Measurement Of Revenue Receipt Buoyancy In Goa

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INTRODUCTION

Goa became a part of Indian Union on 19th December 1961 upon its liberation from Portuguese rule along with Daman and Diu. Goa attained statehood on 30th May 1987. Prior to Statehood, being a small Union Territory, there was no pressure on Goa, Daman and Diu to raise its own resources for funding Government expenditure. However, as a full-fledged State, public finances of Goa have come under severe pressure, an important reason being inadequate devolution of resources from Government of India. An attempt is made in this paper to measure the revenue receipt buoyancy under different sources of revenue covering the post statehood period from 1987-88 to 2006-07.

BUOYANCY AND ELASTICITY

The tax and non-tax revenues would increase due to two reasons. Firstly, due to built-in-flexibility, there will be automatic increase in revenues due to the interaction with the growing incomes. Secondly, the Government may impose new taxes and user charges or change the existing rates which would augment the revenue collection. Thus, the total increase in the revenues is known as buoyancy, which measures the relationship between historical revenues and GSDP in terms of proportional increase in revenue following once percent change in GSDP. On the other hand, elasticity measures relationship between revenue at a constant rate structure and GSDP. If there is no change in tax rates and user charges during the reference period, buoyancy will be same as elasticity.

The Central Planning Commission and Central Finance Commissions appointed by the Government of India, during different time periods, have been emphasizing on increasing revenue receipts to reduce financial deficits of the State Governments. Buoyancy is an important indicator used by the Planning Commission and Central Finance Commissions in assessing the revenue potential of State Governments. **Dwivedi (1976), Purohit (1978), Dadibhavi (1990), Bhat & Kannabiran (1992) and Upender (1999)** have estimated buoyancy of different taxes for different states.

METHODOLOGY

The buoyancy may be estimated for two different time periods or for a given time period. For two different time periods, buoyancy is :

$$X/Y = \Delta Y/\Delta X$$

Where Y is historical revenue receipt,

X is GSDP or State Income (SI),

ΔY is increment in revenue,

ΔX is increment in SI.

The buoyancy in tax and non-tax revenues and its various components, Grants in Aid and Share in Central Taxes for the period 1987-88 to 2006-07 have been estimated using the following model.

$$Y = aX^b \qquad Log\,Y \;=\; a + b\,LogX$$

Y denotes relevant revenue resource and X denotes State income. 'a' and 'b' are the two parameters. 'b' denotes buoyancy in relevant revenue resource. For the purpose of calculating the parameters, it is presumed that the relationships are logarithmically linear and that a significant degree of correlation exists between the variables.

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Graph 1: Composition of Revenue Receipt
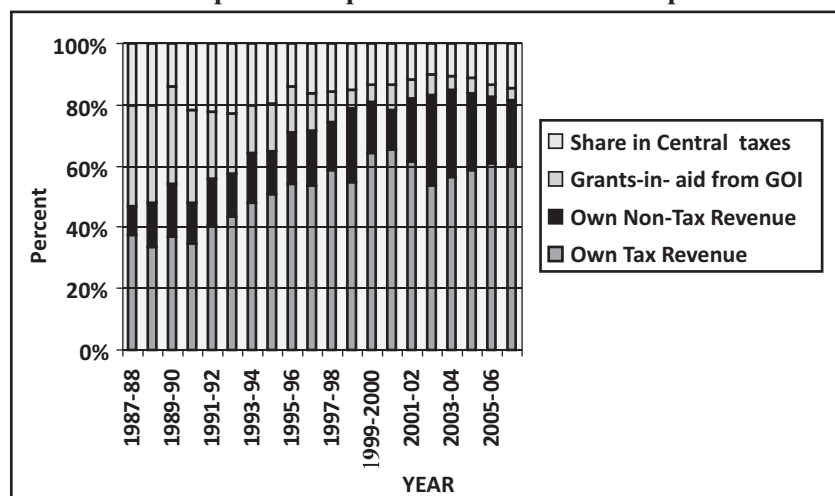
COMPOSITION OF REVENUE RECEIPT AND DATA SOURCES

