



Gross and Per Capita District Domestic Product for Odisha, 2018-19: A Baseline prior to FANI

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Abstract: In this brief, we attempt to provide gross district domestic product (GDDP) and per capita GDDP for Odisha in 2018-19. This has been computed, in the absence of publicly available estimates, to arrive at a baseline scenario prior to cyclone FANI (pronounced FONI), the natural disaster that struck Odisha on 3rd May 2019 and has adversely affected 14 of the 30 districts in the state. We also compute district-wise proportion of population affected on account of FANI.

Introduction

The extremely severe cyclonic storm FANI (pronounced FONI) of 3rd May 2019, a rare summer event, has adversely affected 14 of the 30 districts of Odisha. In order to assess the effects on the economy, it is necessary to have a baseline economic condition of the districts such as the gross district domestic product (GDDP). However, the latest GDDP data available for Odisha is for 2011-12 at 2004-05 prices. In the absence of publicly available estimates for recent years, the current exercise provides GDDP and per capita GDDP estimates for 2018-19, which are sub-group consistent with the gross state domestic product (GSDP) and the state's population estimates for 2018-19. Having computed district-wise sub-group consistent population estimates, we use the same to also provide district-wise proportion of population affected by FANI.

Methodology

The following six steps are used for obtaining sub-group consistent GDDP estimates. First, we use the GSDP of 2011-12 for Odisha at constant (2011-12) prices, valued at Rs.2,30,90,708 lakh and 2004-05 prices valued at Rs.1,30,11,301 lakh to arrive at a ratio, that is, 1.78. Second, we use the ratio as a conversion factor on the available GDDP series from 2004-05 to 2011-12 at 2004-05 prices so that we have a GDDP series in 2011-12 prices. Third, we use the 2011-12 GDDP series to obtain compound annual growth rate (CAGR) for each of the districts. Fourth, we use the district-specific GDDP CAGR to extrapolate proxy GDDP values for 2018-19. Fifth, we use the sum of the proxy GDDP values to obtain their shares in state GSDP across districts. Sixth, we use the proxy GDDP shares to distribute the advanced estimate of the state's GSDP for 2018-19 to obtain sub-group consistent GDDP of districts for 2018-19.

To compute sub-group consistent per capita GDDP, we also need sub-group consistent population estimates for 2018-19. We obtain the same with following four steps. First, we use district-wise population from 2001 and 2011 censuses to obtain CAGR for that decade.

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Second, we use the district-specific population CAGR to extrapolate proxy population values for 2019. Third, we use the sum of the proxy population values to obtain their shares across districts. Fourth, we use the proxy population shares to distribute the population estimate of the state (4,53,17,000) used to compute per capita GSDP for 2018-19 to obtain sub-group consistent population estimates of districts for 2018-19.

Results

The sub-group consistent population, GDDP, and per capita GDDP estimates for 2018-19 are indicated in Table 1. The table also provides information for persons and proportion of population affected by FANI.

Table 1
Population, GDDP, Per capita GDDP, and FANI affected across Districts of Odisha, 2018-19

