

BACK-SERIES OF SUB-NATIONAL ACCOUNTS: AN EXAMPLE FROM UTTARAKHAND

PANKAJ NAITHANI, Secretary to Govt. of Uttarakhand's RTS Commission, Dehradun
&
UJJWALA NAITHANI, Department of Biotechnology, IIIT, NOIDA

Despite it's being cumbersome and time-consuming, working out back-series of income aggregates with a particular base-year is an interesting statistical exercise. Though national-level back-series with 2011-12 as base-year has been released by CSO on 28 November 2018, sub-national i.e. state-level back-series are critically missing notwithstanding facilitation of DESs/ SSBs done by the lead author in his paper published in Journal of Income and Wealth (Vol.37, No.1, Jan-June 2015). Through this paper an attempt has been made to prepare back-series of current base-year (2011-12) for state of Uttarakhand using GSDP sub-sector level data. Splicing methodology outlined in previous paper has been preferred over the reworking procedure. Changes in various income aggregates for the period 2004-05 to 2011-12 are depicted through graphs/ figures. Motivation is to help other DESs/ SSBs to prepare back-series of 2011-12.

KEY WORDS: back-series, income aggregates, splicing, sub-national accounts, Uttarakhand

Background

The Ministry of Statistics and Programme Implementation (MOSPI) in January 2015 released the new series of national accounts, revising base-year from 2004-05 to 2011-12. Thereafter in June 2015 the MOSPI published, "Changes in Methodology and Data Sources in the New Series of National Accounts". Certain recommendations of the United Nations System of National Accounts (SNA 2008), namely valuation of Gross/Net Value Added (G/NVA), and related aggregates at basic prices; GDP at market prices and estimation by institutional sectors, were implemented in the new series. Newer data sources e.g. MCA-21 were used and coverage of financial sector was also widened. It was, therefore, imperative for the National Accounts Division (NAD) of the Central Statistics Office (CSO) to compile and release back-series estimates of national accounts for the years preceding the new base-year (2011-12) for completeness and comparability with previous base year (2004-05) estimates.

Consequently on 28 November 2018 through its Press Note CSO has released the snapshot of domestic product, capital formation and other macro-economic aggregates for the period from 2004-05 to 2011-12 with current base-year (2011-12). Mainly reworking of estimates following the methodology adopted for 2011-12 series is done. However, splicing has been opted in certain cases where availability of data is restricted. Approach/ methodology for preparing back-series is summarised in annexure to the Press Note. Noticeably CSO has prepared back-series almost when it is about to decide newer base-year for national accounts. It is, therefore, high time for States/ UTs to prepare back-series of their income aggregates with 2011-12 as base-year. As States/ UTs are considerably lagging behind, this paper

attempts to motivate them opt for this interesting statistical exercise and prepare back-series of base-year 2011-12 in a quicker way.

The Facilitation: Methodology

Naithani *et al* (2015) has outlined their observations and suggestions in respect of suitability of splicing methodology and working out back-series utilising GSDP sub-sector level data. The methodology written thereat is in simple language, and it is reproduced here in Box-1.

BOX-1: Splicing Methodology for preparing Back-Series

STEP-1: Series at sub-sector level i.e. 17 in number [11 single component/sub-sector, 2 for Manufacturing (Registered and Unregistered) and 4 for Transport, Storage & Communication (Railways, Transport by other means, Storage and Communication)] are to be considered to prepare back-series. These have to be in the format prescribed by the CSO for final consolidation sheets being produced by DESs/ SSBs

STEP-2: In case there exists a back-series of GSDP at Constant Prices for previous base-year than that series can be used combining it with previous base-year series. One can call it complete series of that particular base-year. Otherwise, one has to prepare such a back-series starting right from beginning (Second oldest base-year) and repeating STEP-3 to STEP-6 sequentially. However, for preparing first-ever (Oldest) back-series one has to use the preceding (Oldest) base-year series, which itself is complete series of previous base-year.

STEP-3: As new base-year series and previous base-year series of GSDP at Constant Prices are available, work out the multiplication factor as ratio of common year (new base-year) estimates i.e.

$$\text{Multiplication Factor} = \frac{\text{GSDP at Constant Prices in New Base Year Series}}{\text{GSDP at Constant Prices in Previous Base Year Series}}$$

This is to be worked out for each of the 17 sub-sectors and also for consolidated figure of GSDP.

STEP-4: Multiply each sub-sector figure for each of the year in the complete series of previous base-year with respective multiplication factor obtained from STEP-3.

STEP-5: Calculate GSDP at Constant Prices for the years starting from previous base-year up to the year preceding new base-year as sum total of 17 sub-sectors obtained after STEP-4. These are the GSDP at Constant Prices for those years in the new back-series.

STEP-6: An additional calculation is to be done for the years preceding the previous base-year multiplying consolidated figure of GSDP as appearing in the complete series of previous base-year with the corresponding multiplication factor. These are the GSDP at Constant Prices for those years in the new back-series (Note that these are not sum totals). However, it is obvious to skip this step while preparing first-ever (Oldest) back-series.

STEP-7: Repeat STEP-1 to STEP-6 for series of CFC at Constant Prices at sub-sector level i.e. 17 in number and consolidated CFC.

STEP-8: Obtain NSDPs at Constant Prices in the new back-series using identity: NSDP = GSDP-CFC. Calculation is to be done at each sub-sector level and consolidation.

STEP-9: Repeat STEP-1 to STEP-8 for series of GSDP at Current Prices and prepare respective estimates of GSDP and NSDP for the new back-series.

SOURCE: Adopted from Naithani *et al*, *Journal of Income and Wealth*, Vol.37, No.1, Jan-June 2015

It is to be noted that in base-year 2011-12 series a different nomenclature for 17 sub-sectors is used. But, these are fully comparable with base-year 2004-05 series. However, as States/UTs don't have figures of product tax and product subsidies for previous series, they can calculate Gross State Value Added (GSVA i.e. GSDP_{Basic Price}) only.

Back-series of Uttarakhand (Base-year 2011-12)

DES-Uttarakhand prepared back-series with base-year 1999-2000. However, this series couldn't be published or placed in public domain, as personnel engaged in the exercise were not sure whether they have understood the methodology. Moreover, preparing income aggregates for base-year 1993-94 series itself was a challenge as Uttarakhand was incepted on 9th November 2000. Thereafter having confidence in own data sources and developing capacities of personnel, DES-Uttarakhand prepared and published/disseminated back-series with base-year 2004-05. A critical analysis of which has been produced in previous paper of the lead author.

