategy.

Sudipto Mundle (*sudipto.mundle@gmail.com*) is Distinguished Fellow at the National Council of Applied Economic Research, New Delhi. Satadru Sikdar (*satadru.sikdar@nipfp.org.in*) is a faculty at the National Institute of Public Finance and Policy, New Delhi. India is an economy chronically under fiscal stress. The tax to gross domestic product (GDP) ratio has remained below 18% (central plus state governments),¹ while expenditure has progressively increased to 29% of GDP.² Large fiscal deficits and even larger public sector borrowing requirements (PSBR) remain a chronic problem.³ In this context, the high incidence of budget subsidies—the unrecovered cost of publicly provided private services—has always been an important policy concern.

In a paper published in 1991, Mundle and Rao estimated the total volume of explicit and implicit budget subsidies for the central and state governments at 14.4% in 1987–88.⁴ Several estimates of subsidies were published subsequently by their colleagues at the National Institute of Public Finance and Policy (NIPFP). Though these were conceptually similar to the Mundle–Rao estimates, they were not strictly comparable and coverage varied from an all-India estimate to estimates for the central government to estimates for selected states.⁵ Responding to persistent demands for replicating the original Mundle–Rao estimate, we have now estimated implicit and explicit budget subsidies for the years 1987–88, 2011–12 and 2015–16.

Though the incidence of subsidies is lower today than 30 years ago, it still amounts to over 10% of GDP, and over half of this is for non-merit subsidies. Rationalising these subsidies, along with other fiscal reform measures, would free up considerable fiscal space for an inclusive growth revival strategy without raising tax rates and cutting down on the fiscal deficit at the same time.

Conceptualising Subsidies

In this paper, subsidies have been defined as the unrecovered cost of social and economic services delivered by the government. The years for which subsidies have been computed include 1987–88, 2011–12 and 2015–16. The exercise covers the central government and what were 14 major states in 1987–88. Some of these have subsequently been bifurcated. So, now, they add up to 18 major states accounting for about 93% of the population of India.

In other words, these are essentially the estimates of explicit subsidies, flowing through the budgets of the central government and 18 major state governments. Administrative services are assumed to be pure public services that neither be priced, nor their costs recovered, by definition. Hence, the 36 administrative services in the Finance Accounts database are not included in the reckoning.

Formally,

$$S_j = v_j + i(K_j + L_j) + dK_j - y_j - r_j - t_j$$

where j = 37...123, indexes the services.

For the sector, j^{th} is the subsidy; s_j is the variable cost or revenue expenditure on the service; K_j is the capital stock in the sector; L_j is the stock of investment outside government by the sector in the form of loans or equity; *i* is an imputed interest rate representing the opportunity cost of money for government; *d* is the depreciation rate; y_j is revenue receipts by the sector; r_j is income by way of interest or dividend on loans and equity; and t_j is a transfer payment from the sector to individual agents.

The total volume of subsidies on all services is given by

$$S = \sum_{j=37}^{123} s_j$$

Note that other subsidy like components, such as direct income transfers, for instance, the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) or the Pradhan Mantri Kisan Samman Nidhi (PM-KISAN), concessional interest rates, concessional pricing of land or other assets sold by the government and tax exemptions or concessions, otherwise known as tax expenditures, are not included in these estimates. Thus, the concept of budget subsidy in this paper has been strictly confined to the unrecovered cost of services provided by the government other than pure public services.

Flow of Budget Subsidies

The total flow of subsidies through the budgets of the central and state governments in the years 1987-88, 2011-12 and 2015-16 are presented in Table 1.6 The estimates show that there was a decline in the incidence of total subsidies from 12.9% of GDP in 1987-88 to 10.7% in 2011-12 and further to 10.3% in 2015-16, that is, a decline of a little over 20% in 28 years. The decline was relatively more pronounced in the case of the central government, going down from 4.9% in 1987-88 to 2.9% in 2015-16, that is, over 40%. For all states taken together, which account for the bulk of subsidies, it first declined from 8.1% in 1987-88 to 6.9% in 2011-12, but rose again to 7.4% in 2015-16, that is, a net decline of less than 9%. For statewise details, see Appendix Table A1 (p 59).

The incidence of subsidies is higher for economic services at 5.8% in 2016–17, down from 7.9% in 1987–88, as compared to social services, where subsidies declined from 5.1% in 1987–88 to 4.5% in 2015–16. Most of the central subsidies are for economic services with very little for social services. The states, on the other hand, account for virtually all the subsidies in social services. It is also higher (4.1% of GDP in 2015–16) than states' subsidies in economic services (3.3% of GDP in 2015–16).

From a policy perspective, it is important to compare the relative incidence of merit subsidies and unwarranted nonmerit subsidies. The definition of merit subsidies has been strictly limited to four items: food, primary and secondary education, health and water supply, and sanitation. All other subsidies are considered unwarranted non-merit subsidies. The share of merit subsidies increased from around 36% in 1987–88 to over 44% in 2015–16 (Table 2; for statewise details, see Appendix Tables A2.1 and A2.2, p 60). But that means unwarranted non-merit subsidies still account for 56% of total subsidies.