Revenue receipt comprises of State's Own Tax Revenue, State's Own Non-Tax Revenue, Share in Central Taxes and Grants-in-Aid from Government of India. The devolution of resources from Government of India takes place in the form of Grants in Aid and Share in Central Taxes. Grants are released by the Planning Commission for State Plan schemes, which is governed by the Gadgil Mukherjee formula. There are centrally sponsored schemes and programmes, grants in aid, which are either directly released by the Central Ministries to the State Government Departments or are routed through the Planning Commission as a part of State Plan component. In addition, programme specific grants are also released based on the recommendations of Central Finance Commission. The Share in Central Taxes is governed by the recommendations of Central Finance Commission appointed by the President of India once in five years. Information regarding revenue receipts has been culled out from the budget documents and Finance Accounts of Government of Goa for the period 1987-88 to 2008-09. The State Income figures have been taken from the publications of Directorate of Planning, Statistics and Evaluation. The non-tax revenue figures in respect of power and lotteries have been adjusted to net accruals. In Goa, electricity business is run by the Government through Electricity Department and there is no separate Electricity Board for the purpose. Thus, the State Electricity Department purchases power and sells it to its consumers. The cost purchase of bulk power is shown as revenue expenditure under revenue account and receipt from the sale of power is shown as receipt under Estimate of Receipts. The purchase and sale of power being only transaction entries, the net of which is taken as receipt under Non-Tax Revenue (Economic Services). Similarly, from 1995-96 to 2002-03, the Government of Goa was running lottery business and the expenditure figures were reflected in Demand for Grants and receipt from sale of lottery figures reflected in Estimate of Receipts were only transaction entries. Therefore, net revenue earned from lottery business is taken as receipt under Non-Tax Revenue (General Services). Composition of Revenue Receipt from 1987-88 to 2006-07 may be seen in Graph 1. It is evident that there has been considerable decline in devolution of resources from Government of India in the form of Grants in Aid and Share in Central Taxes.

CONTRIBUTION FROM TOURISM

Tourism is the backbone of the economy of Goa. The State receives about 2.5 million tourists every year, which is nearly twice its population. Thus, there is always tremendous pressure on the State to preserve its pristine beauty, maintain peace and social harmony and develop good infrastructure at all levels. The details of tourist arrivals in Goa from 1996 to 2009 has been given in Table 1. It is pertinent to note that there is no separate head of account in the name of 'Tourism' to capture the contribution of Tourism sector -neither in the industry of origin under Gross State Domestic Product (GSDP) nor in the budget classification under Estimate of Receipts. However, the contribution from tourism sector can be estimated to some extent based on proxies. Tourism generates multiplier effect in the economy. In GSDP, its contribution may be mainly attributable under "Trade, Hotels & Restaurant". During the year 2008-09,

there were 2501 hotels and lodging houses in the State, with a total bed capacity of 42145. The costal villages have an urban outlook with lots of hotels and restaurants including star-category hotels and other business establishments. The contribution of the sub-sector 'Trade, Hotels & Restaurant" to the State income during the year 2008-09 was 11.42% of GSDP.

Table 1: Arrival Of Tourists In Goa (1996 To 2009)

Sl.No.	Year	No. of Tourists		
		Domestic	Foreign	Total
1	1996	888914	237216	1126130
2	1997	928925	261673	1190598
3	1998	953212	275047	1228259
4	1999	960114	284298	124412
5	2000	976804	291709	1268513
6	2001	1120242	260071	1380313
7	2002	1325296	271645	1596941
8	2003	1725140	314357	2039497
9	2004	2085729	363230	2448959
10	2005	1965343	336803	2302146
11	2006	2098654	380414	2479068
12	2007	2208986	388457	2597443
13	2008	2020416	351123	2371539
14	2009 (P)	2127063	376640	2503703

Table 2 : Revenue Receipts From 'Other Taxes & Duties'