Back-series with base-year 2011-12 is missing. Thus, an attempt is made to prepare the same utilising the methodology mentioned in Box-1. $GSDP_{BP}$ and $NSDP_{BP}$ at constant and current prices, Growth Rate and Per Capita Income (PCI) in the back-series with 2011-12 as base-year and estimates of current series (i.e. 2011-12 to 2018-19) are given in Table-1, and sub-sector level tables of these income aggregates are given in Annexure-A to D.

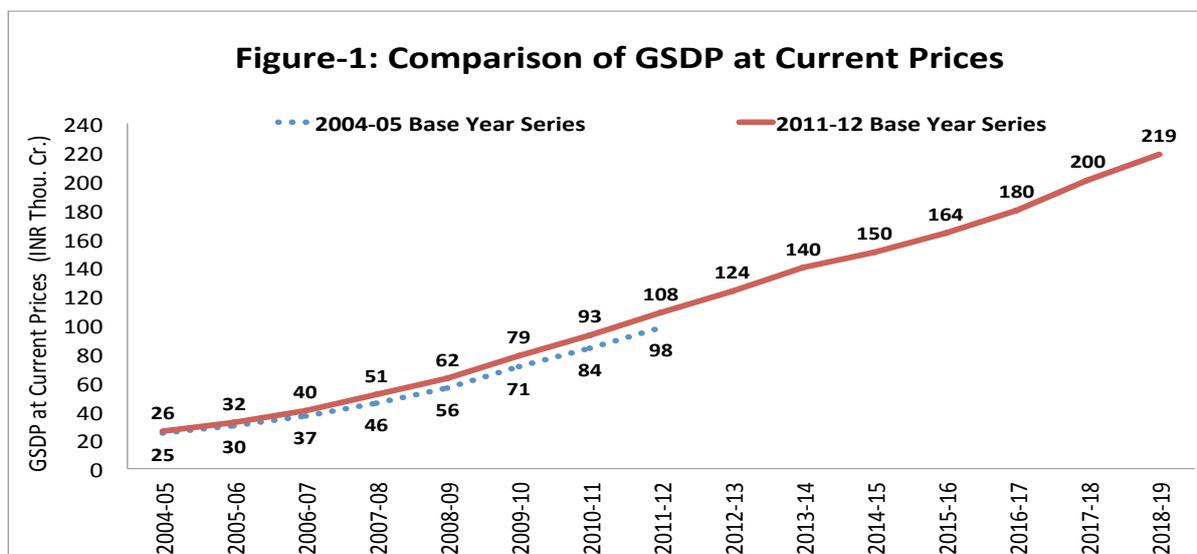
TABLE-1: Income Aggregates with Base-Year 2011-12

<i>Year</i>	<i>GSDP_{BP} (in Cr. INR)</i>		<i>NSDP_{BP} (in Cr. INR)</i>		<i>Growth Rate (%)</i>	<i>PCI (in INR)</i>
	<i>Constant</i>	<i>Current</i>	<i>Constant</i>	<i>Current</i>		
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1993-94	23252	7909	21517	7280	-----	9826
1994-95	24876	9458	23007	8721	6.98	11551
1995-96	25059	10314	23055	9440	0.74	12274
1996-97	26599	11362	24456	10356	6.15	13219
1997-98	26980	12290	24715	11177	1.43	14010
1998-99	27590	13580	25232	12375	2.26	15234
1999-00	28623	14612	25904	13170	3.74	15911
2000-01	31551	16591	28657	14997	10.23	17799
2001-02	33147	18199	29876	16305	5.06	19008
2002-03	36434	21289	32774	19115	9.92	21923
2003-04	39114	23487	35264	21121	7.36	23822
2004-05	43391	25950	38930	23067	10.93	25590
2005-06	50356	32160	45264	28705	16.05	31337
2006-07	57568	40070	51281	35399	14.32	38043
2007-08	68668	51207	61138	45116	19.28	47737
2008-09	76746	62472	67373	54408	11.76	56693
2009-10	89959	78593	78304	68061	17.22	69863
2010-11	99540	93013	87122	81140	10.65	82084
2011-12	108333	108333	94965	94965	8.83	94709
2012-13	116103	123749	101922	109177	7.17	105977
2013-14	125545	139504	109140	122244	8.13	117080
2014-15	132249	150487	116673	132837	5.34	125531
2015-16	142308	163595	125753	144709	7.61	134940
2016-17	155263	179839	137862	159891	9.10	147108
2017-18	167407	200453	148723	178461	7.82	162002
2018-19	178503	218644	158441	194620	6.63	174329

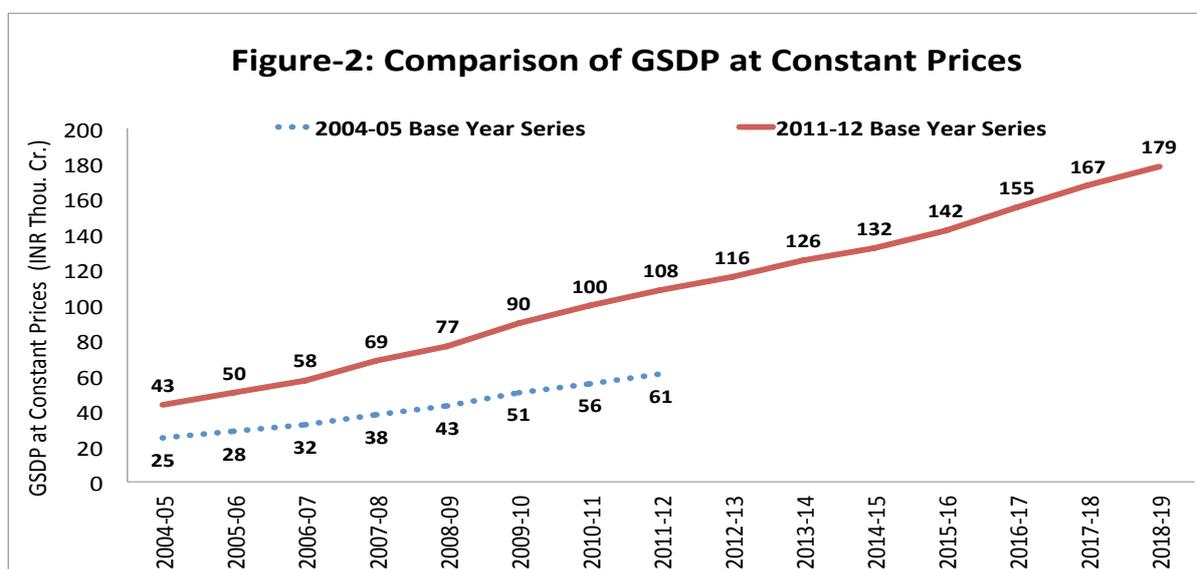
SOURCE: Authors' calculations and DES, Uttarakhand.