The subsidies treated as merit subsidies are mainly for social services, which are mostly provided by the states (Appendix Table A2.2). Nevertheless, the share of merit subsidies is slightly

Table 1: Percentage Share of Subsidy to GDP/GSDP													
	Social	Sector Sul	osidies	Econom	nic Sector S	Subsidies	Economic and Social Sector Subsidies						
	1987-88	2011-12	2015-16	1987-88	2011-12	2015-16	1987-88	2011-12	2015-16				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)				
All states*	4.4	3.83	4.09	3.66	3.08	3.26	8.06	6.91	7.35				
Centre*	0.65	0.94	0.39	4.22	2.82	2.54	4.87	3.76	2.93				
All states + centre*	5.05	4.77	4.48	7.88	5.9	5.8	12.93	10.67	10.28				
All states' average**	5.21	4.31	4.64	4.47	3.39	3.54	9.69	7.7	8.18				
*These numbers are per	centage o	of GDP.											

**All states' averages are the average as percentage of GSDP.

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	M	erit Subsid	ies	Non-	merit Subs	idies	Total Subsidies				
	1987-88	2011-12	2015-16	1987-88	2011-12	2015-16	1987-88	2011-12	2015-16		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)		
All states*	44.19	45.42	43.93	55.81	54.58	56.07	100	100	100		
Centre	21.9	62.5	45.13	78.1	37.5	54.87	100	100	100		
All states + centre*	35.79	51.44	44.27	64.21	48.56	55.73	100	100	100		
States' average	43.72	46.81	45.94	56.28	53.19	54.06	100	100	100		
* All states refer to color	tod maio	statos									

* All states refer to selected major states

** States' average means calculated average of states' merit and non-merit subsidy share.

Table 3: Ranks of States by Subsidy Incidence

	•		•							
Rank	1987–88	Rank	2011–12		Rank	2015–16				
1	Maharashtra	1	Punjab	(+3)	1	Tamil Nadu	(+1)			
2	West Bengal	2	Tamil Nadu	(+4)	2	Punjab	(-1)			
3	Haryana	3	Haryana	0	3	West Bengal	(+2)			
4	Punjab	4	Kerala	(+3)	4	Kerala	0			
5	Uttar Pradesh	5	West Bengal	(-3)	5	Haryana	(-2)			
	(includes Uttarakhand)									
6	Tamil Nadu	6	Gujarat	(+2)	6	Maharashtra	(+1)			
7	Kerala	7	Maharashtra	(-6)	7	Gujarat	(-1)			
8	Gujarat	8	Rajasthan	(+5)	8	Karnataka	(+1)			
9	Karnataka	9	Karnataka	0	9	Rajasthan	(-1)			
10	Andhra Pradesh	10	Andhra Pradesh	0	10	Andhra Pradesh	0			
	(Telangana)		(Telangana)			(Telangana)				
11	Odisha	11	Odisha	0	11	Odisha	0			
12	Madhya Pradesh	12	Madhya Pradesh	0	12	Bihar	(+2)			
	(includes Chhattisgarh)		(includes Chhattisgar	(includes Chhattisgarh)						
13	Rajasthan	13	Uttar Pradesh	(-8)	13	Uttar Pradesh				
			(includes Uttarakhand) (includes Uttarakhand							
14	Bihar	14	Bihar	0	14	Madhya Pradesh				
	(includes Jharkhand)		(includes Jharkhand)	ides Jharkhand) (includes Chhattisgarh)(-						

Figures in parentheses indicate the change in rank in 2011–12 compared to 1987–88, and the change in the rank in 2015–16 compared to the rank in 2011–12.

(%)

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Figure 1: Subsidy as Percentage of GSDP



lower than that of non-merit subsidies for the states. In contrast, the share of merit subsidies is higher than non-merit subsidies for the central government, even though the central government mainly provides economic services. This apparent paradox appears because economic services include agriculture sector services, and this in turn includes the provision of food subsidy, the largest of all merit subsidies.

Interstate Subsidy Flows

We now turn to the variations in subsidy flow across states and over time, which is presented in Figure 1. The average level of the states' subsidies declined from 9.4% of the gross state domestic product (GSDP) in 1987–88, to 7.8% in 2015–16. The distribution around this average ranged from 6.5% in Maharashtra to 15.3% in Bihar (including Jharkhand) in 1987–88, and 5.1% in Tamil Nadu to 11.8% in Madhya Pradesh (MP) (including Chhattisgarh) in 2015–16. The incidence of subsidies was higher in 2015–16 compared to 1987–88 in only two states, namely Uttar Pradesh (UP) and MP. It remained unchanged in Maharashtra at 6.5%. In all other states, the incidence of subsidies in 2015–16 was lower than in 1987–88.

The rank distribution of states in descending order of subsidy incidence is presented in Table 3 (p 53). The distribution has remained broadly stable, though there has been some churn. Between 1987–88 and 2011–12, there was no change in the rank of six states. But, Maharashtra that had the top rank with 6.5% subsidy incidence in 1987–88 had slipped down six ranks to the seventh position by 2011–12. Another state that slipped significantly was West Bengal (-3). Bihar, which was at the bottom in 1987–88, remained there even in 2011–12. The states that improved their ranks the most were Rajasthan (+5), Tamil Nadu (+4), Kerala (+3) and Punjab (+3), which achieved the top rank. It was followed by Tamil Nadu and Haryana.

