BACK-SERIES ESTIMATION

BASE 2011-12

METHODOLOGY DOCUMENT

CENTRAL STATISTICS OFFICE

MINISTRY OF STATISTICS & PROGRAMME IMPLEMENTATION

GOVERNMENT OF INDIA

Introduction

CSO revised the base year of National Accounts from 2004-05 to 2011-12 in January, 2015. It has been customary to compile back series estimates on the new base, whenever a new series of National Accounts Statistics (NAS) is introduced with an updated base period. While revising the base year, efforts have been made to implement the recommendations of the System of National Accounts-2008 (SNA-2008) to the extent data is available.

In the new series (2011-12), some of the major highlights are as follows:

(i)   Valuation of various GVA, NVA and related aggregates at basic prices and GDP at market prices instead of factor cost.
(ii)   Institutional sector-wise compilation of estimates – Non-financial and financial Corporations, General Government and Households
(iii)   Use of Enterprise Approach
(iv)   Use of MCA-21 database

The current series has made use of MCA-21 database, which stabilized only after the year 2010-11, for the Private Corporate part. In the absence of stable MCA-21 data for the years prior to 2010-11, alternative exercises were undertaken using different approaches.

A presentation on the Back Series along with a set of estimates was also made to all stakeholders. The results were critically examined and it was viewed that further examination of the methodology for the estimation of back series was required for better alignment with the earlier series.

Subsequently, the National Statistical Commission (NSC) constituted a Committee on Real Sector. One of the sub committees under this Committee looked into the aspect of linking the old and new GDP series. The sub-committee adopted the technique of 'production- shift approach' to back cast the new series estimates. In this approach, the difference between the new and the old series of estimates of the base year is distributed across the past years for which back series is estimated. The above method was also examined and it emerged that a single uniform approach across all the sectors may not be appropriate and a mixed approach would be desirable for the estimation of back series.

Accordingly, for the compilation of the back series (in this case for the years 2004-05 to 2010-11), hybrid approach has been used and the splicing method would be used for the years prior to 2004-05. The methodology adopted for compiling the backseries estimates of GVA, institutional sector-wise, is presented in the subsequent chapters.

Chapter-1
Agriculture and Allied sectors

- The agriculture and allied sectors consist of crop, livestock, forestry and fisheries sectors. The share of each of the sub-sectors is given below:

Table-1.1: Share of Agriculture & Allied Sectors in 2011-12 in the new base

Subsectors	% Share	
	Agriculture & Allied Sectors	Economy
Crop	65.4	12.1
Livestock	21.8	4.0
Forestry	8.3	1.5
Fishery	4.5	0.9
Agriculture & Allied Sectors	100.0	18.5

1.1 Estimates in the agriculture and allied sectors are compiled using production approach. This sector has undergone certain methodological changes for 2011-12 Series. The details of the changes have been documented in recent publication titled "Changes in Methodology and Data Sources in the New Series of National Accounts, Base Year 2011-12", published in June 2015. In the 2011-12 series, the Gross Value Added (GVA) of the crop sector and the livestock sector have been compiled separately. The details of methodological changes for 2011-12 series are summarized as under:-

- Bifurcation of feed between the crop and the livestock sectors,
- Estimation of consumption of seed including hybrid seed,
- Updating estimation of toddy using NSS 68th Round Consumer Expenditure Survey (2011-12) and Population Census, 2011 data,
- Updating expenditure on repairs and maintenance using AIDIS (All-India Debt and Investment Survey) 2013,
- Incorporating revised rates of meat product and meat by-products as per NRCM study (2015)
- Valuation of goat and sheep droplets by Central Institute for Research on Goats and National Centre for Agricultural Economics and Policy Research, New Delhi , 2013
- Estimation of Trees Outside Forest using ISFR (India State of Forest Report) -2013,
- Estimation of fuel-wood NSS-68th Round (2011-12) and Population Census 2011 data,
- Revision of inputs of forestry from 15.6% to 16.2 % of GVO of Forestry Sector.

1.2 Methodology for Back-series Estimation: The output and input estimates of back series for Crop Sector, Livestock Sector, Forestry Sector and Fisheries Sector; have been recalculated after incorporating the methodological changes adopted in the 2011-12 series at item level. For most of the items, for constructing back series at constant prices, the price vector for 2004-05 has been replaced by 2011-12 price vectors. Production figures have been updated using revised rates and ratios. In case of back casting current price series, only production figures have been updated. In forestry sub-sector, for estimating back series for Timber from Trees outside of the Forest (TOF), the revision has been made using latest data stating (-) 2.06 % decrease in growth rate in the growing stock, during 2011-2013, against the decrease of (-)0.26% observed in 2004-05 series. In this case, the back series for 2004-05 have been worked out by extrapolating the production for earlier years. Likewise, all the new rates and ratios have been applied from 2004-05 to 2010-11, and back series have been prepared. However, for certain items such as repair and maintenance, GVA of Government Irrigation System etc., back series have been worked out using splicing method. The item-wise

detailed methodology for compilation of Back-series for Agriculture & allied sector has been summarized in the Table-2.

S.No.	Item	2004-05 Series	2011-12 Series
	Table-1.2:-Methodology adopted		
1.	**Crop**		
i.	Separation of crops (25 crops) included in "Others" Group	Value of output = Estimated Production * Estimated Price	Value of output = production * price
ii.	Estimation of Seed	Value of Seed inputs= Value of harvested Grains retained for Seed	Value of Seed inputs= Value of improved variety of Seed + Value of harvested Grains retained for Seed
iii.	Estimation of "Diesel oil"	• Value of inputs = no. of diesel engines/tractors * consumption in value terms per diesel engine/tractor • No. of tractor estimated using linear growth of tractor data as per ILC 1997 and 2003.	• Value of inputs = no. of diesel engines/tractors * consumption in value terms per diesel engine/tractor • No. of tractor estimated using last 13 years' sales data.
2.	**Livestock**		
i.	Estimation of "Feed of Livestock"	Value of all the agriculture by-products, Green Fodder and concentrate are allocated to feed of the livestock.	Value of Feed = Species-wise and Category-wise per animal annual feed Consumption value(except Adult Male Cattle & Adult Male Buffalo which are allocated to crop sector) * Species-wise and Category-wise population
ii.	Estimation of "Dung / Organic manure"	• Only dung of cattle and buffalo have been included. • Value of dung = population of cattle, buffalo * evacuation rate*price	• Droplets of goat and sheep have been included. • Value of dung = population of cattle ,buffalo, sheep and goat * evacuation rate*price
iii.	Estimation of "Meat-Byproducts"	Old ratios of fat, hide, liver etc. have been used.	Animal-wise Meat (Product and by-product) as % of Value of Meat: Cattle (16.0%), Buffalo (14.49%), Goat (21.59%) Sheep (23.05%) and Pig (9.4%)
3.	**Forestry**		
i.	"Input-Output Ratio"	15.6% of GVO	16.2% of GVO
ii.	Estimation of Timber from "Trees Outside Forest"	Linear growth (-) 0.26% of growing stock was used.	Linear growth (-) 2.06% of growing stock used.
iii.	Estimation of Fuel-wood	Value of Output: (Total Value of Firewood – Value of agricultural by products used as firewood)*1.06 Where, • i) Total Value of Firewood= MPC as per 61st Round *Population*(365/30)* Price	Value of Output: (Total Value of Firewood – Value of agricultural by products used as firewood)*1.0764 Where, • i) Total Value of Firewood= MPC as per 68th Round *Population*(365/30)*