Back-series vis-à-vis Previous Base-year Series

Comparison of GSDP_{BP} at current and constant prices in the previous base-year series (From 2004-05 to 2011-12) with respective figures in the current base-year series is depicted through Figure-1 and Figure-2.



SOURCE: Based on authors' calculations and DES, Uttarakhand.



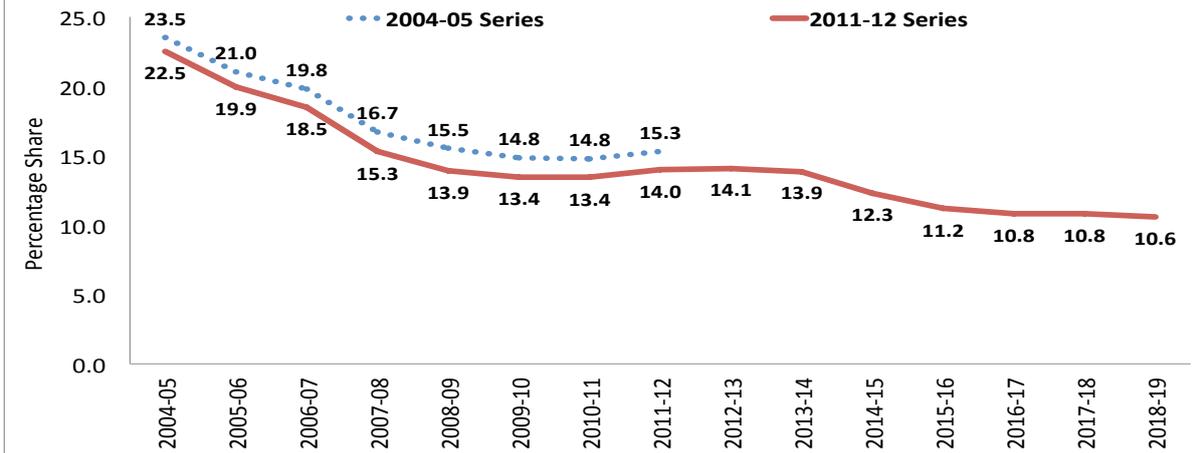
SOURCE: Based on authors' calculations and DES, Uttarakhand.

Note that usage of refined methodology and better coverage consequent to implementation of certain recommendations of SNA 2008 have resulted improvement (upward movement) in current series estimates for the year 2011-12 and 2004-05. These are respectively higher by about 10 thousand crores and 1 thousand crores at current prices (Figure-1).

At the same time, current series estimates for the year 2011-12 and 2004-05 are respectively higher by about 47 thousand crores and 18 thousand crores at constant prices (Figure-2). It is obviously so because price levels of 2011-12 are much higher.

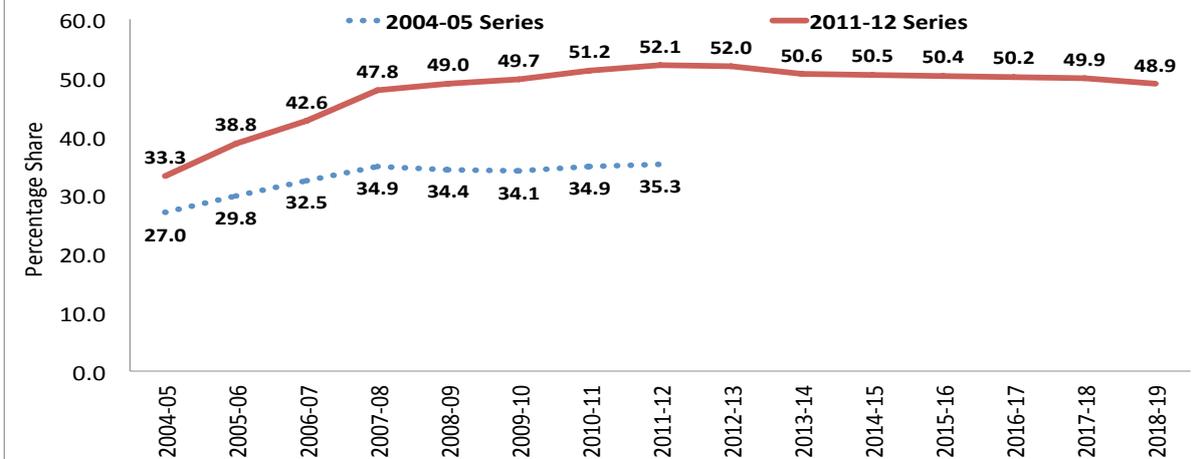
Sector-wise shares in the previous base-year series (From 2004-05 to 2011-12) with respective figures in the current base-year series are depicted through Figure-3 to Figure-5.

Figure-3: Share of Primary Sector in GSDP at Current Prices



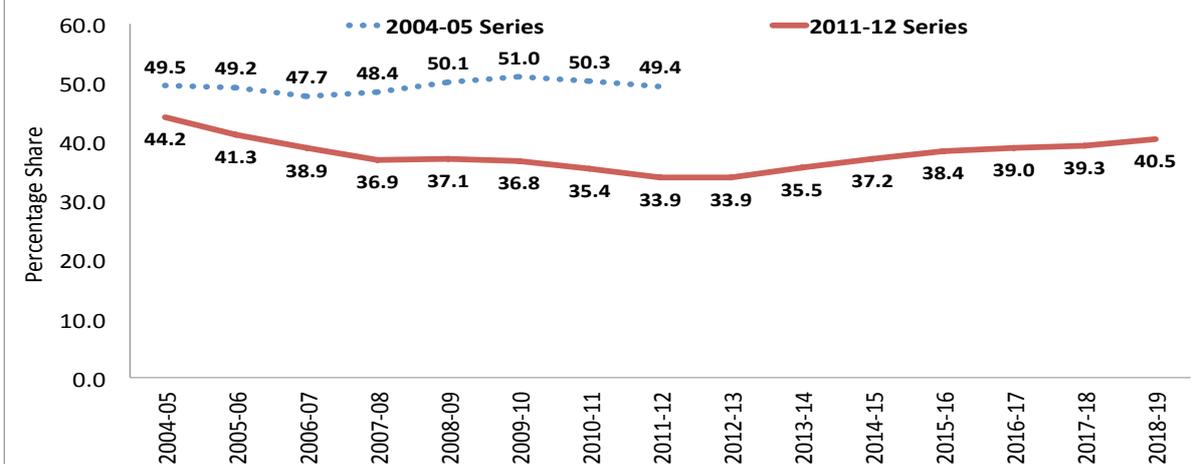
SOURCE: Based on authors' calculations and DES, Uttarakhand.