By 2015–16, West Bengal had improved and moved up by two ranks and so also had Bihar. MP lost two ranks to hit the bottom of the rank ordering. Haryana also slipped two ranks. Other states either maintained their 2011–12 rank or moved up or down by just one rank.

Rankings are relative. A state's rank depends not just on its own performance, but its performance relative to that of other states. In very broad terms, Bihar, UP, MP and Odisha were the worst performers in 1987–88 and remain so even today. There has been more churn at the top, but Tamil Nadu, Punjab, West Bengal and Kerala, which were already among the better performers in containing subsidies in 1987–88, are still the best performers today.

There is a strong inverse relationship between the per capita income (GSDP) and incidence of subsidies in a state. The higher the per capita GSDP the lower is the incidence of subsidies (Figure 2, p 55). This is also consistent with the decline in incidence of subsidies over time, overall, and in most states, with rising per capita incomes. The relationship between state per capita income and the incidence of subsidies can be used to assess which states are providing excess subsidy and which are providing less compared to the predicted level of subsidy for their level of per capita income, that is, their expenditure efficiency.

In some states, the incidence of subsidies is much higher than the level predicted by the regression relationship. These include UP, MP, Andhra Pradesh and Karnataka. Conversely, subsidy incidence is much lower than the predicted level in states like West Bengal, Punjab and Tamil Nadu. Though Bihar still has the highest incidence of subsidies, and this was much higher than the level predicted for its per capita GSDP in both 1987–88 and 2011–12, its level of subsidy incidence in 2015–16 was exactly at the predicted level.

However, this way of assessing which states are providing excess subsidies is somewhat problematic because all subsidies are not by definition bad or unwarranted. As discussed above, merit subsidies are desirable in the public interest, while nonmerit subsidies are not. Further, instead of an omnibus relationship between per capita income and incidence of subsidies, it is more useful to examine whether there is a significant

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 $\label{eq:Per capita GSDP 2015-16} Per capita GSDP 2015-16 \\ \mbox{Subsidy \% GSDP 2015-16= 12.80 + (-) 0.0000381 (per capita GSDP 2015-16)*+ ϵ;} \\ (R squared = 0.5590) \\ \mbox{Comparison of the set of the$



Subsidy % GSDP 2011–12=11.65+(-) 0.0000491 (per capita GSDP 2011–12)* + $\epsilon;$ (R squared = 0.6503)



Subsidy % GSDP 1987–88 = 14.39 (-) 0.0010741 (per capita GSDP 1987–88)* + $\epsilon;$ (R squared = 0.5091)

* Significant at 1% level.

State codes: AP–Andhra Pradesh (Telangana); BHR–Bihar (includes Jharkhand); GUJ–Gujarat; HAR–Haryana; KAR–Karnataka; KER–Kerala; MP–Madhya Pradesh (includes Chhattisgarh); MAH–Maharashtra; ORS–Odisha; PNJ–Punjab; RAJ–Rajasthan; TN–Tamil Nadu; UP–Uttar Pradesh (includes Uttarakhand); WB–West Bengal.

relationship between specific public services and the subsidy per capita provided for that service.⁷

Subsidies and Consumption of Public Services

Many private goods that could be priced and sold through the market by private providers are in fact provided by state governments in India, sometimes, in competition with private providers. These include services like education, health, power, etc, which are provided at subsidised rates. So, the question arises: Do subsidies impact the consumption of public services? To address this question, we combine the data on interstate variations in subsidy flows with the data from an earlier study on interstate variations in the delivery of public services (Mundle et al 2016).

Road infrastructure: Starting with infrastructure services, we take the density of state highways (kilometres [km] per 100 sq km of area) as an indicator of infrastructure provision for road transport. We do not take total road density because that includes both national highways as well as village and municipal roads, etc. The former is a responsibility of the federal National Highway Authority, while the latter is the responsibility of local governments. State highways are in the jurisdiction of state governments, which are also responsible for providing the state-level transport subsidy. The statistical relationship between per capita transport subsidy and state highway density is displayed by the linear regression line in Figure 3. There is a strong positive relationship between the two, which is statistically significant at the 1% level of confidence.

Figure 3: State Highway Density and Per Capita Transport Subsidy in 2011–12



State Highway Density (in kms per 100 sq km of area) = (-) 1.079 + 0.01224 (Per Capita Transport Subsidy 2011–12)* + ε ; (R squared = 0.5964). * Significant at 1% level; State codes: same as Figure 2.

Electricity: As another infrastructure service, we looked at power consumption. In particular, we tested for the relationship between per capita energy subsidy and per capita consumption of electricity (kWh). It turns out that there is no significant relationship between power subsidy and power consumption. Though the sign of per capita subsidy in the regression equation turned out to be positive, the relationship is not statistically significant and is not reported here. One obvious policy implication following from this is that even a significant reduction in power subsidies, as in Ujwal DISCOM Assurance Yojana, which is causing severe fiscal stress in some states, would make little difference to power consumption.