		• ii) 1.06= Factor adjustment for contribution of firewood for Industrial and Religious purposes	Price • ii) 1.0764= Factor adjustment for contribution of firewood for Industrial and Religious purposes
4.	**Agriculture & allied Sector**		
i.	Separation of Crop Sector and Livestock	Crop & Livestock combined	Common items have been separately estimated for each sub-sector.
ii.	Incorporation of latest Survey / Census data	• Livestock Census 2003 • CCS results for By-products old ratio • NSS 61st round results on Toddy& firewood	• Livestock Census 2012 • CCS results for By-products latest ratio • NSS 68th round results on Toddy& firewood

Table 1.3: Methodology for Back-Series			
S. No.	**Item**	**2011-12 Series**	**Back-Series**
	Crop		
	Output		
i.	**Major Crops:** Paddy, Wheat, Jowar, Bajra, Maize, Ragi, Barley, Gram, Tur, Urad, Moong, Kulthi, Masoor, Peas & Beans, Lakh/Khesari, Moth, Cowpea, Rajma, Wal, Batna, Choula, Groundnut, Sesamum, Rapeseed & Mustard (including Taramira), Linseed, Castorseed, Safflower, Nigerseed, Soyabean, Sunflower, Cotton, Jute, Mesta and Sugarcane	Value of output = production * price	Same as 2011-12 Methodology
ii.	**Minor Crops:** Ginger, Garlic, Chillies, Turmeric, Arecanut, Coriander, Cardamom, Sunhemp, Tobacco, Guarseed, Coconut, Potato, Onion, Banana, Tapioca, Sweet Potato and Cashew nut	Value of output = production * price	-do-
iii.	Small Millets	Value of output = production *price, Where, Price =75% of weighted average price of jowar, bajra, barley,maize and ragi	-do-
iv.	Other Pulses	Value of output = production *Price, Where, Price = 0.85* weighted average price of arhar, urad, moong, masur and horsegram	-do-
	Commercial Crops		
v.	Tea	Value of output = production of Raw tea * Price; Where, Production of Raw tea =processed tea / 0.225	-do-
vi.	Coffee	Value of output = production *Price	-do-
vii.	Rubber	Value of output = production *Price	-do-

		Table 1.3: Methodology for Back-Series		
S. No.	**Item**	**2011-12 Series**	**Back-Series**
viii.	Cashew nut & Cocoa	-do-	-do-
ix.	**Horticulture Crops:** Mango, Grapes, Papaya, Apple, Mosambi, Lemon, Orange, Lichi, Pine Apple, Sapota, Guava, Amla/Anola, Ber, Passion Fruit, Peach/Plum, Pomegranate, Strawberry, Brinjal, Cabbage, Cauliflower, Okra, Tomato, Green Peas, Beans, Bittergourd, Bottlegourd, Capsicum, Carrot, Cucumber, Muskmelon, Parmal, Radish, Pumpkin, Watermelon, Cherry, Almonds, Jack Fruits, Drum Sticks, Sub-tropical Fruits, Other Temperate Fruits, Nuts & Dry Fruits, Walnut, Pear, Other Citrus Fruits and mushroom	-do-	-do-
x.	Opium	-do-	-do-
xi.	Arecanut	-do-	-do-
xii.	Flowers (separately for cut flowers and spike)	-do-	-do-
	Miscellaneous Crops		
xiii.	Other Cereals	Value of output = area * value per hectare (VPH) Where, Value per hectare = weighted average of value per hectare of the crops: jowar, bajra, barley, maize and ragi	-do-
xiv.	Other Sugars (excluding Palmyra)	Value of output = area * value per hectare (VPH) Where, Value per hectare = 0.90* VPH of the crop sugarcane	-do-
xv.	Other Oilseeds (excluding Taramira)	Value of output = area * value per hectare Where, Value per hectare = 0.85*weighted average of value per hectare of linseed, sesamum, castorseed, nigerseed and safflower	-do-
xvi.	Other Fibres	Value of output = area * value per hectare Where, Value per hectare = 0.90*weighted average of value per hectare of sunhemp and mesta	-do-
xvii.	Other Drugs and Narcotics	Value of output = area * value per hectare Where, Value per hectare = 0.90*weighted average of value per hectare of opium (Madhya Pradesh &Rajasthan) and tobacco & tobacco stem (other states)	-do-
xviii.	Other Condiments and Spices	Value of output = area * value per hectare Where, Value per hectare = 0.90* weighted average of value per hectare of dry chillies, dry ginger, Cardamom and Black pepper	-do-
xix.	Other Fruits	Value of output = production *Price Where, Price = weighted average price of all fruits for which separate data is available	-do-

S. No.	Item	2011-12 Series	Back-Series
		Table 1.3: Methodology for Back-Series	
xx.	Other Vegetables	Value of output = production *Price Where, Price = weighted average price of all vegetable for which separate data is available	-do-
xxi.	Tobacco stem	Value of output = production *Price Where, Production= 86.63 % of tobacco production and Price=50% of the price of tobacco	-do-
xxii.	Toddy	Value of output= estimate at constant price	-do-
xxiii.	Fodder	Value of output = production *Price where, Production =irrigated area under fodder crops * 50 MT+ un-irrigated area under fodder crops *25MT	-do-
xxiv.	Grass	Value of output = production * Price Where, Production = total area (4* area under permanent pastures +1* miscellaneous tree crops + 2* culturable waste + 2* fallow lands + 1* net area sown) * fixed yield rates (state-wise)(based on NSS results)	-do-
xxv.	Mulberry	Value of output = Production* price	-do-
xxvi.	Miscellaneous food And non-food Crops	Value of output = area *Value per hectare	-do-
	By products		
xxvii.	- Paddy straw - Wheat straw - Bajra straw - Barley straw - Jowar straw - Maize straw - Ragi straw - Gram straw - Moong straw - Arhar stick - Urad straw - Groundnut straw - Cotton sticks - Jute sticks - Sugarcane trash - Poppy seed - Poppy husk - Masoor straw - Sesamum stick - Rapseed& mustard stick - Sunflower stick - Soyabean straw - Nigerseed straw - Castor stick	Value of output = area *Value per hectare Where, Value per hectare is calculated using latest CCS rate and WPI of respective crop.	-do-
	Other products		

