Measurement Issues in Comparing Fiscal Performance of States

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Abstract

[Interstate comparison of fiscal performance requires use of appropriate concepts and proper measurement of state income, fiscal deficit and debt. GSDP at market prices and a comprehensive concept of debt consistent with the fiscal deficit of a state government are the right concepts to use for the purpose. The rating agencies and the Finance Commissions have not used the right concepts so far. Illustrative estimates for Gujarat show that it can lead to misleading target setting and wrong perceptions about the fiscal performance of the states. CSO, RBI and the rating agencies have to ensure that right concepts are used in interstate comparison.]

Of late the Finance Ministry (2001, 2002) as well as the Finance Commission (2000) have recognized the need to provide incentives to the states for their fiscal performance and discipline. Any effort in this direction necessarily brings to the fore the question of comparing different states on some well-defined criteria. Out of several indicators of the fiscal performance, fiscal deficit is widely accepted as very comprehensive measure of the fiscal discipline of the government. Since the absolute magnitude of the fiscal deficit depends directly on the size of the state and the nature of the economy, it is invariably considered as a proportion of the income produced in the system. That is how the international fund providers like the Asian Development Bank (ADB) stipulate conditions in terms of achieving the fiscal deficit as a certain percentage of the state income over time to reflect fiscal health of the state economy. Another related aspect of the fiscal performance is the burden of the public debt on the state economy. Again, the absolute magnitude is often misleading because it depends on the size of the economy and its rate of growth over time. Moreover, the amount of public

debt and the fiscal deficit are closely related as borrowings represent a pre-dominant source of financing the deficit in the budget. Public debt is, therefore, also considered as a percentage of the state income to reflect the overall fiscal health of the economy. We can see that there are three important aggregates, *viz.* state income, fiscal deficit and public debt, involved in comparing the fiscal performance of different state economies. Proper concepts and their uniform measurement are the preconditions for attempting any such comparisons. The following sections discuss several issues in the measurement of each of these aggregates providing some illustrative estimates for the Gujarat state.

II. State Income

There are two basic concepts of income of a regional unit. We can consider either the income accruing to the residents of the state or the income produced within a geographical boundary of the state. The former is closely akin to the concept of Gross National Product (GNP) whereas the latter corresponds to the concept of Gross Domestic Product (GDP) at the national level. The Committee on Regional Accounts (1976) clearly recognized that it was practically impossible to capture all cross-border transactions at the state level, given the openness of the state economies and the existing statistical network in the nation. The Committee had, therefore, recommended the use of the income originating at the state level. For similar reasons, it was felt that reliable estimates of exports and imports of a state could not be prepared. The Committee, therefore, recommended estimation of the State Domestic Product (SDP) only at factor cost. However, considering the economic environment and the consequent emerging needs, the National Statistical Commission (August, 2001)

recommends estimation of (national) exports originating at the state level. With only a little additional effort we can generate estimates of (national) imports to a state[1]. Thus, it should be possible to measure SDP at market prices consistent with the national estimates.

Currently, all the State Directorates of Economics and Statistics (SEDSs) are preparing the estimates of Gross SDP (GSDP) and Net SDP (NSDP) at the current and constant factor cost. The same at the market prices are simply not attempted. Thus, the state accounts statistics remain incomplete and partial. Yet, with growing need for using the state accounts statistics for various purposes like measuring the growth performance, growth potential, savings and investment rates, fiscal performance and discipline, etc., indiscriminate use of only the available estimates of NSDP or GSDP at factor cost is made without any apologies. Instances of these are too numerous to quote, but responsible and respectable bodies like, Reserve Bank of India (RBI), Finance Commissions, state finance ministries, Asian Development Bank, etc. have been using such inappropriate measures even without mentioning or recognizing their limitations for the purposes at hand. For instance, although at the national level, the fiscal deficit or the public debt are always expressed as a percentage of GDP at market prices, it is a common practice without any reasonable justification to express these aggregates as a percentage of GSDP (or in some cases, NSDP!!) at factor cost. Use of such an inappropriate measure can be justified only if the percentage difference between NSDP and GSDP at the factor cost and at the market prices is assumed to remain constant across the states and over time within a state. These assumptions are obviously not valid particularly during a rapidly changing economic environment.

