

# Estimating State Income at Market Prices in Gujarat

- *Ravindra H. Dholakia (Professor, IIM, Ahmedabad)*  
*S.V. Trivedi (Director, DES, GoG, Gandhinagar)*  
*R.J. Shah (Jt. Director, DES, GoG, Gandhinagar)*

## Abstract

[The paper provides detailed estimates of the Gross State Domestic Product (GSDP) at current market prices (m.p.) for Gujarat state for the period 1990-91 to 2000-01. It considers the estimates of GSDP at current factor cost (f.c.) and the 6 components of the indirect taxes and subsidies to derive the estimates of GSDP at m.p. These components are: (1) State indirect taxes, (2) state level subsidies, (3) octroi, (4) state's share in Central subsidies, (5) state's share in Central excise, and (6) state's share in Central customs revenues. It is found that compared to the NSDP at f.c., the GSDP at m.p. was 38% higher in 1990-91 but 44% higher in 2000-01 in Gujarat. On the other hand, at the national level, this difference has declined from 24% to 23% during the same period. For various uses of comparing fiscal performance of different state economies, the right concept to use is GSDP at m.p. and not NSDP at f.c., which is apology but apology by credit-rating agencies, RBI, Finance Commissions, etc. This leads to erroneous assessment of needs, biased perception of performance and wrong conclusions on efficiency of different state economies. It is shown in the paper that it is possible to prepare usable estimates of GSDP at m.p. with the help of the existing statistical network in the country.]

In a federal democratic structure, a state represents the second level of political and administrative unit in the regional hierarchy. The nation is fully divided into various states and union territories for administrative convenience and socio-cultural-politico considerations. While the geographical boundary of a state is important, it is invariably not as sensitive an issue as the national boundary. This is because restrictions on the movement of men and materials are either non-existent or practically much less severe between states within a nation compared to the international movement. Thus, the economy of a state is far more open than the national economy. Preparation of state accounts is therefore more challenging both in terms of concepts and practical difficulties encountered in collecting the required information. The Committee on Regional Accounts (CRA) (1974 & 1976) clearly recognised these problems. Since capturing all cross border transactions at state level was considered practically impossible under the existing statistical network in the nation, the CRA recommended the use of the concept of income originating at the state level. In statistically and economically more advanced countries like Canada and USA, however, the concept of income accruing is found more convenient for estimation at the state/province level.

The difference between income accruing and income originating within the geographical boundary of a state is the net factor income inflow from the rest of the world. The valuation of the production and hence income is not a matter of

difference between these two concepts. This is because the income accruing is more like the national product and the income originating is similar to the domestic product at the national level. Both these concepts can be measured either at factor costs or at market prices. The CRA (1976) recommended the use of income originating at factor costs for the state accounts purposes. It had, however, envisaged the necessary development of statistical network in course of time to take care of capturing the cross border flows of economic goods and services. The National Statistical Commission (NSC) (August 2001) has clearly recommended preparation of the estimates of international exports originating from a state and the cross border flow of goods and services from a state. Similarly, it has recommended estimation of the total capital formation as well as capital consumption (or the depreciation) at the state level, so as to ultimately produce the estimates of capital stock for the state economy. However, the NSC has not explicitly recommended preparation of the state income estimates at market prices. The state accounts cannot be completed unless state income estimates are also prepared at the market prices. Since the NSC has made all other recommendations necessary to complete the state accounts, it has implicitly assumed the preparation of the estimates of state income at market prices.

In the present paper we are making an attempt to estimate state income at current market prices for the state of Gujarat over the last decade. In the process we identify the problems and data gaps that need to be plugged for the purpose. In the next section, we outline the steps required in generating the estimate of state domestic product (SDP) at current market prices. In the final section, we discuss some uses and importance of these estimates at the state level.

## **II. SDP at Market Prices in Gujarat**

Currently the Directorate of Economics and Statistics (DES), Government of Gujarat has been preparing the estimates of net as well as gross SDP both at current and at constant (1993-94) prices in the state. As the estimates of SDP at market prices can be derived from the corresponding estimates at factor cost by adding the net indirect taxes in the state, we have considered the estimates of gross SDP (GSDP) at factor cost as the basis for our purpose. The net indirect taxes at the state level requires estimates of the following components:

- (i) the local level indirect taxes,
- (ii) the district level indirect taxes,
- (iii) the state level indirect taxes,
- (iv) the central level indirect taxes paid by the producers/ consumers in Gujarat,
- (v) the local & state level subsidy, and
- (vi) the central level subsidy given to the producers/ consumers in Gujarat.