| **Table 1.3: Methodology for Back-Series** |

S. No.	Item	2011-12 Series	Back-Series
xxviii.	Gur	Value of output = production of Gur *Price Production of gur = State-wise percentage (9-10%) of quantity of sugar cane retained for gur making ; where, quantity of sugarcane retained for gur making =total sugarcane production –sugarcane used for (chewing, seed,crushed by factories and Khandsari)	-do-
xxix.	Palmyra	Value of output = production *Price	-do-
xxx.	Bagasse	Value of output = production *Price Production of bagasse = 3.5% * sugarcane used for gur making	-do-
xxxi.	Foreyard and Backyard farming (kitchen garden i.e. Homestead land raising for crop and having area less than 0.01 H)	Value of output = Area under Foreyard and Backyard farming (kitchen garden) * value of output per hectare of fruits and vegetables Where, area under Foreyard and Backyard farming (kitchen garden)=0.21% of net sown area	-do-
	Inputs		
i.	**Seed**		
a.	Wheat, Jowar, Bajra, Barley, Maize, Ragi, Small Millets, Gram, Arhar, Urad, Moong, Masoor, Linseed, Sesamum, Groundnut, Rapseed & Mustard, Castor, Black Pepper and Turmeric	Value of Seed inputs= Value of improved variety of Seed + Value of harvested Grains retained for Seed Where, Value of improved variety of Seed=Seed Rate*(Irrigated Area*Seed Replacement Rate)*CCS Seed Price and, Value of harvested Grains retained for Seed= Seed Rate*{Irrigated Area*(100-Seed Replacement Rate) + Un-irrigated area}*Farm Harvest Price for current year	-do-
b.	Paddy, Sugarcane and Potato	Value of Seed inputs= Area * VPH (Seed Rate*CCS Seed Price)	-do-
c.	Other cereals, other condiments & spices, coconut, miscellaneous food crops	Value of inputs =area * value of seed inputs per hectare	-do-
d.	Misc. Non-Food Crops, Tapioca, Fodder, Guar Seed, Cotton, Dry Chilies, Other Vegetables & Dry-ginger	Value of inputs = (area * Value per Hectare as per Bench mark study)	-do-
ii.	Pesticides	Value of inputs = state-wise consumption* price	-do-
iii.	Repair & Maintenance for Crop Sector	Benchmark estimates moved with the estimates of capital stock of farm business	Splicing

S. No.	Item	2011-12 Series	Back-Series
		Table 1.3: Methodology for Back-Series	
iv.	Electricity	Value of electricity inputs = electricity consumption * Price	Same as 2011-12 Methodology
v.	Chemical Fertilisers	Value of inputs = quantity consumed*Price	-do-
vi.	Diesel oil	Value of inputs = no. of diesel engines/tractors * consumption in value terms per diesel engine/tractor	-do-
vii.	Irrigation charges	Compiled from the State Govt. Budget documents	Splicing
vii.	Market charges for crops	Market charges = 3.22% of * value of output	Same as 2011-12Methodology
ix.	Feed of livestock for Crop Sector	Value of Feed = Per animal annual Consumption rates of Adult Male Cattle& Adult Male Buffalo * Price *population of these categories	-do-
2.	**Irrigation system**		
	Gross Value Added		
i.	Operation of Govt. Irrigation system	Gross value added = compensation of employees + operating surplus + consumption of fixed capital	Splicing
3.	**Livestock**		
	Output		
i.	Milk (Cattle, Buffalo and Goat), Eggs and Wool	Value of output = production * Price	Same as 2011-12 methodology
ii.	Camel milk	-do-	-do-
iii.	Duck eggs (For States not covered under ISS)	Value of output = production *Price, Production = About 3% of hen eggs	-do-
iv.	Meat (Registered + Unregistered)	Value of output = production (after adjusting the loss in quantity produced due to manufacturing) * Price	-do-
v.	Meat (Products and by-products)	Animal-wise Meat (Product and by-product) as % of Value of Meat at current price: Cattle (16.0%), Buffalo (14.49%), Goat (21.59%) Sheep (23.05%) and Pig (9.4%)	-do-

S. No.	Item	2011-12 Series	Back-Series
		Table 1.3: Methodology for Back-Series	
vi.	Poultry Meat	value of output is estimated separately for four components: (a) chicken and ducklings killed, (b) adult fowls killed, (c) adult ducks killed and (d) other poultry killed; multiplied by the respective price per bird. (a) chickens & ducklings killed = total poultry of current year (chicks survived + 50% of hens & cock population + 50% of ducks & drakes population + population of chickens & ducklings + 62.5 % of other poultry) - total poultry of next year (population of hens +cocks + ducks + drakes + chickens + other poultry), where, chicks survived = 1/3rd of eggs kept for hatching, (eggs kept for hatching = fixed ratio * total egg production) (b) adult fowls killed = 50% of population of hens & cocks (c) adult ducks killed = 50% of population of ducks & drakes (d) other poultry = 37.5 % of other poultry	-do-
vii.	Fats from Fallen Animals	Value of output = Number of Fallen animal * yield rate *Price	-do-
viii.	Cattle hides, Buffalo hides, Goat skin and Sheep skin (fallen animals)	Value of output = Number of Fallen animal * value of hides/ skin per animal	-do-
ix.	Camel hair/Goat hair /Pig bristles	Value of output = yield rate * population of camel/goat/pig * Price	-do-
x.	Dung and Droplet Dung Fuel Dung Manure	Production of dung = population of cattle, buffalo, sheep and goat * evacuation rate (a) dung fuel value of output = 0.4 * utilisation rate for estimating dung used for making cakes * dung production * Price (b) dung manure value of output = utilisation rate for estimating dung used for manure purpose * dung production * Price	-do-
xi.	Other Products – Silk – Ere, Tassar, Muga, Honey and Bee Wax	Value of output = quantity * Price	-do-
xii.	Increment in livestock	Value of output = additions to livestock population during the year * Price	-do-
	Inputs		
i.	Repair and maintenance for livestock and operational costs	Expenditure towards Repair and Maintenance of Barns and Animal Sheds and some Other miscellaneous cost at Current Price as per AIDIS-2013 + (Value of Operational Cost at Current price (0.25 % of value of output of poultry meat, silk, wool, hides and increment in livestock)	Operational Cost same as 2011-12 Methodology and Splicing for R&M

S. No.	Item	2011-12 Series	Back-Series
		Table 1.3: Methodology for Back-Series	
ii.	Market charges for Livestock	Market charges = rates in Rs. per animal * no. of slaughter animal	Same as 2011-12 methodology
iii.	Feed of livestock for Livestock Sector	Value of Feed = Species-wise and Category-wise per animal annual feed Consumption value (except Adult Male Cattle & Adult Male Buffalo) * Species-wise and Category-wise population	-do-
4.	**Forestry Sector**		
	Output		
i.	**Industrial wood**		
a)	Recorded	Value of output = production * price	-do-
b)	Unrecorded	Value of output = 0.1 * value of output of recorded production	-do-
c)	Trees outside forest	Value = production (using growing stocks in forest given by FSI) * price	-do-
ii.	**Firewood**	Value of Output = (Total value of firewood – value of agricultural by-products used as firewood) * 1.0764, Where, i) Total value of firewood = MPC * population * (365/30) * Price ii) 1.0764 = factor adjustment for contribution of firewood for industrial and religious purposes	**-do-**
iii.	**Non Timber Forest Products**		
a)	Minor forest products	value of output	-do-
b)	Fodder from forest	Value of Roughages*Percentage of Livestock dependent on forest for fodder	-do-
	Input		
	Inputs of forestry	16.2% of total value of output	-do-
5.	**Fisheries**		
	Output		
i.	Marine fish, inland fish and prawns	Value of output (for marine fish, inland fish and prawns) = fish (raw form) * price + Let out fish (salted) * price + Let out fish (dried) * price + Let out fish (frozen) * price	-do-
ii.	Subsistence fish	Value of output = Production of subsistence fish * price Where, Production of subsistence fish= 0.125*production of Inland fish (for the states where production of subsistence fish is not available)	-do-
	Input		
i.	Marine fish and prawns	Value of inputs = 0.225 * value of Catch of marine fish and prawns	-do-
ii.	Inland fish	Value of inputs = 0.1 * value of Catch of inland fish	-do-
iii.	Fish salting/ sun dried/ subsistence	Value of inputs = 0.01 * value of output of (Let out of salted fish/ Let out of sundried/subsistence fish)	-do-