Figure-4: Share of Secondary Sector in GSDP at Current Prices



SOURCE: Based on authors' calculations and DES, Uttarakhand.

Figure-5: Share of Tertiary Sector in GSDP at Current Prices

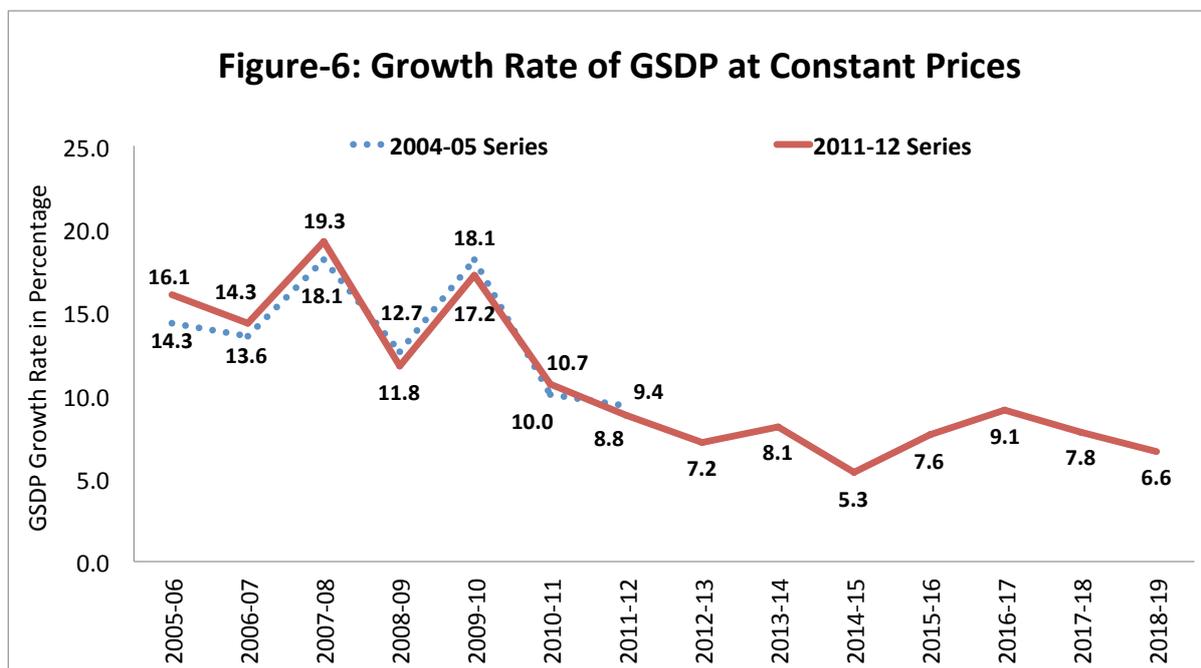


SOURCE: Based on authors' calculations and DES, Uttarakhand.

Contribution of the Primary Sector in current base-year series has gone down by 1% to 1.6% during the period from 2004-05 to 2011-12. It is inconsistent with all-India scenario where contribution of Primary Sector has gone up. During the same period share of Secondary Sector in current base-year series has gone up by 6.3% to 16.8%. This significant change can be attributed to the usage of MCA-21 data and newer methodologies.

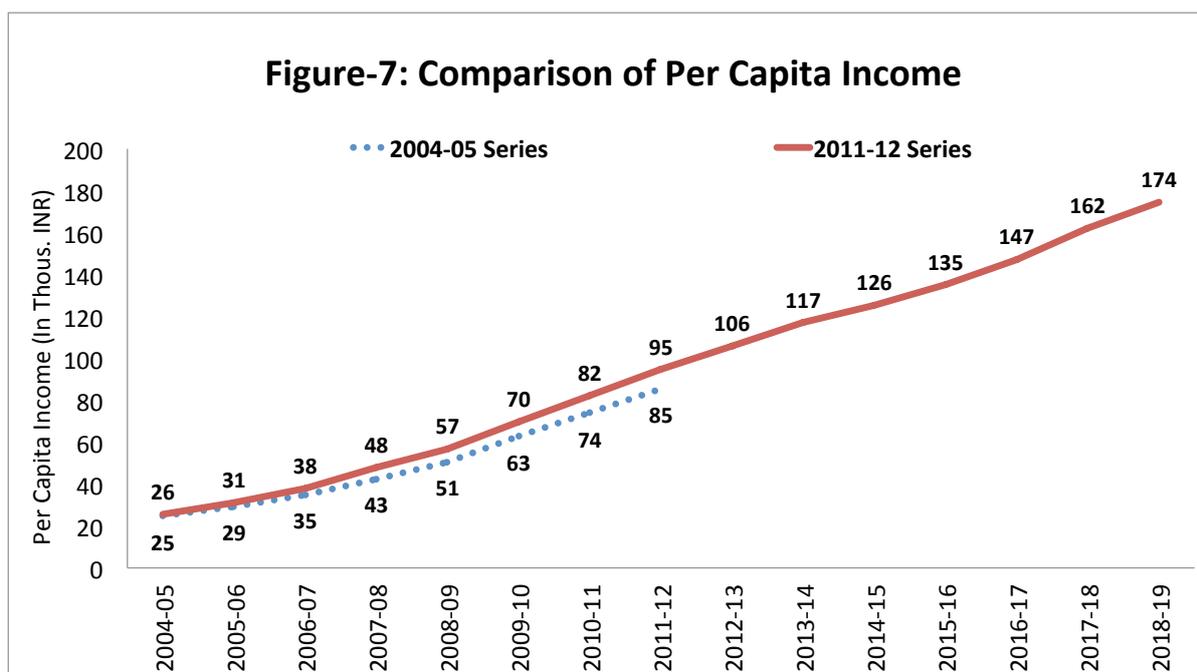
Obviously, the contribution of Tertiary Sector has gone down; it has moved down by 5.3% to 15.5% between periods from 2004-05 to 2011-12. Consequently, a noticeable change has been observed in Uttarakhand's economy. While as per estimates of base-year 2004-05 series it appeared to be becoming post-industrial i.e. service-sector based economy, in the estimates of base-year 2011-12 series it has emerged more as an industrial economy. To some extent it reflects the effect of Government of India's Special Industrial Promotional (Concessional) Package (2003-10) to Uttarakhand and various industrial policy initiatives of the state government as noticed by Naithani (2014) while analysing industrial development of the state based on estimates of 1999-2000 and 2004-05 base-year series.