Sl. No.	Year	Other taxes & duties
1	1987-88	0.77
2	1988-89	1.64
3	1989-90	2.36
4	1990-91	2.57
5	1991-92	3.99
6	1992-93	5.46
7	1993-94	9.28
8	1994-95	11.09
9	1995-96	13.87
10	1996-97	15.63
11	1997-98	18.23
12	1998-99	18.93
13	1999-2000	18.61
14	2000-01	20.59
15	2001-02	19.36
16	2002-03	20.31
17	2003-04	28.83
18	2004-05	31.19
19	2005-06	37.60
20	2006-07	54.74

The Sales Tax/VAT is the major contributor (over 60%) to the State's Own Revenue Receipt. While it is difficult to directly apportion the contribution from Tourism sector in Sales Tax/VAT, it will have significant contribution in terms of sale of petrol, diesel, other petroleum products, booming real estate activities and trade hotels and restaurants. However, the State's Own Revenue Receipts in terms of Luxury Tax and Entertainment tax may be largely attributable to the contribution from the Tourism industry. The contribution from Luxury Tax and Entertainment Tax are getting reflected under the head 'Other Taxes & Duties" in the State's Budget. The revenue receipts under the head "Other Taxes & Duties" from 1987-88 to 2006-07 are given in Table 2. It is evident from the table that the revenue receipt from 'Other Taxes & Duties' has grown significantly over the years and significant growth is visible from 2003-04 mainly due to rationalization of duty structure of Luxury and Entertainment taxes.

Goa, being a well known tourist destination, attracts tourists from all parts of the world. During the year 2008-09, 615 charter flights landed in Goa, bringing foreign tourists. Among the 3.76 lakh foreign tourists who visited Goa during 2009, 35% were from United Kingdom, followed by Russia (13%), Germany (7%) and Finland (6%). Foreign tourist arrival contributes significantly to the nation in terms of Foreign Exchange. During the year 2009, 5.11 million foreign tourists came to India, generating ₹ 54960 crore as foreign exchange. Thus, it is evident that 7.4% of foreign tourists who visited India visited Goa during the year 2009. Apportioning the foreign exchange earnings in the same ratio, the contribution from Goa in terms of foreign exchange from tourism works out to ₹ 4807 crore, which is a significant figure for a small state like Goa.

REVENUE RECEIPTS FROM STATE EXCISE

The details of revenue receipts from State Excise Duties from 1987-88 to 2006-07 is given in Table 3. It is evident from the table that from 1987-88 to 2006-07, revenue collection from State Excise Duties has grown at an annual compound growth rate of 12.8%. But, there has been inconsistency in year to year basis growth and stagnancy is visible for every two to three years. It may also be seen that the share of State Excise Duty in the State's Own Tax Revenue had declined from 11.31% in 1987-88 to 4.43% in 2006-07, with the highest being 14.89% in 1990-91.

The State Excise is linked to both domestic demand as well as touristic demand. From 1987-88, tourist arrival to the

Table 3 : Revenue Receipts From 'State Excise Duty'

Sl. No.	Year	State Excise duties
1	1987-88	5.82
2	1988-89	7.35
3	1989-90	9.24
4	1990-91	12.62
5	1991-92	14.98
6	1992-93	19.08
7	1993-94	21.10
8	1994-95	26.01
9	1995-96	26.95
10	1996-97	26.76
11	1997-98	31.99
12	1998-99	35.17
13	1999-2000	36.06
14	2000-01	38.98
15	2001-02	46.13
16	2002-03	46.79
17	2003-04	53.44
18	2004-05	55.34
19	2005-06	55.35
20	2006-07	57.23

State, including foreign tourists increased by more than three times. Population of the State also went from about 9 lakh to 15 lakh. Thus, there must be substantial increase in consumption level. Therefore, the excise duty collection should have gone up substantially. This can be further examined from the growth in excise duty collection in other States.