Chapter-2
Mining; Manufacturing; Electricity, Gas, Water Supply and Remediation Services

In the new series, i.e. 2011-12 series of National Accounts, there have been many methodological changes apart from the changes in the data sources. The summary of methodology adopted for 2004-05 and 2011-12 Series are as under:

Table 2.1 Methodology adopted

2004-05 Series		2011-12 Series	
Current	**Constant**	**Current**	**Constant**
Mining & Quarrying			
• The public part of coal is estimated using analysis of reports of Public Sector Companies. The private part of coal is worked out using data from the Coal Controller of India. • The Lignite estimates are compiled using the data from Neyveli Lignite Corporation. • The estimates for Petroleum and Natural Gas are estimated from the reports of the Ministry of Petroleum and Natural Gas. • The other metallic and non-metallic minerals are estimated using the production, value and input rates from IBM • The minor mineral estimates are compiled using the production values from State Geological Departments and Input Rates from IBM. • The GVA estimates are then adjusted for FISIM	• The estimates at constant prices are compiled using the current year quantity and base year prices from IBM for the Major minerals. • For Minor minerals the GVO ratios of current and constant for the non-metallic minerals were used. • The GVA estimates are then adjusted for FISIM	• The Mining sector estimates of GVA have been derived as sum of GVA of NDE (Non Departmental Enterprises), PC (Private Corporate) and HH (Households). Minor Minerals are allocated to HH. • The NDE estimates of the GVA of Coal, Petroleum & Natural Gas (NG) and other major minerals have been obtained from the annual reports of NDEs. • The PC estimates of the GVA of Coal, Petroleum & NG and Other major minerals have been estimated using the data from the MCA-21. • For Salt, the estimates are compiled using production data from the Salt Commissioner's office and input data derived from Hindustan Salt Limited. • For minor minerals other than sand the estimates are compiled using the production values from the state geological departments and the input rates from IBM. • For sand the estimates are obtained using the ratios derived from the construction sector. • The GVA estimates are then adjusted for FISIM. The mineral-wise allocation has been done using the data from IBM.	• The constant price estimates of GVA of Coal, Petroleum & NG have been obtained by deflating the current price estimates by appropriate WPI. • For other minerals, the constant price estimates have been obtained by deflating the current price estimates by current/ constant ratio using IBM data. • The GVA estimates are then adjusted for FISIM at constant prices. The mineral wise allocation has been done using the data from IBM
Manufacturing			
• The estimates for the registered manufacturing are estimated using the data from the ASI results. Also estimates	• The estimates of manufacturing at constant prices are arrived at by deflating CC-wise	• The estimates of GVA for manufacturing are estimated by summing up the estimates from ASI non- corporate (i.e. Proprietary, partnership &	• The estimates of manufacturing at constant prices are arrived at by deflating CC wise

Table 2.1 Methodology adopted

2004-05 Series		2011-12 Series	
Current	**Constant**	**Current**	**Constant**
from the Defence production units, railway workshops, currency, coinage, mints and security printing presses which are not covered in ASI are estimates using data from Budget documents. • The unregistered (MSME) manufacturing estimates are estimated for the benchmark year using data from the 62nd round of NSS. For the subsequent year, the estimates are moved forward using IIP and WPI.	estimates by corresponding CC-wise WPI derived annually from WPI.	HUF etc.), Private Corporate, DE, NDE and unincorporated sector, derived compilation category (CC)-wise. • For the ASI-non-corporate part, the compilation category-wise GVA estimates have been computed from the ASI results for each year by only taking into account the non-corporate part of ASI. • The NDE and DE parts are derived by analysis of information pertaining to DEs and NDEs belonging to manufacturing sector. The same are concorded CC-wise. • Unincorporated part has been compiled using the Effective labour input method using the 67th (Enterprise survey) and the 68th (Employment Unemployment survey) rounds of NSS for the benchmark year. The estimates are moved forward to the subsequent years using ASI growth rates. In case of non-availability of the ASI, the IIP and WPI are used to move the estimates forward. • The PC estimates are derived by using the ASI Private Corporate growth rates in different compilation categories. • The sum of GVA of ASI quasi, PC, DE, NDE, and unincorporated part give the total GVA for the manufacturing sector, compilation category-wise. • The estimates are then adjusted for FISIM.	estimates by corresponding CC-wise WPI derived annually from the data from WPI.
Electricity			
• The estimates of GVA have been compiled by analyzing the Budget documents of Centre and States and also by analyzing the Annual Reports of the Public Sector Companies • The estimates from the Wind Energy from state directorates were also added. • The estimates are then	• The constant price estimates have been estimated using quantum (quantum sales of electricity) index. • The estimates are then adjusted for FISIM to compile the GVA estimates adjusted for FISIM.	• The GVA estimates have been compiled using data from DE, NDE and PC. • The estimates of GVA for the DE part have been compiled by analyzing the Budget documents of Centre and States. • For the NDE part the estimates have been computed by analysing the Annual Reports of the Public Sector Companies.	• The constant price estimates have been estimated using quantum (quantum sales of electricity) index. • The estimates are then adjusted for FISIM to compile the GVA estimates adjusted for FISIM.

Table 2.1 Methodology adopted

2004-05 Series		2011-12 Series	
Current	**Constant**	**Current**	**Constant**
adjusted for FISIM to compile the GVA estimates adjusted for FISIM.		• The PC part information has been compiled using the MCA-21 database. • The estimates are then adjusted for FISIM to compile the GVA estimates adjusted for FISIM.	
Gas, Water Supply and Remediation			
• The current price GVA estimates have been compiled using data from the Annual Reports of the Gas generating companies. • For the estimation of Gobar Gas, the estimates of GVA have been computed as the value of production at current prices, adjusted for share of KVIC in total bio gas plants installed up to current year from Ministry of Non-Conventional Energy and KVIC respectively. • The estimates are then adjusted for FISIM to compile the GVA estimates adjusted for FISIM.	• The Gobar Gas estimates are obtained by moving the estimates with the index of number of bio-gas plants. • For the remaining portion, quantum index (quantum sales of gas) have been used to compile the estimates at constant prices. • The estimates are then adjusted for FISIM to compile the GVA estimates adjusted for FISIM.	• The current price GVA estimates have been compiled using data for NDE, PC and that of Bio Gas. • For estimates of GVA from NDE, information for the new series estimates has been obtained from Annual Reports of the Public Sector Companies. • For the estimation of Gobar Gas, there have been no methodological changes. The estimates of GVA have been computed as the value of production at current prices, adjusted for share of KVIC in total bio gas plants installed up to current year from Ministry of Non-Conventional Energy and KVIC respectively. • The information on the PC part has been compiled using the MCA-21 database • The estimates are then adjusted for FISIM to compile the GVA estimates adjusted for FISIM.	• The Gobar Gas estimates are obtained by moving the estimates with the index of number of bio-gas plants. • For the remaining portion, quantum index (quantum sales of gas) have been used to compile the estimates at constant prices. • The estimates are then adjusted for FISIM to compile the GVA estimates adjusted for FISIM