The DES does not presently collect the data on the local and district level indirect taxes regularly and comprehensively. It is interesting to note in this context that the NSC (2001) has recommended the analysis of the budget data of the local bodies on similar lines as the state budget for the consumption and capital formation estimates. The DES compiles and collates budgets of municipal towns and cities for its annual publication called *Statistics of Municipal Towns and Cities*. The information contained

there, however, has a lag of minimum 3 to 4 years. For more recent data, we have to rely only on direct contacts with Gujarat Municipal Finance Board, different municipal corporations, municipalities and boroughs. These data are necessarily tentative and subject to revision at a later date. This state of affairs has to change and regular transmission of audited financial statements from all the local bodies to the DES has to be ensured if the recommendation of the NSC is implemented. At the local level, the indirect taxes in Gujarat are predominantly in the form of *octroi*. At the district and *panchayat* levels, the indirect taxes are largely in the form of *octroi* and the cess on it. The data on indirect taxes at the *panchayat* level have to be collected from the ministry of rural development and the finance department in the state government.

*Table 1* presents the estimates of the indirect taxes collected by the local bodies and *panchayats* in Gujarat over the last decade. The data are tentative and represents approximations based on ratios and extra/ intra-polation wherever the series had gaps. This was particularly in the case of *panchayats* and for non-response from a few municipalities and boroughs. However, Gujarat government has abolished *octroi* with effect from May 2001 from the municipalities, boroughs and *panchayats*. As a result, the estimation problems in this category are automatically resolved in Gujarat for the future years. The *octroi* in the 6 municipal corporations has been abolished so far in Gujarat. As can be seen from *Table 1*, it represents the dominant component in the local level indirect taxes in the state.

The second important component in our estimation procedure is the indirect taxes at the state level. These include state excise duty, taxes on vehicles, sales tax, entertainment tax, electricity duty, stamp duty and registration, taxes on goods and passengers, and tax on accommodation in hotels & lodges. The actual collection of these taxes in the state is obtainable from the *Finance Accounts* of the state for different years. The other source is the *Economic and Purpose Classification of the Budgets of the Government of Gujarat*, published annually by the DES. The same source also provides estimates of the state level subsidy. The additional subsidy from the local bodies in Gujarat is negligible in the aggregate. In the case of the state level subsidy, it may be noted that we have not included the imputed charges on irrigation account since it is in the nature of the contra-entry in the budget.

The next component is the central excise and customs duty collected from Gujarat. There is little or no formal transmission and communication of any data or information from these central government offices to the DES in Gujarat. While the NSC (2001) makes specific recommendation about the modification of the shipping bills/ invoices and other relevant forms in order to facilitate data collection, it is necessary first to establish a formal link and rapport between these offices existing in the same state. With some effort it is possible to get the data on these central taxes collected (realized) from the respective Commissionerates located in the state.

A conceptual problem can arise at this stage. What we are interested in is the commodity taxes paid by the producer/ consumer in Gujarat and what is available is the taxes collected from Gujarat within Gujarat. It is conceivable that a producer in Rajasthan or Madhya Pradesh imports some machinery or raw material through the

port in Gujarat since it is perhaps the best option. The producer may have to pay the customs duty at the port in Gujarat but the good does not remain nor is it used in Gujarat. Thus, we have to subtract the customs duty paid by the outside producer in Gujarat from the duty collected within Gujarat. Similarly, the reverse may occur, i.e., a producer within Gujarat may be importing some goods through, say, Mumbai. He may be paying the customs duty in Mumbai. We should be adding such duties paid by the Gujarat producer outside Gujarat to the duty collected within Gujarat. At present, there is absolutely no system in place to collect these types of commodity-specific data on the duty paid by destination of the goods. The situation will improve once the NSC recommendation is implemented. However, it may be noted that this problem arises only in the case of the customs duty and not in the central excise since the jurisdiction of the Excise Commissionerates co-terminates with the state boundary as per their recent re-organization.