For instance, while the revenue collection from State Excise Duty from 1990-91 to 2006-07 went up by just over three times in Goa, it increased by over 12 times in Assam, 10 times in case of Delhi (From 1993-94 to 2006-07), over 9 times in Karnataka, over 8 times in Orissa and Tamil Nadu and over 7 times in Arunachal Pradesh and Tripura. The State of Goa, with a population of just 15 lakh has about 7000 excise licenses; while Delhi, with 150 lakh population has just about 500 to 600 licenses. But, the revenue collection in Delhi is 20 times more than that of Goa. It may also be noted that in the year 2006-07, while the share of revenue collection from Excise Duty in the State's Own Tax Revenue was just 4.43% in case of Goa, it was 20.64% in Himachal Pradesh, 19.29% in Karnataka, 19.25% in Sikkim, 17.69% in Meghalaya, 15.44% in Uttar Pradesh, 15.17% in Punjab, 14.77% in Madhya Pradesh, 14.36% in Andhra Pradesh, 14.35% in Tamil Nadu, 14.08% in Arunachal Pradesh, 13.71% in Rajasthan, 11.30% in Jammu & Kashmir, 11.23% in Tripura, 11.14% in Haryana and 11.16% in Delhi. It may also be noted that in some North Eastern States viz Manipur, Mizoram and Nagaland, the share of Excise Revenue in the State's Own Tax Revenue during 2006-07 was insignificant. The most notable state is Gujarat, wherein, the Excise Duty revenue during 2006-07 was lowest, being only 0.23% of the total State's Own Tax Revenue, which is mainly due to the fact that there exists total prohibition on sale of liquor in the state. However, it may also be noted that though the state of Gujarat is not at all dependent on the excise duty revenue, the state has managed to raise resources from other sources and achieved phenomenal success in its development agenda. As mentioned already, in case of Goa, the share of excise duty revenue in the State's Own Tax Revenue has been continuously decreasing.

In Goa, it is important to note that for every 200 persons, there is either a liquor shop or a bar & restaurant. It is a matter of research to know the economics of these outlets, considering their high density. The 61st round of National Sample Survey (July 2004 -June 2005) pertaining to *"Public Distribution System and Other Sources of Household Consumption, 2004-2005"* reveal that the consumption level of liquor in Goa is higher than rest of the country. As per this survey, in Goa, consumption rate of foreign liquor was 132 per 1000 households in rural areas and 179 per 1000 households in urban area. The consumption rate of beer per 1000 household in rural areas was 175 and in urban areas, it was 77. The study reveals that these consumption rates are the highest in the country and the consumption rate both in rural and urban areas of other states were nowhere near to Goa. As regards to country liquor consumption, the consumption rate in Goa was 104 per 1000 households in rural areas and 47 in urban areas and many States had slightly higher rate than Goa.

The excise duty structure in Goa is very low in comparison with other States. General argument is that consumption of liquor is a way of life in Goa and also low excise duty structure attracts tourists to Goa. However, there is no empirical evidence in support of this claim. Promoting consumption of liquor, even if it has become a way of life, cannot be considered as a welfare measure. The Goa Medical College and Hospital records indicate that both morbidity and mortality on account of consumption of liquor has been increasing. Therefore, it may not be a wise thing to promote consumption of liquor by keeping low excise duty structure. With high excise duty structure, other states are receiving increasing number of tourists. For instance, while Kerala has made significant progress in Tourism in recent years, excise duty collection in Kerala during 2008-09 increased to whooping ₹ 3600.00 crore, an increase of over 4 times from 2005-06. Therefore, in order to increase revenue collection, it may be appropriate to rationalize excise duty structure in Goa either on par with neighbouring states, or at least close to the duty structure of neighbouring states.

REVENUE RECEIPT BUOYANCIES

The details of logarithmic equations and corresponding correlation coefficients in respect of different sources of State's Own Tax, State's Own Non-Tax revenues, Grants in Aid and Share in Central Taxes are given in Table 4. It is evident from the table that the overall buoyancy in the State's Own Tax Revenue is 1.0668, with a very high correlation of 0.99, which means that a one per cent increase in the state's income brings about a little more than one percent increase in the State's Own Tax Revenue to the Government. The overall buoyancy in case of Non-Tax Revenue is 1.0918, with a correlation of 0.97. It may be noted that the buoyancy observed in non-tax revenue is slightly higher than the buoyancy observed in tax revenue.