Table 2.1 Methodology adopted

2004-05 Series		2011-12 Series	
Current	**Constant**	**Current**	**Constant**
• The GVA for the Water Supply sector has been compiled using data from Budget documents and Annual Reports of the Water Supply generating companies. • For the GVA estimates for the household (HH) part has been compiled using the data from the NSS 61st round for the base year and moving the estimates forward.	• For the Water Supply sector, the GVA estimates at current prices have been deflated using CPI (IW).	• The GVA for the Water Supply sector has been compiled using data from General Government (GG), NDE, PC and the unorganised sector. • The estimates of the GVA for the GG and NDE have been obtained by analysing the Budget Documents and the Annual Reports of the Public Sector Companies respectively. • The GVA estimates for the household (HH) part has been compiled using the data from the NSS 68th round for the base year and the estimates are moved forward using PC growth rates.	• For the Water Supply sector, the GVA estimates at current prices have been deflated using CPI (C).
		• The remediation sector is newly added in the new series consisting of two parts: sanitation and recycling. • The Sanitation estimates are derived from GG, PC and HH. The GVA estimates for the GG portion have been compiled by analyzing the Budget document. • The GVA estimates for the PC and the HH part of the new series estimates have been obtained by using MCA data and NSS 67th and 68thround results. • The results of ASI are also used for the Organised part of the Remediation. • For the Remediation sector, the GVA estimates are the sum of Recycling part and Sanitation part.	• The Recycling portion of GVA at current prices has been deflated using WPI • For the Sewage portion the current prices estimates have been deflated using CPI (C).

Methodology adopted for back series: The National Accounts Estimates in the new series (2011-12) are constructed institution-wise. The back series estimates are also compiled aggregating the estimates from different institutional sectors.

Table 2.2 Methodology for Back Series	
Current	**Constant**
Mining	
• The Mining sector estimates of GVA have been derived as sum of GVA of NDE (Non Departmental Enterprises), PC (Private Corporate) and HH (Household i.e. the minor minerals). • The NDE part of the GVA Estimates of Coal and Petroleum & Natural Gas (NG) has been obtained from the annual reports of NDEs. • The PC part of the GVA Estimates of Coal and Petroleum & NG have been estimated using the share of private part of the respective mineral in the past years since separate estimation for the PC part for the back series for Mining sector (Coal, Petroleum & NG) was difficult using the MCA-21 data base. • For other minerals under mining (salt evaporated, other metallic & non-metallic minerals and minor minerals), the estimates of GVA in the new series are obtained by splicing the old series GVA estimates separately for each. • The GVA estimates are then adjusted for FISIM. The mineral-wise allocation has been done using the data from IBM for the past years.	• The constant price estimates of GVA of Coal, Petroleum & NG have been obtained by deflating the current price estimates by appropriate WPI. • For other minerals, the constant price estimates have been obtained by deflating the current price estimates by current/constant ratio using IBM data for back years. • The GVA estimates are then adjusted for FISIM at constant prices. The mineral-wise allocation has been done using the data from IBM for the past years
Manufacturing	
• The estimates of GVA for manufacturing are estimated by summing up the estimates from ASI non- corporate (i.e. Proprietary, partnership & HUF etc), Private Corporate, DE, NDE and unincorporated sector, derived CC-wise. • For the ASI-Quasi part, the compilation category-wise GVA estimates have been computed from the ASI results for each year by only taking into account the non-corporate part of ASI. • The NDE estimates parts are derived by analysis of information pertaining to NDEs belonging to manufacturing sector. The same are concorded CC-wise. • The estimates of GVA for the DE part have been compiled using splicing. • Unincorporated part has been back casted using ASI pure quasi annual growth rates derived for the years 2004-05 to 2010-11 as followed in the new series. • The PC estimates are derived by using the ASI Private Corporate growth rates. • The sum of GVA of ASI quasi, PC, DE, NDE, and unincorporated part give the total GVA for the manufacturing sector, compilation category-wise. • The estimates are then adjusted for FISIM.	• The estimates of manufacturing at constant prices are arrived at by deflating CC-wise estimates by corresponding CC-wise WPI derived annually from WPI. • In order to keep the comparability, the estimates are presented as organised and unorganised
Electricity	
• The GVA estimates have been compiled using data from DE, NDE and PC. • The estimates of GVA for the DE part have been compiled using splicing. • For the NDE part the estimates have been computed by analysing the Annual Reports of the Public Sector Companies using the methodology of the new base. • The PC part information has been compiled using the growth rates of the common companies in two years using CMIE data.	• The constant price estimates have been estimated using quantum (quantum sales of electricity) index on the Base year estimates after adjusting the Old series quantum index taking 2011-12 as 100. • The estimates are then

Table 2.2 Methodology for Back Series	
Current	**Constant**
• The estimates are then adjusted for FISIM to compile the GVA estimates adjusted for FISIM.	adjusted for FISIM to compile the GVA estimates adjusted for FISIM.
Gas	
• The current price GVA estimates have been compiled using data for NDE, PC and that of Bio Gas. • For estimates of GVA from NDE, information for the new series estimates has been obtained from Annual Reports of the Public Sector Companies using the revised methodology. • For the estimation of Gobar Gas, there have been no methodological changes. The estimates of GVA have been computed as the value of production at current prices, adjusted for share of KVIC in total bio gas plants installed up to current year from Ministry of Non-Conventional Energy and KVIC respectively. • For the PC part, the ratio of PC to NDE has been used for all the previous years since separate estimates for the backseries were not available. • The estimates are then adjusted for FISIM to compile the GVA estimates adjusted for FISIM.	• The Gobar Gas estimates at constant prices have been compiled by splicing the Old series estimates of Gobar Gas. • For the remaining portion, quantum index (quantum sales of gas) have been used after adjusting the old series quantum index (taking 2011-12 as 100) to compile the estimates at constant prices. • The estimates are then adjusted for FISIM to compile the GVA estimates adjusted for FISIM.
Water Supply	
• The GVA for the Water Supply sector has been compiled using data from General Government (GG), NDE, PC and the unorganised sector. • The estimates of the GVA for the GG and NDE have been obtained by analysing the Budget Documents and the Annual Reports of the Public Sector Companies respectively using the methodology of the new base. • For the GVA estimates for the household (HH) part, splicing has been done to arrive at the series of estimates at the new base.	• For the Water Supply sector, the GVA estimates at current prices for the back series have been deflated using CPI (IW) (Taking CPI for 2011-12 to 100 and then moving backward).
Remediation	
• The remediation sector is newly added in the new series consisting of two parts: sanitation and recycling. • The Sanitation estimates are derived from GG, PC and HH. The GVA estimates for the GG portion have been compiled by splicing. • The GVA estimates for the PC and the HH part of the new series estimates have been obtained by splicing separately the old series of GVA estimates for PC and HH. • The Remediation sector the GVA estimates are the sum of recycling part and Sanitation part.	• The Recycling portion of GVA at current prices has been deflated using WPI after adjusting WPI at 2011-12 as 100 to arrive the GVA estimate at constant prices. • For the Sewage portion the current prices estimates have been deflated using CPI (IW) after adjusting CPI at 2011-12 as 100.