Growth rates in the previous base-year series (From 2004-05 to 2011-12) with respective figures in the current base-year series are depicted in Figure-6. Difference in growth rates is observed from -0.6% to 1.8%; thereby expressing ups and downs during the period from 2004-05 to 2011-12.



SOURCE: Based on authors' calculations and DES, Uttarakhand.

Per Capita NSDP_{BP} at current prices i.e. Per Capita Income (PCI) in the previous base-year series (From 2004-05 to 2011-12) with respective figures in the current base-year series are depicted in Figure-7. Current series estimates of PCI for the year 2011-12 and 2004-05 are respectively higher by about 10 thousand and 1 thousand. This is somewhat similar to what has been noted in case of GSDP_{BP} at current prices (Ref. Figure-1).



SOURCE: Based on authors' calculations and DES, Uttarakhand.

Discussion

Few important observations in respect of Uttarakhand's economy emerged through this paper are as follows:

- Estimates at current prices such as GSDP_{BP} and PCI for the period from 2004-05 to 2011-12 in back-series with 2011-12 as base-year have gone up thereby reflecting the coverage enhancement and methodology improvement in new base-year series.
- While in 2004-05 base-year series it appeared to be becoming post-industrial economy, the newer base-year series reflects it more as an industrial economy.

Back-series of income aggregates helps capturing the structural changes in the economy in much better way as observed above. It is an instrument that reflects coverage enhancement and refinement in estimation procedure adopted for newer base-year series. It also provides a long-term view of the economy that may be quite useful for policy decisions. However, at sub-national level i.e. at State/UT level back-series calculations are rarely attempted. There may be number of reasons for this apathy; some of them are listed by Sethia (2012). Human resource constrains, time-consumption in cumbersome calculations, difficulty in understanding methodology, non-availability of data, lack of demand from users etc. are common factors for this apathy.

Naithani *et al* (2015) have pointed out that reworking of estimates for previous years as per enhancement of coverage and methodology adopted for newer base-year series is better but at sub-national level due to limitations of availability of data splicing can be done. They have also shown that merely for statistical purposes at sub-national level splicing being done utilising sub-sector data is as good as its being done for item-level data. However, not many States/ UTs have prepared back-series with base-year 2011-12. A sub-sector level back-series of Uttarakhand presented here can serve an example for them.

Acknowledgement

Authors are grateful to Mr Manish Rana and Mr Shwetank Pratap Singh of DES-Uttarakhand for sharing latest data of income aggregates. Fruitful discussions held with Mr Manish Rana and Mr Sanjay Sharma have helped us understanding the methodological differences between estimates of 2004-05 and 2011-12 base-year series.

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ANNEXURE - A

Back-series of 2011-12 Base-year at Sub-sector Level [GSDP_{BP} at Constant Prices in Lakh INR]: Uttarakhand

S. No.	Industry	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
1	Agriculture	649186	685067	733970	739881	735654	752965	750616	820484	769708	800242	840831	891162	853756	898217	915903	854588	969156	1014205	1051814
2	Forestry & Logging	213548	200429	219220	179698	199570	249204	231702	187532	195105	210805	216596	229093	228243	235134	240852	252950	252904	261896	274833
3	Fishing	1495	1582	1645	1691	1810	2069	2179	2206	2236	2369	2381	2384	2392	2792	2875	2940	3243	3549	3562
A	Agriculture and Allied	864229	887078	954835	921270	937034	1004238	984497	1010222	967049	1013416	1059809	1122639	1084390	1136143	1159630	1110477	1225303	1279650	1330209
4	Mining & Quarrying	75692	91888	81127	58306	48469	71729	94377	61599	73680	71742	170047	151504	200872	191476	194729	158807	136047	172217	186083
I	PRIMARY SECTOR	939921	978965	1035962	979575	985504	1075967	1078874	1071821	1040728	1085157	1229855	1274143	1285262	1327619	1354359	1269284	1361350	1451867	1516293
5	Manufacturing	386277	554847	353188	479681	390847	275394	263853	409855	366329	528735	570186	683277	1099243	1429562	2184143	2699882	3423668	3925135	4365135
5.1	Registered	360839	524951	319624	445585	353646	237225	222149	364878	322217	481755	519003	630183	1043267	1367492	2115176	2629505	3350560	3847568	4284828
5.2	Un-Registered	25438	29895	33564	34096	37201	38169	41704	44978	44112	46980	51183	53095	55976	62071	68967	70378	73109	77566	80307
6	Construction	122954	121338	145565	148074	172028	210900	200104	255550	326901	373177	379338	544249	597527	694694	640676	613453	674437	755756	883766
7	Electricity, Gas & Water Supply	59332	64428	66806	67322	68971	72827	66821	69779	123584	135484	148131	169628	184113	200059	236953	268156	303532	351183	398079
II	SECONDARY SECTOR	568563	740613	565560	695078	631846	559121	530777	735185	816814	1037397	1097655	1397155	1880883	2324315	3061772	3581491	4401637	5032073	5646981
B	Industry	644254	832500	646687	753384	680315	630851	625154	796784	890494	1109138	1267701	1548659	2081755	2515791	3256501	3740298	4537684	5204290	5833064
8	Transport, Storage & Communication	78286	91009	97956	106950	102391	106929	123609	146488	164352	193962	227867	261431	306468	396565	464126	515191	593255	659731	691812
8.1	Railways	5041	4741	5107	5308	5570	6110	6349	6392	7010	7358	7830	8279	7623	8221	13958	12551	14255	12733	14143
8.2	Transport by other means	36026	36323	38241	38697	41255	42531	44667	51642	56889	63237	70555	80375	93161	108717	128525	147198	171718	192880	219140
8.3	Storage	188	205	213	203	223	297	316	376	411	381	365	389	392	448	470	498	527	512	579
8.4	Communication	37031	49740	54396	62741	55344	57991	72278	88079	100042	122986	149117	172389	205292	279179	321174	354943	406754	453606	457950
9	Trade, Hotels & Restaurants	186490	179337	182294	199784	197950	200489	200194	229912	233972	245229	268517	310896	386041	445182	579867	704128	933097	1041685	1192897
10	Banking & Insurance	35969	39248	40631	57610	71792	63291	66538	71240	76482	87789	87025	95813	116059	140548	166540	195148	223357	272370	293318
11	Real Estate, Ownership of Dwellings & Business Services	282451	291902	302187	311286	323276	339315	357323	373900	387381	401016	417499	437782	458941	481946	505500	531161	544799	564840	588825
12	Public Administration	94881	92200	106031	105829	123509	124566	136463	139953	153802	163669	180587	190789	207601	223511	301526	406460	460557	438646	404304
13	Other Services	172031	183350	196043	202857	211541	238664	241760	257180	304200	331660	355457	371078	394320	417086	433089	471781	477826	492747	498856
III	TERTIARY SECTOR	850108	877045	925142	984316	1030459	1073255	1125887	1218674	1320188	1423326	1536953	1667789	1869430	2104837	2450649	2823868	3232890	3470019	3670012
C	Services	850108	877045	925142	984316	1030459	1073255	1125887	1218674	1320188	1423326	1536953	1667789	1869430	2104837	2450649	2823868	3232890	3470019	3670012
14	GSDP	2325214	2487572	2505859	2659897	2697992	2759030	2862268	3155141	3314668	3643409	3911424	4339088	5035575	5756772	6866780	7674644	8995878	9953959	10833285
15	CFC	173559	186897	200330	214252	226539	235812	271876	289480	327023	365982	385024	446093	509170	628713	753020	937355	1165517	1241748	1336797
16	NSDP = GSDP - CFC	2151654	2300675	2305528	2445645	2471453	2523217	2590392	2865661	2987645	3277427	3526400	3892995	4526406	5128059	6113760	6737289	7830361	8712211	9496488
17	State Population ('000)	7409	7550	7691	7834	7978	8123	8277	8426	8578	8719	8866	9014	9160	9305	9451	9597	9742	9885	10027
18	Per Capita GSDP (in INR)	31384	32948	32582	33953	33818	33966	34581	37445	38642	41787	44117	48137	54974	61868	72657	79969	92341	100698	108041