In order to overcome this hurdle, we are forced to make some assumptions. One alternative is to link the imports destined for Gujarat with a recent estimate of the exports originating from Gujarat made by GITCO (2002) for the Government of Gujarat. The estimate, which is prepared carefully by considering various sources of data and the results of a large sample survey specifically conducted for the purpose, indicates that about 20.75% of the national exports originate from Gujarat. Given that the import intensity of exports is higher than the average (see Dholakia & Kapur, 2001), it implies that at least 20.75% of the national imports are destined for Gujarat. In the absence of significant and formal re-export activity in Gujarat, it may be safely assumed that about 20.75% of the national customs duty arise on account of Gujarat. This can, thus, solve the problem for the year 2000-01 since the estimate of the exports from Gujarat pertains to that year. However, the same proportion cannot be assumed for all the previous years because it may fluctuate considerably from year to year.

The other alternative for us is to assume that the total customs duty paid by the outside producers in Gujarat is equal to that paid by the local producers outside Gujarat. This is certainly a conservative assumption for Gujarat because the expert opinion clearly suggests that the latter would considerably exceed the former. This impression is based on our discussion with senior government officials from the state ministries of industry, trade and agriculture; industry associations like CII and Gujarat Chamber of Commerce & Industry, Custom Officers, etc. The industrial belt in the famous "corridor", particularly in the South Gujarat depends almost exclusively on Mumbai for all its importation. On the other hand, Rajasthan and Madhya Pradesh are not heavily dependent on Gujarat ports for their importation needs. Thus, this assumption has the advantage of conservatism on its side, besides capturing the time series variations. We have, therefore, followed this assumption to construct our estimates of GSDP at the market prices. *Table 2* provides the estimates of the central indirect taxes ascribable to Gujarat both in absolute figures and as Gujarat's share in the nation.

The next and the last component in our estimation is the central subsidy availed by people in Gujarat. The primary source of the subsidy given by the Central Government is the central budget documents. These estimates at the aggregate level

are readily available in different publications like RBI (2001), EPW (2000), etc. Moreover, from the *Economic Survey* of different years, it is possible to construct consistent time series for the two main components, viz., the food subsidy and the fertilizer subsidy. These two components account for almost 60 to 90 percent of the central government subsidy component. The main problem is to allocate the central subsidy to the states- particularly to Gujarat for our purpose. As far as fertilizer is concerned, we get the data on the consumption of fertilizer both at the national level and at the regional level. It is, therefore, possible to allocate the fertilizer subsidy to the state reasonably. However, in the case of the food subsidy, the food-grains distributed through the public distribution system (PDS) is available at the national level and the state level only for a few recent years. For earlier years, only an average of the years 1985-86 to 1995-96 is available readily for different states and the nation from the GOI (2001) *Reports of the Commission of Agriculture Costs and Prices*. Making use of these data, Gujarat's share in the total lift of food-grains under PDS in the nation can be worked out. For the remaining part of the central subsidy, we can use the weighted average share of Gujarat obtainable for each year from the food and fertilizer subsidy. *Table 3* gives the estimates of these proportions and consequently allocated central subsidy to Gujarat for the last decade.

Now, we have a reasonably conservative set of estimates of all the components listed above for deriving the GSDP at market prices in Gujarat. *Table 4* presents these estimates for the years 1990-91 to 2000-01. As we have shown in this section, it is possible to generate such estimates for most of the states even with present situation of data availability in the country.

### **III. Significance and Use of GSDP at Market Prices**

The importance of the estimates of GSDP at market prices to complete the state accounts is already discussed in the introduction section. The necessity to complete the state accounts arises in the changed environment all the more. In the liberalized environment with strong tendencies for globalisation and integration of the state economies not only with other state economies in the country but also with other countries in the world, the role of the state governments and their economic policies is becoming crucial. Growth targets at the state levels are also important. This is more than corroborated by the Tenth Five Year Plan (2002) providing for the first time in the history of planning in this country, the decomposition of the national growth target of 8% p.a. by states. Thus, for the first time, the states are assigned the task explicitly. Corresponding assistance from the Centre is expected to flow to the states for the required capital formation. This pre-supposes proper estimation of the saving-investment gap, fiscal performance and the export-import gap at the state level. Since all these aggregates are always measured at the market prices, estimation of the GSDP at market prices becomes a precondition for attempting any such exercise.