The same methodology as adopted in the 2011-12 series has not been applied to the back series estimates due to the non-availability of the MCA-21 data in the back years. Consequently alternative data sources have been used.

Chapter-3
Construction

The Gross Value of Output (GVO) /Gross Value Added (GVA) of the Construction Sector in 2004-05 Series were compiled by the Commodity Flow Approach (CFA) on five basic materials namely; (i) cement & cement products (ii) iron & steel (iii) bricks & tiles (iv) timber and round wood and (v) fixtures & fittings. 15.7% and 34.8% of the output of the basic materials were added as other material and factor input respectively to arrive at total value of the output of the Construction Sector at the current prices. For constant price estimates, appropriate deflators were used on current price estimates.

2.   In new 2011-12 Series, the methodology adopted for estimating the total GVO and GVA from Construction, remains broadly the same as the one used in 2004-05 series except for some modifications and different data sources (as mentioned in para 3 below). In the new series GVA of Construction comprise of -(i) Dwellings, Other Buildings & Structures (DOBS) (ii) Construction in plantations and (iii) Mineral explorations. GVA of Dwellings, Other Buildings & Structures further consists of two components namely (i) pucca and (ii) kutcha. The former continues to be measured through the commodity flow approach, and the latter through the expenditure approach.

3.   The major revisions of the new series are – (i) use of MCA 21 database for private corporations (ii) revision in methodology for estimation of value of output used in construction for bricks & tiles (iii) addition of two more items in basic materials i.e. bitumen & bitumen mixtures and glass & glass products (iv) inclusion of service charges in 'Other materials' (v) use of NSS 70th round All India Debt and Investment Survey (AIDIS), 2013 for preparing benchmark estimates of rural residential buildings, urban residential buildings, non-residential buildings and other construction works and (vi) use of NSS 65th round Survey on Housing Conditions (2008-09) for obtaining ratios of pucca and kutcha construction for dwellings.

4.   Back Series estimates of GVA Construction at current and constant prices have been compiled by splicing method.

Chapter-4
Non-financial Service Sector

For estimation of back series of non-financial services sector for the private corporate and unorganized part, wherever, data were available, re-calculation method was preferred. The re-calculation approach gives different growth rate than in 2004-05 series. In the absence of actual data, splicing was done for the estimation. There have been differences in the growth rates in the new and old series.

(i) One of the major reasons for the difference is that in the old series the estimates were prepared for the rural and urban which were estimated on the basis of CPI (Agricultural Labour –AL) and CPI (Industrial Worker –IW) respectively compiled by Labour Bureau. For the 2011-12 series, industry specific CPIs have been used in the compilation. The same industry specific CPIs have been compiled for the back series calculations.

(ii) In the Unorganised Trade sector, sales tax has been used in the new series to move the benchmark estimates, the same has been used in the back series. In the old series, Gross Trading Index (GTI) was used at current and constant prices. This has led to a lower contribution of the trade sector. The deflated sales tax growth rate was much lower than the GTI growth in the years 2007-08 to 2010-11 due to the weighted WPI. In the absence of a trade survey, the benchmark estimates of unorganised sector trade of 1999-00 survey estimates were moved using GTI to 2004-05 and the same were moved using GTI compiled for the 2004-05 series. This also led to an over estimation of the trade sector in 2011-12 when the benchmark estimate of 2011-12 based on the unincorporated survey of 2010-11 for the trade sector was compiled. It may be mentioned that GTI was compiled using CC wise specific WPI's while Sale Tax was deflated at the aggregate level. Differences are due to process of computation of deflators.

(iii) In the old series, the bench mark estimates of some of the sectors were moved (for the period 2004-05 to 2011-12) using the inter survey growth of Labour Input of 1999-2000 & 2004-05 wherein the labour force increase has been 60 million while the actual increase during 2004-05 and 2011-12 has been 14 million. This would vary across sectors. In the new series the bench mark estimates were either moved using sector specific indicators or current prices deflated using appropriate deflators.

(iv) In the communication sector minutes of usage was used instead of subscribers growth. The growth in subscribers is 3 to 4 times the minutes of usage being used in the new series.

(v) The back-series estimates of the General government and DE have been compiled using the splicing method as there is no change in the estimation methodology of this sector and the changes are attributed only to the coverage and reclassification of industries into General administration and DE.

(vi) Table 4.1 presents the methodology of moving the bench mark estimates followed in the current series (2011-12) and the old (2004-05) series and the methodology followed for compiling the back series is presented in tables 4.2. The organised part data come from annual accounts for making estimates at current prices. The organised part consists of Public Sector and Private Corporate.

Table 4.1 : Methodology adopted				
	2011-12		**2004-05**	
Activity	**Current Prices**	**Constant Prices**	**Current Prices**	**Constant Prices**
	Indicators	**Indicators**	**Indicators**	**Indicators**
Trade				
Maintenance and repair of motor vehicles and motor cycles and Sale of Motor Vehicles	Inflated using weighted WPI	Org: Deflated by weighted WPI Unorg:Sales growth (Automobile domestic sales trend from SIAM website)	Org by RBI growth Unorg by Gross Trading Income	Org deflated by WPI Unorg by GTI at constant prices

Table 4.1 : Methodology adopted				
	2011-12		2004-05	
Activity	**Current Prices Indicators**	**Constant Prices Indicators**	**Current Prices Indicators**	**Constant Prices Indicators**
Whole sale trade except of motor vehicles	NDE from Annual reports Corp: MCA data Unorg: Index of Sales Tax turn over	Both Organised and Unorganised part deflated using weighted WPI	corp by RBI growth Unorg by Gross Trading Income	corp deflated by WPI Unorg by GTI at constant prices
Repair of personal and household goods	Services Tax growth		Org by RBI growth Unorg by Gross Trading Income	Org deflated by WPI Unorg by GTI at constant prices
Retail trade (except motor vehicle)	DE from Budgets Corp:- MCA data Unorg:-Index of Sales Tax turn over		Org by RBI growth Unorg by Gross Trading Income	Org deflated by WPI Unorg by GTI at constant prices
Hotels & Restaurants	Corporate Growth	Both Organised and Unorganised part deflated using weighted WPI	Org by RBI growth Unorg by Gross Trading Income	Org deflated by WPI Unorg by GTI at constant prices
Land Transport	Corp- MCA NDE from annual reports Unorg: Constant price estimates inflated using CPI (Transport)	Org. and Unorganised part moved using Vehicle Growth	Constant price estimates inflated by WPI	Org. and Unorganised part moved using Vehicle Growth
Water Transport	Corp- MCA NDE from annual reports Unorg: Constant price estimates inflated using WPI	For both Org. &Unorg. part base year estimates moved using index of Cargo handled	Constant price estimates inflated using WPI	For both Org. & Unorg. Part base year estimates moved using index of Cargo handled
Air Transport	Corp- MCA NDE from annual reports Organised only.	Public moved using air volume index. Private moved using combined growth of passenger and cargo handled.	Public as obtained from annual reports Constant price estimates inflated using WPI	Public moved using air volume index. Private moved using combined growth of passenger and cargo handled.
Storage and warehousing	NDE from annual reports Corp- MCA Unorg: Corporate Growth	Org. part deflated using storage index &Unorg. Part deflated using WPI	Public storage from accounts Moved using CPI (General)	Deflated by storage index Unorg Deflated by CPI (General)
Supporting & auxiliary	Combined	Organised part-Combined Growth	Combined Growth	Organised part-Combined Growth