SOURCE: Based on authors' calculations.

NOTE: GSDP for the years 1993-94 to 2003-04 is not the sum total of 17 sub-sectors or 3 broad sectors. It is so because of methodology. However, A, B, C, I, II & III are sum totals.

ANNEXURE - B
Back-series of 2011-12 Base-year at Sub-sector Level [GSDP_{BP} at Current Prices in Lakh INR]: Utarakhand

S. No.	Industry	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
1	Agriculture	149800	186469	218858	224658	237750	259337	287888	327189	319096	351560	381845	417741	427080	499015	514971	604737	745497	871468	1051814
2	Forestry & Logging	44610	44538	46757	39363	48100	72702	74785	62951	66610	78997	81008	105270	123266	139931	150616	171088	192924	232312	274833
3	Fishing	451	481	506	526	585	684	720	769	797	848	898	919	1053	1234	1275	1479	2158	2753	3562
A	Agriculture and Allied	194861	231488	266121	264547	286434	332723	363393	390909	386503	431405	463752	523930	551399	640180	666863	777304	940579	1106534	1330209
4	Mining & Quarrying	15263	16538	15529	11938	11543	17887	26342	21535	25304	32491	70621	60001	89500	101856	115486	90437	115980	142207	186083
I	PRIMARY SECTOR	210125	248027	281650	276486	297978	350610	389734	412445	411807	463897	534373	583931	640899	742035	782349	867742	1056559	1248741	1516292
5	Manufacturing	153873	239221	170068	213194	206000	151451	152066	248848	230623	342653	381943	480625	806580	1113244	1764926	2335734	3012078	3643136	4365135
5.1	Registered	142548	224721	152458	194740	185307	129286	127272	222099	204150	313045	347504	443287	765352	1064853	1708637	2275061	2947483	3570637	4284828
5.2	Un-Registered	11325	14500	17610	18454	20694	22165	24794	26749	26472	29608	34439	37338	41228	48391	56289	60673	64595	72500	80307
6	Construction	42595	46251	59234	68773	82452	110441	108039	136317	180664	211786	222603	333862	389356	498106	486719	505752	621312	735083	883766
7	Electricity, Gas & Water Supply	16309	21427	23196	23696	28862	34245	33495	29006	45232	87579	69520	48678	52328	95240	197365	221775	275276	381307	398079
II	SECONDARY SECTOR	212777	306899	252498	305663	317314	296138	293601	414171	456519	642018	674066	863165	1248264	1706591	2449011	3063261	3908666	4759526	5646981
B	Industry	228040	323438	268027	317601	328837	314025	319943	435706	481823	674510	744687	923166	1337764	1808447	2564497	3153698	4024645	4901733	5833063
8	Transport, Storage & Communication	84355	117714	130048	153277	141110	154611	164556	185552	213556	235176	275033	317050	348518	415967	464885	520060	632538	638726	691812
8.1	Railways	2649	2815	3278	3446	3906	4291	4500	4417	5069	5512	6035	6729	6083	7180	12939	11768	14977	12417	14143
8.2	Transport by other means	10699	11778	13119	15513	18196	21304	23437	27213	30987	35556	41024	48845	60400	76526	95816	118696	155735	190407	219140
8.3	Storage	55	65	74	77	90	134	147	177	201	191	190	212	230	281	314	361	445	481	579
8.4	Communication	70952	103055	113577	134242	118918	128882	136472	153745	177299	193916	227783	261264	281805	331981	355817	389235	461380	435420	457950
9	Trade, Hotels & Restaurants	69284	74486	81766	92878	95313	102583	107511	129106	136495	150934	173570	210688	276886	342601	462375	600560	820168	973815	1192897
10	Banking & Insurance	21214	25236	32316	41912	48773	47687	52904	57814	67254	80315	87116	91364	102792	121759	143013	174905	199614	262150	293318
11	Real Estate, Ownership of Dwellings & Business Services	67999	73365	79015	85454	92447	104061	120175	135574	156830	176236	193385	212333	237153	265438	316606	369713	446905	540180	588825
12	Public Administration	27719	29651	37687	41162	51451	58077	65958	68469	78311	85712	97986	108913	125694	144078	206266	301565	385660	412491	404304
13	Other Services	49692	58157	68411	77697	87502	111868	117269	124627	153167	171908	190385	207541	235780	268480	296161	349393	409211	465638	498856
III	TERTIARY SECTOR	320262	378609	429242	492381	516596	578886	628373	701142	805613	900281	1017475	1147889	1326823	1558324	1889307	2316196	2894096	3293001	3670011
C	Services	320262	378609	429242	492381	516596	578886	628373	701142	805613	900281	1017475	1147889	1326823	1558324	1889307	2316196	2894096	3293001	3670011
14	GSDP	790868	945816	1031384	1136198	1229040	1358039	1461208	1659125	1819896	2128850	2348694	2594984	3215986	4006950	5120667	6247198	7859321	9301267	10833284
15	CFC	62830	73728	87367	100610	111323	120564	144246	159396	189395	217364	236614	288317	345522	467041	609074	806354	1053253	1187291	1336797
16	NSDP = GSDP - CFC	728038	872088	944018	1035588	1117716	1237475	1316962	1499730	1630501	1911486	2112079	2306667	2870464	3539909	4511593	5440844	6806067	8113976	9496487
17	State Population ('000)	7409	7550	7691	7834	7978	8123	8277	8426	8578	8719	8866	9014	9160	9305	9451	9597	9742	9885	10027
18	Per Capita GSDP (in INR)	10674	12527	13410	14503	15405	16718	17654	19691	21216	24416	26491	28788	35109	43062	54181	65095	80675	94095	108041