Education: We next look at the impact of education subsidies. In Figure 4a (p 56), the linear regression line shows the relationship between per capita education subsidy (PCES) and literacy rate. The linear regression line in Figure 4b (p 56) shows the relationship between PCES and the government's education development index (EDI)⁸ in 2011–12, the year for which we get the relevant data from the Mundle et al (2016) paper on government service delivery. Both education indicators show that there is a very strong positive relationship between education

Figure 4a: Literacy Rate and PCES in 2011–12



Literacy Rate 2011 = 48.37854 + 0.0141332 (PCES 2011-12)* + ε ; (R squared = 0.7862). * Significant at 1% level; State codes: same as Figure 2.

Figure 4b: EDI and PCES in 2011-12



* Significant at 1% level; State codes: same as Figure 2.

subsidy and consumption of education services, significant at the 1% level of confidence.

There is growing evidence, especially from the Pratham sponsored ASER surveys,⁹ that quantitative indicators of education service consumption conceal the massive deficit in learning outcomes—which is possibly the most serious policy challenge in education in India today. Accordingly, we have presented in Figure 5a the linear regression line between education subsidy and reading skills for students of standards I and II. The linear regression line in Figure 5b shows the relationship between education subsidy and mathematics learning outcomes for students in standards in I or II.

Here too, we see a very strong positive relationship between education subsidy and learning skills for reading and mathematics, both, again, significant at the 1% level of confidence. The key policy takeaway from this evidence is that education subsidies, which we treat as merit subsidies, are indeed very important in determining the level of education consumption as well as actual learning outcomes.

Health services: Next, we test the relationship between per capita subsidy in consumption of health services and health outcomes, that is, the linear regression line between per capita health subsidy and infant mortality rate (IMR) in Figure 6a (p 57) and that between health subsidy and life expectancy in Figure 6b (p 57). Both indicators of health outcome are seen to have a very strong relationship with per capita healthcare subsidy significant at the 1% level of confidence.

Figure 5a: ASER Reading Level for Standards I–II and PCES in 2011–12



ASER Reading 2011 = 43.10637 + 0.0182583 (PCES 2011–12)* + ε ; (R squared = 0.5271) * Significant at 1% level; ε is error; State codes: same as Figure 2.

Figure 5b: ASER Math Level for Standards I–II and PCES in 2011–12



* Significant at 1% level; ε is error; State codes: same as Figure 2.

The policy conclusion from this evidence is that health subsidy, which we also treat as a merit subsidy, has a strong positive impact on health outcomes and needs to be sustained, if possible even increased.

Interstate expenditure efficiency: Finally, on the question of efficiency in the use of subsidies, we find large differences across states in the outcome delivered per unit of per capita subsidy for the various services. Noting these differences, we have attempted to identify the states that lie on the subsidy efficiency frontier for the different public services analysed in this paper.¹⁰ Starting with infrastructure, as we move from low to high state road density, we see by inspection that West Bengal, Maharashtra and Kerala define the road transport subsidy efficiency frontier (dashed line in Figure 3).

In the case of education subsidy, we find that Bihar, UP, West Bengal and Kerala lie on the literacy subsidy efficiency frontier (dashed line in Figure 4a), while only Bihar and Kerala define the subsidy efficiency frontier for education development as measured by the DICE index (dashed line in Figure 4b). Learning outcomes capture a very different qualitative dimension of education, as discussed above. Bihar, Andhra Pradesh and Kerala lie on the learning outcome subsidy efficiency frontier for reading ability (dashed line in Figure 5a), while these three states along with West Bengal and Punjab define the subsidy efficiency frontier for arithmetic ability (dashed line in Figure 5b). In the provision of health services, we find that Bihar, Maharashtra and Kerala lie on the health subsidy efficiency frontier both in

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Figure 6a: Infant Mortality Rate and Per Capita Health Subsidy in 2011–12

IMR 2011–12 = 70.99121 (-) 0.0685246 (Per Capita Health Subsidy 2011–12)* + ϵ_7 (R squared = 0.4743)

* Significant at 1% level; ε is error; State codes: same as Figure 2

Figure 6b: Life Expectancy at Birth 2009–13 and Per Capita Health Subsidy in 2011–12



* Significant at 1% level; ε is error; State codes: same as Figure 2.

The states cited above include both low- and high-income states as well as low and high subsidy-incidence states. What they have in common, especially Kerala and Bihar, and to a lesser extent Andhra Pradesh (undivided), Maharashtra and West Bengal, is that they are efficient in the use of subsidies.

Non-merit Subsidies, Fiscal Space and Inclusive Growth

In the context of the India's sharp growth deceleration, we have recently argued (Mundle 2019; Mundle and Sikdar 2019), as have others, that the deceleration is being driven by the collapse of aggregate demand. Hence, growth revival in the short run will require substantial income support, especially for poor households with a high propensity to consume, which would have a high multiplier effect, buying time for structural reforms, which can take India back to a higher growth path sustainable in the longer term.

Such income support would entail substantially higher public expenditure. However, such additional expenditure cannot be financed through larger deficits because the economy is already under considerable fiscal stress. The total public sector borrowing requirement for central and state governments plus public enterprises is running in an excess of 9% of GDP (Chenoy 2019). This large preemption of loanable funds for low or zero risk loans has resulted in high yields for government bonds. Hence, the need for a strategy of deep fiscal reforms to finance such additional expenditure without recourse to either higher deficits or higher rates of taxation.