Districts	Population	GDDP, ₹ lakh		Per capita GDDP, ₹		FANI affected	
		Constant	Current	Constant	Current	Persons	% Population
Angul	1352091	2800493	3315200	207123	245191	5709	0.4
Balangir	1893981	1176532	1201106	62119	63417	0	0.0
Balasore	2513833	1803169	2140994	71730	85168	1133374	45.1
Bargarh	1552911	1064435	1407308	68545	90624	0	0.0
Baudh	489665	266756	315767.7	54477	64487	0	0.0
Bhadrak	1612635	939272	1171363	58245	72637	1015742	63.0
Cuttack	2793028	2882512	3471991	103204	124309	3096874	110.9
Debagarh	337115	244074	300048.7	72401	89005	0	0.0
Dhenkanal	1266697	1058158	1343316	83537	106049	93699	7.4
Gajapati	611693	446230	512579.1	72950	83797	0	0.0
Ganjam	3743656	2904105	3687989	77574	98513	2000000	53.4
Jagatsinghpur	1170086	1289922	1613414	110242	137889	500000	42.7
Jajpur	1949868	1706466	2090937	87517	107235	2192630	112.5
Jharsuguda	623700	773619	657405.8	124037	105404	0	0.0
Kalahandi	1749259	1052903	1299423	60191	74284	0	0.0
Kandhamal	785728	734977	740096.4	93541	94192	0	0.0
Kendrapara	1516680	851774	982682.8	56160	64792	1522902	100.4
Keonjhar	1961714	2393297	2847211	122000	145139	7160	0.4
Khordha	2529301	3008900	3983533	118962	157495	2502008	98.9
Koraput	1517836	1316642	1675254	86745	110371	0	0.0
Malkangiri	696511	339489	342873.2	48741	49227	0	0.0
Mayurbhanj	2704907	1804303	2318257	66705	85706	173095	6.4
Nabrangapur	1363171	606944	657440.5	44524	48229	0	0.0
Nayagarh	1019232	536599	606290.2	52647	59485	344086	33.8
Nuapada	663049	418388	520755.5	63101	78539	0	0.0
Puri	1819976	1158930	1344171	63678	73857	1968228	108.1
Rayagada	1061972	792170	975585.4	74594	91865	0	0.0
Sambalpur	1101398	1357869	1768993	123286	160613	0	0.0
Sonepur	651734	383622	466475.1	58862	71575	0	0.0
Sundargarh	2263574	3479469	4841921	153716	213906	0	0.0
FANI districts	27953704	25137897	30917349	89927	110602	16555507	59.2
Odisha	45317000	39592017	48600380	87367	107245	16555507	36.5

Notes and Sources: Authors' calculation based on data from Directorate of Economics and Statistics, Government of Odisha, Censuses 2001 and 2011, and from *Situation Report* of 29 May 2019, Special Relief Commissioner (SRC), Government of Odisha. The constant prices are in 2011-12 base, the ratio of current to constant gross state domestic product (GSDP) for Odisha in 2018-19 is used to convert GDDP from constant to current prices. All FANI affected districts are highlighted. For those not familiar with Indian terms, 1 lakh = 0.1 million, and 1 US Dollars (\$) ≈ 70 Indian Rupees (₹), as per current exchange rate values.

In 2018-19, across districts for Odisha, Ganjam has the maximum population and Debagarh the least. Sundargarh (with the Rourkela Steel Plant) has the highest GDDP and Debagarh the



least. Angul (with the NALCO smelter plant and collieries) has the highest (₹2.07 lakh in constant 2011-12 prices and ₹2.45 lakh in current prices) per capita GDDP and Nabrangpur the least (₹44,524 in constant 2011-12 prices and ₹48,229 in current prices).

Among the 14 FANI affected districts, the maximum number of people affected are in Cuttack and the least are in Angul while the maximum proportion of population affected are in Jajpur and the least in Keonjhar. If the persons affected by FANI is limited by their estimated population (particularly, for districts of Cuttack, Jajpur, Kendrapara and Puri) then for all FANI districts and Odisha the proportion of population affected by FANI will be 56.7% and 35.0%, respectively.

One of the important reasons for affected persons in a district being more than the estimated population is that the loss of property could lead to counting of persons by those evaluating loss even if the person concerned may not be a resident of the district. It is also possible that in order to guard against missing out some affected persons or to facilitate rent seeking, the reporting could be a bit on the higher side. At the same time, an extrapolated population could also be underestimated.

Conclusion

This policy brief, in the absence of publicly available estimates, has been an attempt to provide sub-group consistent estimates (that is, the sum of individual district estimates has to be equal to that of the state's estimate) of population, GDDP and per capita GDDP across districts for Odisha in 2018-19. In the FANI affected districts, we also provided proportion of population affected. The baseline scenario, particularly the one with the current prices, might help in exercises evaluating damages and losses in current market prices.

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