SOURCE: Based on authors' calculations.

NOTE: GSDP for the years 1993-94 to 2003-04 is not the sum total of 17 sub-sectors or 3 broad sectors. It is so because of methodology. However, A, B, C, I, II & III are sum totals.

ANNEXURE - C

Back-series of 2011-12 Base-year at Sub-sector Level [NSDP_{BP} at Constant Prices in Lakh INR]: Uttarakhand

S. No.	Industry	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
1	Agriculture	605927	641132	688469	692900	687168	702819	699391	763719	710722	746166	784471	825042	783405	822595	833062	764140	871837	903405	938204
2	Forestry & Logging	212069	198929	217687	178129	197948	247528	229979	186096	193654	209201	214839	226923	225851	232715	238317	250236	250222	259163	271823
3	Fishing	1445	1533	1595	1637	1751	2005	2113	2136	2158	2280	2286	2262	2250	2638	2714	2757	2969	3249	3143
A	<i>Agriculture and Allied</i>	819440	841593	907751	872665	886867	952351	931483	951951	906534	957648	1001593	1054227	1011505	1057948	1074093	1017133	1125028	1165817	1213170
4	Mining & Quarrying	70326	85213	73075	50337	40563	63862	83969	53683	64653	62719	150766	137761	179702	168101	167355	140309	110229	146733	154792
I	PRIMARY SECTOR	889766	926806	980826	923002	927430	1016213	1015452	1005634	971187	1020366	1152361	1191988	1191207	1226049	1241449	1157442	1235257	1312550	1367963
5	Manufacturing	366812	527144	323216	442625	347886	227675	208122	349725	302201	460491	496792	602806	990897	1241626	1919125	2289083	2862164	3331247	3741191
5.1	Registered	344001	500226	293223	412356	314800	193848	171139	309873	263439	419270	451972	556940	942699	1187991	1858865	2228155	2799487	3264543	3672363
5.2	Un-Registered	22812	26918	29993	30269	33085	33826	36983	39852	38762	41220	44821	45866	48197	53635	60260	60928	62677	66704	68828
6	Construction	118771	117136	140696	142659	166096	204106	193606	247419	315505	359589	365116	526519	577194	668324	614556	583568	641910	718085	841393
7	Electricity, Gas & Water Supply	31496	34904	35706	34528	34549	36567	30491	36204	68448	39327	72044	115640	127600	138649	164216	185840	210360	243379	275878
II	SECONDARY SECTOR	517080	679184	499618	619812	548530	468348	432219	633348	686154	859407	933952	1244964	1695690	2048599	2697896	3058491	3714434	4292711	4858463
B	<i>Industry</i>	587405	764396	572694	670149	589094	532210	516188	687031	750807	922125	1084718	1382725	1875392	2216700	2865251	3198800	3824663	4439444	5013255
8	Transport, Storage & Communication	48569	57066	59130	61882	53610	54875	67672	90052	104412	123509	154580	177792	217382	299293	356249	398398	448945	520304	527892
8.1	Railways	2984	2625	2978	3083	3339	3890	4154	4239	4712	5058	5486	5892	5573	5454	10247	8970	9876	8853	9539
8.2	Transport by other means	30572	30317	31734	31630	33919	35116	37486	42656	47983	52659	59188	64151	74927	87856	106200	123552	140999	161792	191141
8.3	Storage	158	174	183	173	185	259	278	321	381	342	334	331	327	372	393	414	436	419	496
8.4	Communication	14856	23950	24235	26996	16166	15610	25754	42836	51336	65449	89572	107417	136555	205611	239409	265462	297634	349239	326716
9	Trade, Hotels & Restaurants	180954	173133	175324	192427	190239	192408	190075	219561	221495	232345	254248	297350	369603	426109	556683	676039	903359	1002007	1136811
10	Banking & Insurance	35126	38260	39536	56343	70394	61780	64861	69253	74374	85533	84688	93374	113368	137554	163260	191524	219407	267791	288686
11	Real Estate, Ownership of Dwellings & Business Services	253716	262242	271513	279420	289975	303894	318927	330649	336939	343954	353478	367068	381673	398800	415016	430688	432592	440789	458980
12	Public Administration	92127	89452	103106	102806	120278	121440	133374	136919	150376	159914	176728	187058	203435	218902	295112	399237	452175	430268	396607
13	Other Services	162758	173373	185376	191399	199216	225304	226011	238579	284199	308241	328112	333400	354046	372753	388096	425470	424191	445791	461087
III	TERTIARY SECTOR	773251	793527	833985	884277	923712	959700	1000919	1085013	1171796	1253495	1351835	1456042	1639508	1853411	2174415	2521355	2880669	3106949	3270063
C	<i>Services</i>	773251	793527	833985	884277	923712	959700	1000919	1085013	1171796	1253495	1351835	1456042	1639508	1853411	2174415	2521355	2880669	3106949	3270063
14	NSDP	2151654	2300675	2305528	2445645	2471453	2523217	2590392	2865661	2987645	3277427	3526400	3892995	4526406	5128059	6113760	6732789	7830361	8712211	9496488
15	CFC	173559	186897	200330	214252	226539	235812	271876	289480	327023	365982	385024	446093	509170	628713	753020	937355	1165517	1241748	1336797
16	GSDP = NSDP + CFC	2325214	2487572	2505859	2659897	2697992	2759030	2862268	3155141	3314668	3643409	3911424	4339088	5035575	5756772	6866780	7674644	8995878	9953959	10833285
17	State Population ('000)	7409	7550	7691	7834	7978	8123	8277	8426	8578	8719	8866	9014	9160	9305	9451	9597	9742	9885	10027
18	Per Capita NSDP (in INR)	29041	30473	29977	31218	30978	31063	31296	34010	34829	37589	39774	43188	49415	55111	64689	70202	80377	88136	94709

SOURCE: Based on authors' calculations.