The standard argument against any major increase in public spending is that there is no fiscal space. But, this is so only in a "business-as-usual" scenario. Deep fiscal reforms can free up considerable fiscal space, which can be used to finance a large volume of additional public spending. On the revenue side, this would have three main components: non-merit subsidies, tax expenditures and savings from excess appropriations.

The estimates presented above indicate that unwarranted non-merit subsidies, with no public interest rationale for under-recovery of costs, amounts to over 5.7% of GDP (Appendix Table A2.1). Even if half of these could be rolled back, such rationalisation of subsidies could free up additional fiscal space. However, it is important to recall that the bulk of these non-merit subsidies, over 4.1% of GDP, is actually being provided by the states. Hence, the rationalisation would have to be undertaken not just by the central government, but also, indeed, more so by the states.

Second, there is a large volume of revenue being foregone in the form of tax exemptions and concessions, for both direct as well as indirect taxes. This amounts to around 5% of GDP, as reported in Annexure 7 of the 2019–20 central government receipts budget (GoI 2019). This is a lower bound estimate. There would also be exemptions and concessions from state taxes that have not been included in the reckoning.

Further, the Comptroller and Auditor General of India in a report on central government accounts earlier this year has revealed that there are savings in central government expenditure to the tune of 1.5% of GDP, which have been appropriated for spending in the budget approved by Parliament, but not actually spent. Again, this is a lower bound estimate because it only includes excess appropriations of the central government. There could be similar excess appropriations of state governments that have not been accounted for.

Thus, taken together the potential for additional fiscal space through rationalisation of non-merit subsidies, reduction of tax exemptions and concessions and greater efficiency in public spending is an enormous 12.2% of GDP. Even this is a lower bound estimate, as we have not included in it the tax concessions and exemptions or excess appropriations of state governments. But, it would be unrealistic to assume that this entire additional fiscal space could actually be released. Perhaps, it may not even be desirable in case of some tax concessions. Let us assume, conservatively, that if the government could commit itself to a bold programme of deep fiscal reforms, it could free up only about half of this potential extra fiscal space. Even that would amount to over 6% of GDP or close to the entire fiscal deficit of the central and state governments taken together.

It should be emphasised that all the three components discussed above are savings of revenue leakage in the form of flows and not stocks. They are not a one-time provision of fiscal space as, for example, is the case with the sale of public sector

terms of infant mortality as well as life expectancy (dashed lines in Figures 6a and 6b).

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equity. Instead, they free up a permanent flow of additional fiscal space. It is important to emphasise this because only such a fiscal space can be used to finance additional expenditures, which are in the nature of recurring, long-term expenditure commitments without causing any additional fiscal stress.

The question now arises: How best can this extra fiscal space be used to quickly step up demand in the macroeconomic system, thereby reviving India's faltering growth?

As explained earlier, such a programme should aim to quickly put more money in the hands of consumers, especially poor consumers with a high marginal propensity to consume, and revive growth in the short run. This would buy time for the effects of more demanding structural reforms to kick in and sustain growth over the long term. The expenditure package of such an inclusive growth revival strategy would have three main components:

(i) An income support programme. Ghatak and Muralidharan (2019) have made a compelling case for extending the PM-KISAN programme to all citizens without any targeting. They have estimated that such an expansion, which they call the Inclusive Growth Dividend (IGC), at the rate of ₹6,000 per head per year, would cost about 1% of gdp. Doubling the IGC income support to ₹12,000 per year, or ₹1,000 per month, would raise the cost of the programme to 2% of GDP. Earmarked at that level, the assistance per head would grow in proportion to GDP without any additional fiscal pressure. Note that this would be in addition to any existing income support programmes for specific target groups such as MGNREGA, scholarships, old age pensions, etc, and not a substitute for them. Further, it may be considered unpalatable in principle or politically inappropriate for such support to be made available for the rich, however insignificant it may be fiscally. In that case, instead of a positively targeted inclusion list, with all its challenges of identification, leakage, etc, it would be better to have a transparent negative exclusion list that cannot be easily manipulated, that is, exclude all income taxpayers.

(ii) The second component would be education and health services, both of which are highly underfunded in India. Each of these could be provided additional funding amounting to 1% of GDP. In education, this could be used to scale up the "teaching at the right level" programme, which has proved to be very effective in improving learning outcomes in several state-level experiments. In health, the additional allocation could be used to strengthen the 1,50,000 or so health and wellness centres, the erstwhile primary healthcare centres, which have remained the fragile backbone of India's healthcare system despite their recent makeover.

(iii) Despite the present government's emphasis on infrastructure, the infrastructure deficit still remains a major bottleneck in India. An extra allocation of 1% of GDP could be set aside for stepping up investments in road infrastructure, especially the Pradhan Mantri Gram Sadak Yojana rural roads programme, which has been one of India's most successful employment-intensive infrastructure programmes ever since it was first introduced by former Prime Minister Atal Bihari Vajpayee.

The above three components would together use up the extra fiscal space to the tune of 5% of GDP. The balance 1% of GDP could be used to reduce the fiscal deficit. Thus, the deep fiscal reforms outlined here would quickly revive growth through an inclusive expenditure strategy. It can be accomplished without any additional hike in tax rates, and it would actually reduce the fiscal deficit. However, such fiscal reforms cannot be rolled out overnight. Even if launched immediately with determination, it could probably only be fully rolled out

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by the end of the current financial year, and its full impact would be felt only by the end of financial year 2019–20.