Activity	2011-12		2004-05	
	Current Prices Indicators	**Constant Prices** Indicators	**Current Prices** Indicators	**Constant Prices** Indicators
Table 4.1 : Methodology adopted				
transport activities	Growth of (Water+RoadT ransport) for current prices	of (Water+Road+Air) and for Unorg. Part- Combined Growth of (Water+Road) for constant prices	of (Water+RoadTrans port) for current prices	of (Water+Road+Air) and for Unorg. Part-Combined Growth of (Water+Road) for constant prices
Courier activities	DE from Budgets Unorg: Service Tax growth	Both org. part and unorg. Part deflated using CPI of (Transport & communication part)	Org using corporate growth rate of communication Unorg LI method	Org deflated by WPI and unorg by CPI (General)
Cable operator			Org using corporate growth rate of communication Unorg LI method	Org deflated by WPI and unorg by CPI (General)
Other communication	NDE from annual reports Service tax growth of telecom services	Minutes of usage growth	Corp using RBI growth Unorg using private corp deflator	Moved using subscribers growth
Recording & publishing	Recording & Broadcasting corporate growth	Both org. part and unorg. Part deflated using CPI of (Transport & communication part)	Prasar Bharti-org part Unorg- LI method	Bench mark deflated by CPI (General)
Real Estate Activities	NDE from annual reports Corporate Growth	NDE-CPI (Gen)	Real estate Corp using RBI growth Unorg by LI method	Corp – real estate deflated by WPI
Administrative and support services+ Renting of machinery & equipment without operator, personal / household goods		Pvt.Corp& Coop: WPI	LI method	Deflated by CPI (General)
Computer and Related activities		Unorg: CPI (Misc)	NASCOMM growth for org & unorg	Deflated corp by WPI and unorg by CPI (General)
Legal activities			LI method	Deflated by CPI (General)
Accounting, book-keeping			LI method	Deflated by CPI (General)
Research and development & Other Professional Services +veterinary activities			LI method	Deflated by CPI (General)

Table 4.1 : Methodology adopted				
	2011-12		**2004-05**	
Activity	**Current Prices**	**Constant Prices**	**Current Prices**	**Constant Prices**
	Indicators	**Indicators**	**Indicators**	**Indicators**
Ownership of Dwellings	Constant prices of Rural estimate by inflating with appropriate indices. Urban part GVA compiled as (Gross rental – R&M).	Public part deflated using CPI Housing Index and unorg part of urban by moving the base year estimate with intercensal growth rate of dwellings. Rural estimate by estimating stock of houses and assuming a fixed rate of return	Constant prices of Rural estimate by inflating with appropriate indices. Urban part GVA compiled as (Gross rental – R&M).	Public part deflated using CPI Housing Index and unorg part of urban by moving the base year estimate with intercensal growth rate of dwellings. Rural estimate by estimating stock of houses and assuming a fixed rate of return
Coaching centres + Activities of the individuals providing tuition	GG from Budgets Private Corp from MCA Unorg: Growth in consumer expenditure on education & for Cooperative part moved with HH Growth.	Org. &Unorg. Both have been deflated using CPI (Education & Health) Respectively	Corp, unorg moved by growth in consumer expenditure	Deflated by CPI (General)
Education excluding Coaching			Public from budgets Rest by growth in consumer expenditure growth	Deflated by CPI (General)
Human health activities+ care services	GG from Budgets Private Corp from MCA Growth in consumer expenditure on Health& Cooperative part moved with HH Growth.		Public from budgets Growth in consumer expenditure on Health	Deflated by CPI (General)
Activities Of Membership Organisations n.e.c.	Private Corp from MCA Service Tax growth& Cooperative part moved with HH Growth.	Org. part deflated using CPI (Misc)	LI method	Deflated by CPI (General)
		Unorganised part deflated using CPI (misc services)		
Recreational, cultural and sporting activities	Private Corp from MCA Total consumption expenditure growth in Non-	For both Org. &Unorg part deflated using CPI (Recreation)		

Table 4.1 : Methodology adopted				
	2011-12		**2004-05**	
Activity	**Current Prices**	**Constant Prices**	**Current Prices**	**Constant Prices**
	Indicators	**Indicators**	**Indicators**	**Indicators**
	food items & Cooperative part moved with HH Growth.			
Personal Services	Private Corp from MCA Total consumption expenditure growth in Non-food items & Cooperative part moved with HH Growth.	For both Org and Unorg. part CPI (Misc)		

Table 4.2 : Methodology for Back-series		
Activity	**Current Prices**	**Constant Prices**
	Indicators	**Indicators**
Trade		
Maintenance and repair of motor vehicles and motor cycles and Sale of Motor Vehicles	Unorg: Inflated using weighted WPI	Org: Deflated by weighted WPI Unorg: Sales growth (Automobile domestic sales trend from SIAM website)
Whole sale trade except of motor vehicles	Corp:- old growth rates retained Unorg: Index of Sales Tax growth	Both Organised and Unorganised part deflated using weighted WPI
Repair of personal and household goods	Spliced- 2004-05 series	Spliced
Retail trade (except motor vehicle)	Corp: old growth rates retained Unorg: Index of Sales Tax growth	Both Organised and Unorganised part deflated using weighted WPI
Hotels & Restaurants	old growth rates retained for both org and unorg	Both Organised and Unorganised part deflated using weighted WPI
Land Transport	Corp + Unorg: Inflated by CPI (Transport & Communication)	Org + Unorg: moved by vehicle growth Public: Deflated by CPI (T & C)
Water Transport	Corp: moved by Corp Growth from CMIE Unorg: Inflated using WPI	Org + Unorg: Moved by cargo handled
Air Transport	Inflated by CPI (T&C)	Public: Moved by passenger volume index (Public) Private: Moved by passenger volume index (Private)
Storage and	Corp: CMIE growth	NDE: Deflated by CPI (T&C)

Table 4.2 : Methodology for Back-series		
Activity	**Current Prices**	**Constant Prices**
	Indicators	**Indicators**
warehousing	Unorg: CMIE growth	Corp + Unorg: Deflated by WPI
Supporting & auxiliary transport activities	Combined growth of air, water and land transport	Combined growth of air, water and land transport
Courier activities	DE from Budgets corp: old growth rates retained Unorg: Service Tax Growth	Deflated by CPI (T & C)
Cable operator	Corp: old growth rates retained Unorg: Service Tax Growth	Deflated by CPI (T & C)
Other communication	NDE from Annual reports corp: old growth rates retained Unorg: Service Tax Growth	Extrapolated by Minutes of usage Deflated by CPI (T & C)
Recording & publishing	corp: old growth rates retained Unorg: corporate Growth	Deflated by CPI (T & C)
Real Estate Activities	Org + Unorg: corp: old growth rates retained	NDE: Deflated by CPI (General) Corp :deflated by WPI Unorg: CPI (Misc)
Administrative and support services+ Renting of machinery & equipment without operator, personal / household goods		
Computer and Related activities		
Legal activities		
Accounting, book-keeping		
Research and development & Other Professional Services +veterinary activities		
Ownership of Dwellings	Splicing	Splicing
Coaching centres + Activities of the individuals providing tuition	Private corporate: old growth rates retained General Govt: spliced Unorg: consumption growth	Deflated by CPI (education)
Education excluding Coaching		
Human health activities+ care services	Private corporate: old growth rates retained General Govt: spliced Unorg: consumption growth	Deflated by CPI (medical)
Activities Of Membership Organisations n.e.c., Recreational, cultural and sporting activities, Personal Services	Private corporate: old growth rates retained Unorg: consumption growth	Deflated by CPI (misc)