F-Statistic indicates high level of statistical significance in respect of all the sources of revenue receipt except Interest

Table 4: Revenue Receipt Buoyancies (1987-88 to 2006-07) - Goa

Sl.No.	Equation	R^2	R	F
1	$\text{Log } Y_{OTR} = -1.3598 + 1.0668 \text{ Log } X_{SI}$	0.9883	0.9941	1517.2**
2	$\text{Log } Y_{ONTR} = -1.9068 + 1.0918 \text{ Log } X_{SI}$	0.9508	0.9750	346.9**
3	$\text{Log } Y_{LR} = -3.1747 + 0.9834 \text{ Log } X_{SI}$	0.8574	0.9260	108.3**
4	$\text{Log } Y_{SE} = -1.2347 + 0.7414 \text{ Log } X_{SI}$	0.9375	0.9682	269.9**
5	$\text{Log } Y_{TV} = -2.7365 + 1.1069 \text{ Log } X_{SI}$	0.9777	0.9888	788.0**
6	$\text{Log } Y_{ST/VAT} = -1.4717 + 1.0563 \text{ Log } X_{SI}$	0.9863	0.9931	1292.8**
7	$\text{Log } Y_{TGP} = -5.0044 + 1.6444 \text{ Log } X_{SI}$	0.8533	0.9238	104.7**
8	$\text{Log } Y_{SR} = -2.8018 + 1.1029 \text{ Log } X_{SI}$	0.9357	0.9673	262.1**
9	$\text{Log } Y_{OTD} = -3.2637 + 1.2018 \text{ Log } X_{SI}$	0.9138	0.9559	190.9**
10	$\text{Log } Y_{IRD} = -0.0598 + 0.1854 \text{ Log } X_{SI}$	0.0917	0.3029	1.8*
11	$\text{Log } Y_{GS} = -2.5086 + 0.9468 \text{ Log } X_{SI}$	0.7214	0.8494	46.6**
12	$\text{Log } Y_{SS} = -2.9057 + 1.1910 \text{ Log } X_{SI}$	0.9736	0.9867	662.9**
13	$\text{Log } Y_{ES} = -2.2383 + 1.1228 \text{ Log } X_{SI}$	0.8617	0.9283	112.2**
14	$\text{Log } Y_{GIA} = 1.6398 + 0.0433 \text{ Log } X_{SI}$	0.0384	0.1959	0.7*
15	$\text{Log } Y_{SICT} = -0.3406 + 0.6380 \text{ Log } X_{SI}$	0.8687	0.9320	119.1**

SI: State Income   OTR: Own Tax Revenue   ONTR: Own Non-Tax Revenue

LE: Land Revenue   SE: State Excise   TV: Taxes on Vehicles

GS: General Services   ES: Economic Services   ST/VAT: Sales Tax/Value Added Tax

TGR: Taxes on Goods and Passengers   SR: Stamps and Registration fees

OTD: Other Taxes and Duties   IRD: Interest Receipt & Dividend

GIA: Grants in Aid   SICT: Share in Central Taxes

**: Highly significant *: Not significant

Receipt/Dividend and Grants in Aid from Government of India. It is pertinent to note that among the different component of own tax revenues, there was no buoyancy in case of State Excise and Land Revenue as the buoyancy observed being less than unity. The buoyancy observed in case of State Excise is the lowest, being 0.7414, with a correlation of 0.97, which means that a one per cent increase in the State income brings about less than one percent increase in the State Excise revenue to the Government. Similarly, in case of Land Revenue, the buoyancy observed is 0.9834, with a correlation of 0.93. Thus, there is a need to re-look at the duty structure and tax administrative system in case of both State Excise and Land Revenue so as to increase the revenue collection. As regards to other components of the State's Own Tax Revenue, a very high buoyancy of 1.6444 is observed in case of Taxes on Goods and Passengers followed by 1.2018 in Other Taxes and Duties, 1.1069 in Taxes on Vehicles, 1.1029 in Stamps and Registration Fees and 1.0563 in Sales Tax/Value Added Tax. As Sales Tax/Value Added Tax being the major component of tax revenue, the buoyancy being still low, there is still scope to improve the revenue collection probably by widening its base, collecting huge arrears, plugging leakages and improving the tax administration system.