It is widely recognized that some state economies, like Gujarat, have performed remarkably better than the others during the period of economic reforms since 1991-92 (see, Ahluwalia, 2000). Moreover, it is also shown that there is a significant upward shift in the trend rate of growth in the manufacturing and some tertiary sectors of the economy of Gujarat (see, Dholakia, 2000). In order to illustrate the extent of error involved in using different measures of state income, we have, therefore, considered the case of Gujarat economy during the nineties.

The estimates of GSDP at current market prices can be derived from the GSDP at current factor cost by adding all indirect taxes and subtracting the subsidies affecting the prices in the market. For a state economy, the estimates of all indirect taxes are not readily available although the state level indirect taxes and subsidies are invariably estimated in official annual publications like *An Economic and Purpose Classification of Budget, Statistics of Municipal Towns and Cities,* etc. The state indirect taxes include state excise duty, taxes on vehicles, sales tax, entertainment tax, electricity duty, stamp duty & registration, taxes on goods and passengers, and tax on accommodation in hotels & lodges. Similarly, local indirect taxes include octroi in municipal corporations, municipalities, panchayats and the cess on octroi in district panchayats. The SDES can easily obtain these data at the state level since the information exists in the system under their network.

The real problem can arise in the case of two central taxes, *viz.* central excise and custom duty. The state's share received from the Centre in these taxes is based on *ad hoc* allocation and, therefore, does not reflect the true incidence of these taxes on the state economy. Some direct estimation of these taxes collected from the state is

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necessary. By aggregating the central excise revenue realized (net of excise drawbacks) by all the excise commissionerate located in Gujarat, the central excise tax generated from Gujarat can be estimated for different years. The weakest element in the exercise is the estimate of the customs duty paid by the units working in Gujarat. We can get the customs revenue realized by various customs houses, customs commissionerates and excise commissionerates located within the state. However, it is not necessary that all the revenue they collect be raised from the units working in Gujarat. Similarly, a substantial proportion of the customs revenue realized in the locations outside Gujarat, like Mumbai and Sahar, may be paid by the units working in Gujarat. Since the disaggregated data on customs revenue by the origin of the importers is currently not available readily, we have assumed for our illustrative purpose here that the customs revenue paid by the units working in Gujarat at the outside locations (like Mumbai, Sahar, etc.) is equal to the customs revenue paid by units working outside Gujarat at the locations within Gujarat (like Kandla and Ahmedabad airport). This is a conservative assumption for Gujarat since the former is likely to be substantially greater than the latter as per the opinion of experts.[2] *Table 1* presents our estimates of the GSDP at market prices in three years for Gujarat derived on the above-stated conservative assumption. *Table 2* provides the extent of relationship among different concepts of state incomes over the nineties in Gujarat.

No.	Components	1990-91	1995-96	1999-2000
	Table 1: Estimates of GSDP at current Market Prices in Gujarat During the Nineties (Rs. Crores)			
1	NSDP at current Factor Cost	26259	61736	89606
2	GSDP at current Factor Cost	30521	71886	106427
3	Net Central Excise	2653	4920	8865
4	Customs Revenue	1472	4763	7606
5	State Indirect Taxes	2376	5141	7823
6	Octroi	249	612	872
7	Subsidies	407	947	1550
8	GSDP at current Market Prices*	36864	86375	130043

*(8) = (2)+(3)+(4)+(5)+(6)-(7)
Source: Directorate of Economics and Statistics, Govt. of Guj, (June 2002); (Feb., 2002); (2001); (1995) and Excise Commissionerates and Customs Houses.