Conclusions

In an economy chronically under fiscal stress, the rationalisation of subsidies has always remained an important but unfulfilled goal of fiscal policy. Replicating the original Mundle– Rao (1991) estimate of budget subsidies, defined as unrecovered cost of economic and social services provided by the central and state governments, we find that the incidence of subsidies has declined from about 12.9% in 1987–88 to 10.3% at present. This is consistent with cross-section analysis across states, which show that the incidence of subsidies is inversely related to state's per capita income. The bulk of

NOTES

- 1 See Indian Public Finance Statistics (IPFS) 2016–17, page 14.
- 2 IPFS 2016–17, page 16.
- 3 At present the total PSBR, including the central and state governments and public sector undertakings, is estimated to be over 9% of GDP. See, among others, Sajjid Chinoy (2019).
- 4 S Mundle and M G Rao (1991). These estimates covered the central government and 14 major states (now 18 states, following the division of four states) accounting for 93% of the population.
- 5 See Srivastava et al (1997), Srivastava and H K Amarnath (2001), Srivastava et al (2003) and Kumar et al (2004).
- 6 Mundle–Rao (1991) had provided the original subsidy estimates for the year 1987–88. However, the present estimate of subsidy incidence for 1987–88 at 12.9% of GDP is not strictly comparable to the original Mundle–Rao estimate of 14.4% of GDP. This is mainly because the GDP series used here, with bases 2004–05 and 2011–12, are different from the GDP series used in Mundle–Rao (1991). It is also because there are some small differences (less than 1%) in a few absolute estimates at the 9-digit sub-minor head. Records are no longer available at that level of granularity about how some ambiguous items were classified 25 years ago.
- 7 In a recent paper, Mohanty and Bhanumurthy (2018) have used a form of the frontier production function to relate an index of governance, measured as public service delivery, to public expenditure to define an efficiency boundary and used that boundary to assess governance efficiency. There may be a specification problem in the paper if public expenditure is also embedded in some form in the governance quality index. This requires further scrutiny. But, their approach is interesting and worth exploring in the context of subsidies for individual services.
- 8 EDI 2011–12 is a Composite Educational Development Index for All Schools and All Managements, based on U-DISE data, collected from Elementary Education in India: Progress towards UEE, Flash Statistics, National University of Education Planning and Administration (NUEPA), 2013, page 43.
- 9 Annual Survey of Education (Rural), various annual reports.
- 10 Here, we have attempted to identify by inspection the states that define the subsidy efficiency frontier in the delivery of different public services. It should be emphasised that the discussion here is purely illustrative and exploratory.

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Appendix Table A1: Ratio of Subsidy to GSDP/GDP

Social Sector Economic Sector Economic and Social Sector State 1987-88 2015-16 1987-88 1987-88 2011-12 2011-12 2015-16 2011-12 2015-16 (1) (2) (3) (4) (5) (6) (7) (8) (9) Andhra Pradesh (Telangana) 5.84 3 9 5 4.84 4.15 4.61 4.75 9 99 8.56 9.59 11.23 Bihar (includes Jharkhand) 7.79 5.63 5.96 7.48 5.79 5.27 15.27 11.42 5.05 4.21 3.93 4.66 2.55 9.71 6.76 7.14 Gujarat 3.21 3.36 3.55 5.84 3 98 4 4 5 2 4 9 2 96 8.43 6.52 Haryana Karnataka 5.57 3.95 4.28 4.23 4.43 4.24 9.8 8.38 8.52 Kerala 1.99 8.81 5.96 3.93 4.52 2.85 2.1 6.03 6.51 Madhya Pradesh (includes Chhattisgarh) 6.54 5.19 6.72 4.79 4.57 5.11 11.34 9.75 11.82 Maharashtra 4.19 3.84 3.51 2.3 3 3.03 6.5 6.83 6.55 9.83 Odisha 5.3 4.71 5.67 4.82 4.03 4.17 10.12 8.74 5.3 Punjab 3.98 3.13 3.31 4.79 2.44 1.99 8.77 5.57 5.76 5.96 6.23 2.29 3.09 11.99 7.67 9.05 Rajasthan 5.38 Tamil Nadu 1.79 8.78 4.24 3.31 3.27 4.54 2.29 5.6 5.06 Uttar Pradesh 8.77 10.01 (includes Uttarakhand) 4 35 5.18 5 98 4.42 4 82 571 117 West Bengal*** 2.9 2.03 2.24 7.33 5.72 4.43 4.62 3.49 6.64 All states* 4.4 3.83 4.09 3.66 3.08 3.26 8.06 6.91 7.35 2.82 2.54 2.93 Centre* 0.65 0.94 0.39 4 22 4 87 3 76 All states + centre* 4.77 4.48 7.88 5.9 5.8 12.93 10.67 10.28 All states' average** 5.21 4.31 4.64 4.47 3.39 3.54 9.69 7.7 8.18

GSDP for 2011–12 and 2015–16 are at current prices in 2011–12 NAS series; whereas GSDP for 1987–88 are at current prices in 2004–05 NAS series.

*These numbers are percentage of GDP. ** All states' averages are the average as percentage of GSDP. ***West Bengal's GSDP for 2015–16 are collected from State Budget Speech, and 2011–12 GSDP is at current prices in 2004–05 NAS series.