As regards the sources of non-tax revenues, it is clearly evident that there is no buoyancy at all in case of Interest Receipt/Dividend with a very low correlation of 0.30. This is basically on account of the fact that the share capital investment of the Government in different PSUs and institutions is not yielding any returns to the Government. Therefore, it is necessary that for the future, the Government has to be more practical and professional in making share capital investment in PSUs and institutions. In case of non-tax revenue from General Services also, the buoyancy is less than unity with a correlation of 0.85. This buoyancy is also due to lottery business run by the State from 1995-96 to 2002-03 and higher level of revenue accrual starting from 2006-07 on account of receipts from casino operations. However, the State is not running any lottery business now and the revenue from casino operations on continuing basis will depend upon the outcome of ongoing debate on casinos. The non-tax revenues from Social Services and Economic Services have shown higher level of buoyancy of 1.1910 and 1.1228 respectively, which is commendable.

However, in case of Grants in Aid from Government of India, there is no buoyancy at all as the buoyancy rate being only 0.0433. Infact, grants in aid to Goa in real terms are declining. Grants in aid from the Planning Commission are governed by the Gadgil Mukherjee formula, which has 60% weightage for population, 25% for per capita income, 7.5% for performance and 7.5% for special problems. This formula is totally unfavourable to performing and progressive states like Goa. Unless the formula is changed by suitably incorporating performance parameters with higher level of weightage, this trend is expected to continue in the future. Similarly, Share in Central Taxes is also governed by the formula adopted by the Central Finance Commission. While the approach is to help poor states to get higher level of assistance, there is no adequate encouragement and reward for the states to perform better. For instance, Table 5 gives year-wise central taxes collected by the Government of India from Goa and the percentage of central taxes devolved to Goa to the revenue collected from Goa for the period 1988-89 to 2006-07.

Table 5: Central Taxes Collected from Goa 1988-89 to 2006-07

Sl.No.	Year	Central Taxes Collected from Goa (₹ In crore)	Annual Growth (%)	Share in central taxes received by Goa (₹ In crore)	Annual Growth (%)	Ratio of taxes received to collected (%)
1	1998-99	976.10		97.12		9.95
2	1999-2000	1150.91	17.91	95.92	-1.24	8.33
3	2000-01	1217.47	5.78	104.85	9.31	8.61
4	2001-02	1245.47	2.30	107.26	2.30	8.61
5	2002-03	1368.54	9.88	114.01	6.29	8.33
6	2003-04	1772.15	29.49	135.07	18.47	7.62
7	2004-05	1959.41	10.57	162.16	20.06	8.28
8	2005-06	2147.38	9.59	244.72	50.91	11.40
9	2006-07	2725.59	26.93	312.13	27.55	11.45

It may be seen from the Table 5 that during the year 1999-2000, while there was a growth of 17.91% in the central taxes collected from Goa, the share in central taxes received by Goa had declined by 1.24% over the previous year. It is important to note that basically, there is no linkage between the central taxes collected from each State and the vertical and horizontal devolution share recommended by the Finance Commission. Therefore, even in a particular state, if the central tax collection is more and if the overall collection in that year in the entire country is less, then the share devolved to that State will also be low and vice versa. As per the recommendation of Twelfth Finance Commission under vertical devolution, the total kitty available for distribution to the states will be 30.5% of total tax collected in the country. If this formula is applied to Goa for the year 2006-07, as against the State's contribution of ₹ 831.30 crore (being 30.5%), the share received by Goa was ₹ 312.13 crore. In other words, as against 30.5%, Goa received only 11.45% during 2006-07. Thus, there is no incentive for Goa for contributing higher level of taxes to Government of India. Therefore, it is necessary that incentive mechanism be suitably factored in the devolution formula so that the states get rewarded for their contribution in the collection of central taxes by the Government of India.

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