Table 2: Extent of Relationship Among Different Concepts of State Income in Gujarat During the Nineties			
Ratios	1990-91	1995-96	1999-2000
GSDP at F.C. NSDP at F.C.	1.162 (1.116)	1.164 (1.123)	1.188 (1.116)
GSDP at M.P. NSDP at F.C.	1.404 (1.242)	1.399 (1.244)	1.451 (1.227)
GSDP at M.P. GSDP at F.C.	1.208 (1.113)	1.202 (1.107)	1.222 (1.099)
Note: Figures in parentheses are the ratios at the national level			
Source: Table 1 above			

From these tables, it can be readily observed that the ratio between different concepts of income varies over time at both the state level and the national level. The extent of variation, however, is less at the national level than at the state level. This is because the national ratios represent average of all states and different states may have offsetting variations in these ratios over time. Moreover, the table also clearly reveals that even the direction of changes in these ratios of different concepts of income

may not be the same at the state level and the national level. Thus, the behaviour of these ratios can significantly vary across states over a relatively short period of time. Therefore, the comparison of states both at a point of time and over a period of time is likely to be highly sensitive to the concept of state income used for the purpose.

To illustrate this point, let us consider the fiscal deficit of Rs. 6900 crores in Gujarat in the year 1999-2000. If we take it as a percentage of NSDP at factor cost as per the practice of the state government (and insisted by ADB!) it works out at 7.7%. However, when we consider it as a percentage of the right concept of GSDP at market prices, it is only 5.3%. This happens because, in Gujarat, the GSDP at market prices is at least 45% higher than the NSDP at factor cost. This, in turn, is due to the structural differences between the Gujarat economy and other state economies. In this context, it is interesting to note that Gujarat contributed at least Rs. 16,471 crores in terms of the central indirect taxes (*i.e.* excise and customs), but received only Rs. 995 crores or 6% back as its share in the indirect taxes from the Centre in 1999-2000[3]. Such a gross inequity and anomaly in the distribution and allocation arise because of the wrong measurements of economic activities and consequent needs of the state economies. Since the share in central taxes received by the state represents revenue receipt, such an inadequate and iniquitous transfer adversely affects the revenue deficit in the state budget. Similarly, the size of the government often measured as a proportion of the government expenditure in the state income also get highly overstated under the present practices compared to the true level. In short, the use of the wrong concept of state income distorts the whole assessment of the fiscal performance of a state. In fact,

the present wrong practice provides strong disincentives to the more needy and better performers and unjustifiable incentives to the less needy and poor performers.

III. Fiscal Deficit

The Government of Gujarat (GOG) like several other state governments, currently calculates the Fiscal Deficit (F.D.) as:

$F.D._{GOG}$ = Revenue Deficit + Total Capital Expenditure

- Recovery of Loans & Advances

- Repayment of Public Debt - Other Expenditure on Capital A/c.

All the items are obtainable readily from different tables from *Budget in Brief – Analytical Summary.* However, the RBI definition of the Fiscal Deficit differs from the GOG definition because:

$F.D._{RBI}$= Net Borrowing from Centre + Net Internal Borrowing + Net

Contingency Flow + Net Public Account Flow + Overall Deficit

The difference between the two definitions can be expressed as follows:

$F.D._{GOG}$ – $F.D._{RBI}$ = Other Receipts on Capital A/c. – Other Expenditure on

Capital Account

It should be noted that the other expenditure on capital account is largely expenditures incurred for closure or privatization whereas the other receipts on capital account largely constitute the gross privatization proceeds. Both the entries can be clubbed together as the Net Receipts on Capital Account, which would represent Net Privatization proceeds. GOG does not consider rightly these privatization receipts for calculating its Fiscal Deficit whereas RBI does as per the prevalent practice at the Central Government level.

For consistency and comparability, it is necessary that the same definition be followed for all the states and the centre.

Now, the gross fiscal deficit (GFD) can be either debt-financed (DFD) or money-financed (MFD). The Ways and Means Advances from RBI to the Gujarat Government are nil for the period under consideration. The only way of money financing the deficit for Gujarat Government is to run down its cash balances. The remaining part of the fiscal deficit has to be debt-financed. All this information is readily available from the state's *Finance Accounts*. *Table 3* provides the composition of gross fiscal deficit in Gujarat over the period 1995-96 to 1999-2000.