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budget subsidies are provided by the states and about half of it is spent on non-merit subsidies.

We also find that subsidies are important determinants of the consumption of many public services, though not all. Further, there are large variations across states in the efficiency of subsidy use, and we have identified the states that are at the subsidy efficiency frontier for several key public services. Finally, we have argued that rationalising non-merit subsidies is only one of the several possible measures of deep fiscal reforms that could free up massive fiscal space, conservatively estimated at 6% of GDP. We have outlined a proposal for using this fiscal space to launch an inclusive strategy that could revive growth without raising tax rates and actually reducing the fiscal deficit.

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(% of GSDP*)

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Appendix Table A2.1: D	istribu	ition o	f Meri	t and N	lon-me	erit Sul	bsidies	s in So	cial an	d Econ	omic S	ector							(9	% to GSE)P/GDP
State	Merit Subsidies							Non-Merit Subsidies					Total Subsidies								
	S	ocial Sec	tor Economic Sector			S	ocial Sec	tor	Economic Sector			Social Sector			Economic Sector			Total			
	1987-	1911-	1915-	1987-	1911-	1915-	1987-	1911-	1915-	1987-	1911-	1915-	1987-	1911-	1915-	1987-	1911-	1915-	1987-	1911-	1915-
	88	(2)	(3)	88	(5)	16	88	(8)	16 (q)	88	(11)	(12)	88 (13)	12	(15)	88	(17)	16 (18)	88 (19)	(20)	16 (21)
Andhra Pradesh (Telangana)	3.8	2.8	3.3	0.1	0.1	0.1	2	1.2	1.5	4	4.5	4.7	5.8	4	4.8	4.1	4.6	4.7	10	8.6	9.6
Bihar (includes Jharkhand)	6	4.2	4.4	0.3	0.1	0.2	1.8	1.4	1.5	7.2	5.7	5	7.8	5.6	6	7.5	5.8	5.3	15.3	11.4	11.2
Gujarat	4.1	3.3	3.2	0.1	0.1	0.1	1	0.9	0.7	4.6	2.5	3.1	5.1	4.2	3.9	4.7	2.6	3.2	9.7	6.8	7.1
Haryana	3.1	2.5	2.8	0.1	0.1	0.1	0.9	0.8	0.8	4.4	2.3	2.9	4	3.4	3.6	4.4	2.5	3	8.4	5.8	6.5
Karnataka	4	2.7	2.8	0.1	0.2	0.4	1.6	1.3	1.5	4.1	4.2	3.9	5.6	3.9	4.3	4.2	4.4	4.2	9.8	8.4	8.5
Kerala	4.7	2.9	2.8	0.2	0.3	0.3	1.3	1	1.7	2.7	1.8	1.7	6	3.9	4.5	2.9	2.1	2	8.8	6	6.5
Madhya Pradesh (includes Chhattisgarh)	4.9	4.1	4.8	0.2	0.2	1	1.7	1.1	1.9	4.6	4.4	4.1	6.5	5.2	6.7	4.8	4.6	5.1	11.3	9.8	11.8
Maharashtra	3.5	3	2.7	0.2	0.1	0.1	0.7	0.9	0.8	2.1	2.9	2.9	4.2	3.8	3.5	2.3	3	3	6.5	6.8	6.5
Odisha	3.8	3.4	4.5	0.2	0.5	0.5	1.5	1.3	1.1	4.7	3.6	3.7	5.3	4.7	5.7	4.8	4	4.2	10.1	8.7	9.8
Punjab	3.2	2.7	2.7	0.1	0	0.1	0.8	0.5	0.6	4.7	2.4	1.9	4	3.1	3.3	4.8	2.4	2	8.8	5.6	5.3
Rajasthan	4.9	4.8	5.1	0	0	0	0.9	0.6	0.8	6.2	2.2	3.1	5.8	5.4	6	6.2	2.3	3.1	12	7.7	9.1
Tamil Nadu	3.4	2.7	2.7	0.3	0.1	0.1	0.8	0.6	0.6	4.2	2.2	1.7	4.2	3.3	3.3	4.5	2.3	1.8	8.8	5.6	5.1
Uttar Pradesh (includes Uttarakhand)	3.4	4.4	4.3	0.2	0.3	0.2	0.9	0.8	1.7	4.3	4.5	5.5	4.4	5.2	6	4.4	4.8	5.7	8.8	10	11.7
West Bengal***	3.5	3.9	2.5	0.2	0.1	0.1	0.9	0.7	1	2.7	1.9	2.2	4.4	4.6	3.5	2.9	2	2.2	7.3	6.6	5.7
All states*	3.4	3	3	0.1	0.1	0.2	1	0.8	1	3.5	2.9	3.1	4.4	3.8	4.1	3.7	3.1	3.3	8.1	6.9	7.3
Centre*	0.3	0.9	0.2	0.7	1.5	1.1	0.3	0.1	0.2	3.5	1.3	1.4	0.7	0.9	0.4	4.2	2.8	2.5	4.9	3.8	2.9
All states + centre*	3.7	3.9	3.2	0.9	1.6	1.3	1.3	0.9	1.2	7	4.3	4.5	5	4.8	4.5	7.9	5.9	5.8	12.9	10.7	10.3
All states' average**	4	3.4	3.5	0.2	0.2	0.2	1.2	0.9	1.2	4.3	3.2	3.3	5.2	4.3	4.6	4.5	3.4	3.5	9.7	7.7	8.2

GSDP for 2011–12 and 2015–16 are at current prices in 2011–12 NAS series; whereas GSDP for 1987–88 are at current prices in 2004–05 NAS series.