NOTE: NSDP for the years 1993-94 to 2003-04 is not the sum total of 17 sub-sectors or 3 broad sectors. NSDP figures have come from Annexure-A. However, A, B, C, I, II & III are sum totals.

ANNEXURE - D
Back-series of 2011-12 Base-year at Sub-sector Level [NSDP_{BP} at Current Prices in Lakh INR]: Uttarakhand

S. No.	Industry	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
1	Agriculture	136161	171182	201321	204675	215735	235197	262216	298326	287705	321629	349567	377108	382036	447526	455374	534478	661677	767478	938204
2	Forestry & Logging	44217	44094	46242	38775	47429	71947	73960	62255	65874	78159	80062	104004	121813	138362	148868	169048	190664	229783	271823
3	Fishing	431	459	482	498	554	647	682	727	747	791	835	833	950	1120	1149	1325	1918	2447	3143
A	Agriculture and Allied	160809	215735	248045	243949	263718	307791	336858	361309	354325	400579	430464	481946	504799	587008	605391	704851	854259	999708	1213170
4	Mining & Quarrying	13247	13801	11939	8046	7476	13634	20519	16966	19788	26814	58091	50338	73998	83939	93668	74828	93091	118186	154792
I	PRIMARY SECTOR	194056	229536	259984	251995	271195	321425	357377	378274	374113	427393	488555	532284	578797	670947	699059	779679	947350	1117894	1367962
5	Manufacturing	144640	225127	153663	191948	180782	123531	117081	209091	186151	294622	328715	418209	719614	957217	1538252	1966316	2490681	3072002	3741191
5.1	Registered	134371	211922	137750	175442	162241	103708	94988	185406	163066	268750	298639	386302	684485	915744	1489364	1914029	2435645	3009900	3672363
5.2	Un-Registered	10269	13205	15913	16506	18540	19823	22093	23684	23085	25872	30076	31906	35129	41473	48889	52288	55036	62102	68828
6	Construction	40484	43988	56429	65501	78823	106209	103920	130877	172708	202199	212360	320268	373243	476536	464733	479266	591277	698911	841393
7	Electricity, Gas & Water Supply	12802	17348	18475	18250	22824	27560	26567	22386	33725	66972	52668	35759	38220	68737	142042	158777	199220	278401	275878
II	SECONDARY SECTOR	197926	286463	228568	275699	282429	257299	247567	362354	392583	563793	593743	774235	1131077	1502490	2145027	2604359	3281178	4049314	4858463
B	Industry	211173	300264	240507	283745	289905	270934	268086	379320	412372	590607	651834	824573	1205075	1586429	2238695	2679186	3374269	4167500	5013254
8	Transport, Storage & Communication	72669	103164	111886	130310	114883	125223	131897	151011	175064	188452	224491	255212	279947	337935	375328	418133	499801	502557	527892
8.1	Railways	1927	2022	2408	2475	2893	3253	3456	3361	3925	4324	4627	5002	4569	5031	9846	8502	11104	8769	9539
8.2	Transport by other means	8012	8595	9387	11199	13542	16459	18588	20808	24451	27726	32539	36079	45637	59170	76707	97349	127035	160415	191141
8.3	Storage	45	54	62	64	73	116	128	148	184	170	172	176	187	227	256	293	366	395	496
8.4	Communication	62855	92493	100029	116573	98374	105395	109725	126694	146504	156232	187152	213956	229555	273506	288519	311988	361295	332978	326716
9	Trade, Hotels & Restaurants	66919	71659	78331	89092	91291	98285	101934	123084	128923	143028	164469	201391	265218	328273	443928	576432	793790	936588	1136811
10	Banking & Insurance	20814	24734	31718	41184	47955	46773	51872	56526	65822	78758	85452	89503	100663	119304	140241	171684	195973	257749	288686
11	Real Estate, Ownership of Dwellings & Business Services	59170	63552	66967	72142	77892	87875	102022	114315	130120	145101	156999	167733	186798	207041	247771	286273	349621	424771	458980
12	Public Administration	26819	28662	36512	39826	49914	56485	64310	66808	76337	83481	95621	106449	122837	140753	201426	295731	378334	404612	396607
13	Other Services	45944	53791	63258	71797	80938	104494	108166	113394	140489	156768	171877	179859	205126	233165	258812	308553	360020	420492	461087
III	TERTIARY SECTOR	292336	345562	388671	444351	462872	519134	560200	625138	716756	795588	898908	1000148	1160590	1366472	1667507	2056807	2577539	2946768	3270062
C	Services	292336	345562	388671	444351	462872	519134	560200	625138	716756	795588	898908	1000148	1160590	1366472	1667507	2056807	2577539	2946768	3270062
14	NSDP	728038	872088	944018	1035588	1117716	1237475	1316962	1499730	1630501	1911486	2112079	2306667	2870464	3539909	4511593	5440844	6806067	8113976	9496487
15	CFC	62830	73728	87367	100610	111323	120564	144246	159396	189395	217364	236614	288317	345522	467041	609074	806354	1053253	1187291	1336797
16	GSDP = NSDP + CFC	790868	945816	1031384	1136198	1229040	1358039	1461208	1659125	1819896	2128850	2348694	2594984	3215986	4006950	5120667	6247198	7859321	9301267	10833284
17	State Population (000)	7409	7550	7691	7834	7978	8123	8277	8426	8578	8719	8866	9014	9160	9305	9451	9597	9742	9885	10027
18	Per Capita NSDP (in INR)	9826	11551	12274	13219	14010	15234	15911	17799	19008	21923	23822	25590	31337	38043	47737	56693	69863	82084	94709

SOURCE: Based on authors' calculations.

NOTE: NSDP for the years 1993-94 to 2003-04 is not the sum total of 17 sub-sectors or 3 broad sectors. NSDP figures have come from Annexure-B. However, A, B, C, I, II & III are sum totals.