Table 3: Debt Financed and Money Financed Deficit in Gujarat					
					(Rs. in Crores)
Year	GFD	DFD	MFD	Interest Payment	Primary Deficit (PD)
1	2	3	4	5	6
1995-96	1756	1808	(-) 52	1328	428
1996-97	2351	2363	(-) 12	1610	741
1997-98	2934	3235	(-) 301	1884	1050
1998-99	5768	5475	293	2262	3506
1999-00	6900	6900	0	2808	4092
Note: GFD = Gross Fiscal Deficit & DFD = Debt Financed Deficit *Source:* CAG: *Finance Accounts*, various issues					

It is interesting to note that the DFD in Gujarat is continuously rising in absolute terms during 1995-96 to 1999-2000, but the MFD, which essentially represents changes in the state government's cash balance, keeps fluctuating. In fact, in the last two years, *i.e.* 2000-01 and 2001-02, it has risen to the level of 14% of the fiscal deficit in the state. To the extent to which the deficit is money-financed, the state is saved from adding to its public debt. However, there is a limit to the state's ability to run down its cash

balances which puts effective constraints on the state's ability to run fiscal deficit. The well-known framework to derive the estimate of the sustainable deficit uses all these concepts. We begin with the Debt-income ratio (D/Y) where both the numerator and the denominator are measured at the market prices. Then,

$$\Delta [D/Y] = (Y (\Delta D) - D (\Delta Y)) / Y^2$$

$$= (\Delta D) / Y - (D/Y) G_y$$

But ΔD = DFD = FD – MFD = Interest + PD – MFD

Therefore, $\Delta (D/Y)$ = Interest/Y + (PD – MFD)/Y – (D/Y) G_y

But, Interest Payment = i.D

Therefore, $\Delta (D/Y)$ = (D/Y) (i-G_Y) + (PD – MFD) / Y ----------(1)

This is a famous result, but several users inadvertently ignore the adjustment of the primary deficit by the money-financed deficit. It is, however, important in calculating the substainable fiscal deficit in an economy. The other important parameter is the debt-income ratio (D/Y) and its measurement is also far from satisfactory at the state level.

IV. Public Debt

Unfortunately there is no agreement among different bodies on the definition of the public debt at the state level. The definition used by the state governments differs substantially from RBI which, in turn, differs considerably from the concept used in the *Discussion Paper on Subsidies*, i.e. DPS (1997). The Eleventh Finance Commission (2000) uses none of these definitions but has its own definition. Since the ultimate source of all these definitions is the same, viz. *Finance Accounts* of the state government, we can review the exact differences in these alternative definitions by

considering the principal sources of funds given there. They are: (i) Public Debt which includes: (a) Internal Debt from the State Government, and (b) Loans & Advances from the Central Government; (ii) Small Savings, Provident Funds, etc.; (iii) Contingency Fund; (iv) Reserve Funds bearing interest & not bearing interest; (v) Deposits bearing interest & not bearing interest and Advances; (vi) Suspense and Miscellaneous Receipts; and (vii) Remittances. All these together add up to the Total Debt and Other Obligations of the State Government. Deducting Cash Balances and Investments from the Total Debt and Other Obligations, the Net Provision of Funds is obtained.

The Gujarat Government defines its public debt by considering only item (i) above. RBI defines the debt of the State Government by considering items (i) and (ii) above. The national *Discussion Paper on Subsidies, i.e. DPS* (1997) based on the NIPFP Study has taken the debt of the State Government by considering items (i), (ii) and interest bearing components of (iv) and (v) above for calculating the capital costs. The Eleventh Finance Commission considers (i), (ii), (iv) and (v) besides the Ways and Means Advances from RBI to calculate Total Debt of state governments (See Annex XI.1 and XI.2 in its Report). It is interesting to note that none of these definitions are completely consistent with the actual measurement of the fiscal deficit and its financing. As seen above, the fiscal deficit can be either debt-financed (i.e. DFD) or money-financed (i.e. MFD). Therefore, the stock of debt as per the above-stated framework should be so defined that a change in the debt over a year exactly corresponds to the DFD component of the fiscal deficit. Considering this consistency requirement, the debt of a state government should be measured as the Total Debt and Other Obligations, i.e. the total of items (i) to (vii) of the sources of funds in Finance Accounts *less* the Cash