A related but distinct issue is regarding the competition among states to attract foreign capital and investment in their territory for development and welfare of their population. The states need to supplement and complement these foreign investments by providing adequate infrastructural investments. In fact, in the

changing environment, tax related incentives have to be replaced with incentives in terms of better quality and quantity of infrastructure both physical and social. In the absence of realistic assessment of the need and absorption capacity of the state economy, the whole exercise can result in very dangerous mismatch wasting the scarce national resources. The Centre would only add to the confusion and wastage of the resources if it fails to assess the needs realistically. Since the need assessment in this context is mainly through the aggregate demand in the region, its estimation should be made on priority basis. It is well known that the aggregate demand in a state can only be measured realistically by the GSDP at market prices.

Moreover, there is a growing popularity of credit ratings of different state economies these days by agencies like CRISIL. This assumes importance because foreign investors and domestic entrepreneurs are considering such ratings as the relevant inputs in their decisions. Even the success and efficiency of the borrowing programmes of the state governments also depend on such ratings. Now such agencies consider several performance indicators in a comparative framework across states. Most of the indicators are, therefore, considered as a ratio or proportion of the state income. Often than not, the concept of the state income used by them is constrained by the available official estimates, *i.e.* NSDP or GSDP at factor cost and not at market prices. But the correct measurement of the indicators used in such interstate comparisons requires the estimates of GSDP at market prices. (See Dholakia, 2002 for details). Use of state income at factor cost instead of at market prices can considerably distort the interstate comparisons. *Table 5* provides a comparison of the different components of domestic product at market prices for the nation and Gujarat state for different years.

The table provides many interesting insights. First, the variation in the extent of relationships among different components of the domestic product at market prices at national level over time is much less than the corresponding one at the state level. Second, the extent of the relationship varies considerably between the state and the national figures. Thus, at the national level, GDP at m.p. is 1.2 times the NSDP at f.c. as compared to 1.4 times for Gujarat. This implies that for some other states, their GSDP at m.p. would be hardly 1.1 times their NSDP at f.c.. This is because Gujarat bears a much higher proportion of the burden of indirect taxes both the central ones and the ones at the state and local bodies. Thus, the level of the aggregate demand generated in Gujarat economy is significantly higher than what would be reflected through NSDP or GSDP measured at factor cost. The *ad hoc* proportionate adjustment of applying the national proportions at the state level to generate the estimates of GSDP at market prices will not be the right thing to do. The State Public Finance Reform Committee (SPFRC) for Gujarat clearly and explicitly recommended preparation of the estimates of GSDP at market prices (Shroff, Dholakia, et al., 2000). As an illustrative exercise they made the estimates by applying the national proportions. We have shown here that such an exercise may not be the right thing to do and it cannot replace direct estimation of the state income at market prices.

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*Table 1: Indirect Taxes of Local Bodies (Octroi) in Gujarat State (Rs. cores)*

Year	Corporations	Municipalities	Panchayats	Total
1990-91	194.6	45.5	8.8	248.9
1991-92	230.8	54.0	10.4	295.2
1992-93	262.7	61.5	11.8	336.0
1993-94	318.0	74.4	14.3	406.7
1994-95	371.8	87.0	16.7	475.5
1995-96	478.6	112.2	21.6	612.4
1996-97	539.6	129.1	26.0	694.7
1997-98	587.5	145.8	31.0	764.3
1998-99	629.3	153.7	35.0	818.0
1999-00	672.3	161.4	38.0	871.7
2000-01	710.7	164.9	42.0	917.6

Source: (1) Statistics of Municipal Towns and cities in Gujarat, (1995 to 2001 volumes)  
(2) Gujarat Municipal Finance Board  
(3) Finance Department, Government of Gujarat.

*Table 2: Central Indirect Taxes Ascribable to Gujarat*

Year	Net Revenue (Rs. Crores) Ascribable to Gujarat		Gujarat's Share in the Centre (in %)	
	Central Excise	Customs	Central Excise	Customs
1	2	3	4	5
1990-91	2653	1472	10.8	7.00
1991-92	3088	1651	11.0	7.31
1992-93	3610	1833	11.8	7.71
1993-94	3925	2215	12.4	8.83
1994-95	4749	3216	12.7	12.10
1995-96	4920	4763	12.1	13.42
1996-97	5755	6672	12.8	15.56
1997-98	6813	6023	14.2	14.86
1998-99	8029	6044	15.2	14.64
1999-00	8865	7606	14.3	15.74
2000-01	9874	7569	14.3	15.91