* These numbers are percentage of GDP.

** All states' averages are the average as percentage of GSDP.

*** West Bengal's GSDP for 2015–16 are collected from State Budget Speech, and 2011–12 GSDP is at current prices in 2004–05 NAS series.

Appendix Table A.2.2: Shares of Merit Subsidies

State Merit Subsidies Total Merit **Elementary Education** Secondary Education Health Water Supply, Sanitation, Food Housing and Urban Development 1987-88 1911-12 1915-16 1987-88 1911-12 1915-16 1987-88 1911-12 1915-16 1987-88 1911-12 1915-16 1987-88 1911-12 1915-16 (1) (3) (4) (5) (7) (8) (9) (10) (11) (12) (13) (14) (15) (16) (17) (18) (2) (6) Andhra Pradesh (Telangana) 1.36 0.81 0.87 0.81 0.73 0.86 0.98 0.67 0.73 0.70 0.57 0.84 0.10 0.06 0.08 3.94 2.84 3.38 Bihar (includes 0.98 0.77 0.25 0.07 Jharkhand) 2 99 2.09 2.49 1.03 0 57 0.48 1.16 0.71 0.81 0.49 0.24 6.21 4 2 5 4.68 0.70 Gujarat 1.47 1.12 1.04 0.95 0.52 0.41 0.44 0.55 0.94 1.21 1.19 0.08 0.05 0.09 4.13 3.34 3 28 0.91 Haryana 0.90 0.83 0.90 0 57 0.48 0.67 0.41 0.50 0.60 074 0.91 0.08 0.14 0.11 3.15 2 68 2 91 Karnataka 1.59 0.99 0.86 0.89 0.59 0.48 0.99 0.53 0.50 0.55 0.58 0.94 0.09 0.23 0.36 4.11 2.92 3.14 Kerala 1.96 1.03 0.88 1.07 0.94 0.92 1.00 0.71 0.74 0.64 0.25 0.25 0.16 0.34 0.33 4.82 3.27 3.13 Madhya Pradesh 0.85 5.85 (includes Chhattisgarh) 1.78 1.72 1.82 0.71 0.77 0.92 1.14 0.76 1.00 1.25 1.10 0.20 0.19 1.02 5.08 4.29 Maharashtra 1.11 1.08 0.99 0.92 0.89 0.80 0.75 0.39 0.45 0.74 0.60 0.48 0.17 0.11 0.11 3.69 3.09 2.83 Odisha 1.49 0.90 0.97 4.98 1.57 1.64 0.62 0.72 0.79 0.58 0.76 0.62 1.12 0.16 0.48 0.45 4.00 3.89 Punjab 0.84 0.46 0.62 1.19 1.31 1.23 0.80 0.56 0.63 0.39 0.32 0.24 0.12 0.02 0.09 3.34 2.68 2.81 5.17 Rajasthan 1.67 1.57 153 1 07 0.84 1.27 1.06 0.77 1.03 1.09 1.58 1.30 0.04 0.04 0.04 4 94 4 80 Tamil Nadu 1.12 0.90 0.56 0.58 0.48 0.50 0.33 0.09 3.74 0.80 0.76 0.82 0.78 0.81 0.63 0.09 2.76 2.76 Uttar Pradesh 0.16 0.18 (includes Uttarakhand) 2.03 2 04 0.88 0.99 0.68 0.96 0.94 1 04 0.46 0 54 0.29 471 4 4 9 1.18 0.42 3 60 West Bengal*** 1.04 1.05 0.75 1.28 1.01 0.86 0.67 0.88 0.05 0.23 0.08 0.06 3.76 2.53 1.03 0.68 0.60 3.98 All states* 1.09 1.22 0.81 0.70 0.79 0 5 5 3.23 1.08 0.74 0.64 0.61 0.62 0.62 0.14 0.13 0.19 3.56 3.14 Centre* 0.02 0.32 0.01 0.10 0.09 0.05 0.10 0.22 0.10 0.09 0.24 0.05 0.75 1.48 1.12 1.07 2.35 1.32 0.70 All India* 1.41 1.08 0.91 0.74 0.77 0.74 0.86 0.89 4.55 1.24 0.83 0.89 0.67 1.61 1.31 4.63 5.49 All states' average 1.47 1.22 1.23 0.92 0.82 0.79 0.91 0.62 0.74 0.72 0.71 0.71 0.15 0.16 0.23 4.18 3.54 3.71

GSDP for 2011–12 and 2015–16 are at current prices in 2011–12 NAS series; whereas GSDP for 1987–88 are at current prices in 2004–05 NAS series.

* These numbers are percentage of GDP.

** All states' averages are the average as percentage of GSDP.

*** West Bengal's GSDP for 2015–16 are collected from State Budget Speech, and 2011–12 GSDP is at current prices in 2004–05 NAS series.

(% to GSDP/GDP)