Balances at any point in time. This is precisely the definition of debt recommended by the State Public Finance Reform Committee (SPFRC) appointed by the Government of Gujarat in its report (see, Shroff, Dholakia, et. al., 2000, Appendix 1). *Table 4* provides the estimates of the debt of the Gujarat Government for the past few years according to these four alternative definitions.

Table 4: Debt of Gujarat Government According to Alternative Definitions (Rs. in Crores)				
31st March, Year	GOG	RBI	DPS	SPFRC
1	2	3	4	5
1995	9183	9667	11958	12475
1996	10485	11128	13277	14283
1997	11976	12784	15191	16646
1998	14059	15062	17415	19880
1999	17080	18562	21289	25355
2000	20851	22815	25942	32255
Note: GOG = Government of Gujarat; RBI = Reserve Bank of India; DPS = Discussion Paper on Subsidies; and SPFRC = State Public Finance Reform Committee				

Considering the interest payment of Rs.2808 crores by the Gujarat government during 1999-2000, the implicit average effective interest rates on the debt according to the four alternative measures given in *Table 4* work out to be 16.4% for *GOG*; 15.1% for RBI; 13.2% for DPS; and 11.1% for SPFRC definitions of debt. Now let us assume that the income in Gujarat would increase @ 14.5% in nominal terms over years[4]. Applying equation (1) above, we find that for the D/Y ratio to remain constant there has to be a primary *surplus* after adjusting for the MFD if we are following the Government of Gujarat or RBI definitions of the debt. However, the same condition requires a primary *deficit* after adjusting for the MFD if we are following the DPS or SPFRC definitions of

the debt. The absolute magnitude of the fiscal deficit target based on the sustainable deficit concept is also likely to differ substantially depending on which definition of the debt is used. Similarly, the concept of income used for calculating the debt-income ratio also has significant influence on the fiscal deficit target.

V. Concluding Remarks:

It is clear from our discussion so far that measurement of the key parameters at the state level is far from satisfactory. Right concepts have to be used and properly measured. Use of inappropriate concepts of income and public debt at the state level can and actually have resulted into misleading target setting and wrong perceptions about fiscal performance of states. In a democratic federal structure with considerable liberalization and freedom to attract foreign direct investments, the ratings of the economic performance of the state economies assume a considerable importance. One of the most relevant concerns of the rating agencies in this context would be the fiscal health and performance of different states in a comparative framework. It is here that the use of the right concepts and their proper measurement can make a significant difference as argued here. Improving and perfecting the statistical network and systems would not then remain an unproductive activity in the better performing states. Unfortunately, there is a strong disincentive under the present conditions for those states that perform poorly in a real sense to strengthen and improve their statistical systems in order to ensure the proper measurement of the right concepts. The ball is, therefore, in the court of the Central Statistical Organization, RBI, the Twelfth Finance Commission and the rating agencies to ensure that right concepts are used in inter-state comparisons.

Notes

1.   At the state level, exports and imports can be divided into two categories: international and domestic. The domestic exports and imports, *i.e.* transactions among states, cancel out when we take the aggregate of all states. The estimation of only the international exports and imports at the state level is, therefore, still consistent with the national level estimate of income.

2.   These experts include senior officials from the customs and excise commissionerates, Ministry of Industry and Commerce in Gujarat, Confederation of Indian Industries (Gujarat), Gujarat Chamber of Commerce and Industry, etc.

3.   It may also be noted that Gujarat contributed Rs.2390 crores in the direct tax revenue to the Centre and received Rs.670 crores or 28% from the Centre in 1999-2000.

4.   The 8th plan target for Gujarat is 10.2% p.a. in real terms. Adding an inflation rate of less than 4% p.a., the nominal income is expected to grow @ 14.5% p.a.

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