Source: Commissionerates of Excise and Custom at Ahmedabad, Kandla, Rajkot, Surat and Vadodara; and EPW (8<sup>th</sup> April, 2000)



Year	Central Govt.'s Subsidy (Rs. crores)		Gujarat's Share in Nation (in %)			Central Govt. Subsidy Ascribable to Gujarat (Rs. crores)
	Food	Fertiliser	Food grains Lift in PDS	Fertiliser Consumption	Weighted Average	
1	2	3	4	5	6*	7
1990-91	2827	4389	5.33	5.63	5.51	670
1991-92	2850	5185	5.33	5.76	5.61	687
1992-93	2800	5796	5.33	5.90	5.71	619
1993-94	5537	4562	5.33	5.41	5.37	623
1994-95	5100	5769	5.33	6.03	5.70	676
1995-96	5377	6735	5.33	5.43	5.38	682
1996-97	6066	7578	4.65	5.69	5.23	810
1997-98	7500	9918	4.18	6.35	5.42	1004
1998-99	8700	11387	3.55	6.07	4.98	1175
1999-00	9200	13244	2.94	5.35	4.36	1077
2000-01	12010	13800	4.83	4.09	4.43	1195

\* (6) = ((2) / (2)+(3)) (4) + ((3)/(2)+(3)) (5)  
Source: (i) *Economic Survey* (Annual), (ii) RBI (2001), (iii) *Socio-Economic Review*, GOG(Annual), (iv) GOI (2001) *APC Reports*

Year	GSDP at F.C. at current prices	Net customs revenues	Net central excise	Octroi	State Indirect taxes*	State subsidy	State's share in Central subsidy	GSDP at market prices
1	2	3	4	5	6	7	8	9
1990-91	30521	1472	2653	249	2289	296	670	36218
1991-92	33394	1561	3088	295	2781	526	687	39906
1992-93	43952	1833	3610	336	3325	982	619	51455
1993-94	49194	2215	3925	407	3788	985	623	57921
1994-95	63516	3216	4749	476	4582	790	676	75073
1995-96	71886	4763	4920	612	5141	947	682	85693
1996-97	85837	6672	5755	695	5849	1273	810	102725
1997-98	90906	6023	6813	764	6341	1577	1004	108266
1998-99	104216	6944	8029	818	7351	1857	1175	123426
1999-00	106427	7606	8865	872	7823	1550	1077	128966
2000-01	112049	7569	9874	918	8784	4097	1195	133902

\* state excise duty, taxes on vehicles, sales tax, entertainment tax, electricity duty, stamp duty and registration taxes on goods and passengers and tax on accommodation in hotels and lodges.  
Source: *Tables 1 to 3* and DES (2002)

Sr. No.	Item	1990-91		1995-96		1999-00		2000-01	
		India	Gujarat	India	Gujarat	India	Gujarat	India	Gujarat
1	NDP At F.C.	457690 (100.00)	26259 (100.00)	955345 (100.00)	61736 (100.00)	1573212 (100.00)	89606 (100.00)	1697396 (100.00)	93601 (100.00)
2	GDP At F.C.	510954 (116.38)	30521 (116.23)	1073271 (112.34)	71886 (116.44)	1755638 (111.60)	106427 (118.77)	1895843 (111.69)	112049 (119.71)
3	Central Indirect Taxes	45547 (9.95)	4125 (15.71)	76067 (7.96)	9683 (15.68)	110315 (7.01)	16471 (18.38)	116483 (6.86)	17443 (18.64)
4	State & Other Indirect Taxes	30782 (6.73)	2538 (9.67)	66333 (6.94)	5753 (9.32)	109264 (6.95)	8695 (9.70)	131045 (7.72)	9702 (10.37)
5	Central Govt. Subsidy	12158 (2.66)	670 (2.55)	12666 (1.33)	682 (1.10)	24706 (1.57)	1077 (1.20)	26949 (1.59)	1195 (1.28)
6	State & Other Subsidy	6451 (1.41)	296 (1.13)	14993 (1.57)	947 (1.53)	24335 (1.55)	1550 (1.73)	28434 (1.68)	4097 (4.38)
7	GDP at M.P.	568674 (124.25)	36218 (137.93)	1188012 (124.35)	85693 (138.81)	1929641 (122.66)	128966 (143.93)	2087988 (123.01)	133902 (143.06)

Source: CSO and Tables 1 to 4 above