Note: (1) org- organised includes GG, DE, NDE and private corporate sector
* (2) LI method- LI*GVAPW*CPI*

Public Administration and Defence

Splicing method has been used to compile the backseries estimates at both current and constant prices for the back series

Methodology adopted during 2004-05 series	Methodology adopted during 2011-12 series	Methodology adopted for Back series
Railway includes DE and Non-Departmental enterprises (NDE) only and major share is of DE Railways.	Inclusion of Private railways. Revised FISIM and CFC estimates	1. Component-wise earnings from 2004-05 to 2011-12 both at current and constant prices have been spliced and added to arrive at the back-series estimates of earnings (output) from year 2004-05 to 2011-12.
Estimation methodology: DE=CE+ Rent+Interest+ Profit of relevant industry (budget document used) NDE: By analyzing Annual Reports	**Estimation methodology:** No change in estimation methodology of DE and NDE. Private Corporate: Estimates compiled by Production approach using MCA data.	2. Input (Intermediate consumption): Input (unadjusted for FISIM) at current and constant prices has been spliced to arrive at back-series estimates of Input (unadjusted for FISIM) from year 2004-05 to 2011-12. GVA (unadjusted for FISIM) at current and constant prices has been derived by subtracting Input (unadjusted for FISIM) from Total Earnings (Output).
		3. FISIM estimates obtained from the concerned unit are subtracted from the above estimates to arrive at the backseries estimates of GVA (adjusted for FISIM).

Chapter-5
Financial Services

Table- 5.1 Methodology adopted for 2011-12Series, 2004-05 Series and Back-series				
Current price estimates				
Sub-sector	**2004-05 series**	**2011-12 series**	**Back-Series**	**Data limitations, if any**
S-121 Reserve Bank of India	Banking Division of RBI was considered as market enterprise	Entire RBI considered as non-market and GVA computed by cost method	Same as 2011-12 series	NIL
S-122 Commercial banks	Definition of FISIM was total interest received – total interest paid,	FISIM computed using reference rate[1] method $FISIM_i = (LR_i - rr) * $ avg loans/ advances + $(rr - DR_i) * $ avg deposits, for i-th financial intermediary	• Same as 2011-12 series for scheduled commercial banks (i.e., SBI and associates, other nationalised banks, private banks and foreign banks) • FISIM for each of these types of scheduled commercial banks computed using reference rate method for each year • The ratio of new FISIM to old FISIM for commercial banks derived. • This ratio has been applied on old FISIM of Regional Rural Banks and cooperative banks to estimate their new FISIM	All the details for RRBs and cooperative banks were not available for all the previous years. Therefore, ratio of new FISIM/ old FISIM as derived for the commercial banks has been applied on old FISIM of RRBs and cooperative banks to estimate the new FISIM of RRBs and cooperative banks
S-125 Other Financial intermediaries	Same as above	Same as above	• Ratio New FISIM / old FISIM derived for base year 2011-12 and applied on old FISIM for years 2004-05 to 2010-11 to estimate	Entire data for deriving FISIM based on reference rate method not available for earlier years. New data set for

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[1]*Reference Rate (rr) is a risk-free rate of interest prevalent in the economy. The same, for 2011-12 base year, has been computed as the harmonic mean of the average lending rate (LR) and average deposit rate (DR) observed in a financial year as per the annual reports of organised market financial intermediaries (S-122 and S-125).*

Table- 5.1 Methodology adopted for 2011-12Series, 2004-05 Series and Back-series				
Current price estimates				
Sub-sector	**2004-05 series**	**2011-12 series**	**Back-Series**	**Data limitations, if any**
			the new FISIM • New set of estimates received for NGNBFCs from year 2011-12 onwards from the RBI. This data resulted in slightly higher output in base year for the NGNBFCs. This ratio has then been applied on new FISIM derived in previous step for each year in the back-series.	NGNBFCs not available for earlier years.
S-126 Financial auxiliaries (regulatory authorities)	Not included	Included in 2011-12 series	Average of the ratio of GVA in 2011-12 and 2012-13 for the regulatory authorities to total GVA (about 0.0004) has been applied on the GVA of earlier years	Data for all regulatory authorities for all the previous years not available
S-126 Financial auxiliaries (insurance agents)	Included in insurance sector	Excluded from insurance (S-128) and included here	Same as 2011-12 series	NIL
S-127 unorganised sector (private moneylenders and others)	Taken as 1/3rd of organised NBFIs	Output estimated using data from AIDIS 2013, RBI study of 2007 on interest rate of moneylenders, credit to households from Scheduled commercial banks from RBI and 67th round NSS	Methodology same as 2011-12 series	NIL
S-128 & S-129 insurance corporations and pension funds		No change from 2004-05 series	No change	NIL

Table- 5.1 Methodology adopted for 2011-12Series, 2004-05 Series and Back-series				
Current price estimates				
Sub-sector	2004-05 series	2011-12 series	Back-Series	Data limitations, if any
S-123 and S-124 investment funds	Not included	Included. But no effect on GVA	Same as 2011-12 series	Data for previous years not available

Constant price estimates:

The constant price estimation in financial sector is done by volume extrapolation method. The index for deflating volume measure has been changed in this base. Earlier, Wholesale Price Index (WPI) was used, whereas, index for non-financial sector GVA is being used in the current series as deflator. The volume measures have not undergone any change. Therefore, the changes in constant price estimates are primarily due to change in the index and change in GVA in the base year. For NBFIs and financial auxiliaries, constant price estimates have changed due to change in value of output (net receipts) and index.

Table- 5.2 Methodology adopted for 2011-12Series, 2004-05 Series and Back-series				
Constant price estimates				
Sub-sector	2004-05 series	2011-12 series	Back-Series	Data limitations, if any
S-121 RBI	Index – implicit index of current price to constant price for commercial banks	• Volume – same as 2004-05 series • Index – same as 2004-05 series	Same as 2011-12 series	NIL
S-122 Commercial banks, RRBs and cooperative banks	• Index - Wholesale Price Index (WPI) • Index was being applied only on change in nominal value of aggregate credit and deposit	• Volume – same as in 2004-05 series • Index – Ratio of current price GVA to constant price GVA of entire non-financial sector, unadjusted for FISIM • Index is applied on the aggregate nominal value of credit and deposit	Same as 2011-12 series	NIL. The Statistical Tables related to Banks in India for the years 2004-05 to 2011-12 has been considered uniformly for all the years to get the volume estimates of deposits and loans and advances.
S-122 Post Office Savings Bank		Procedure identical to 2004-05 series	Same as 2011-12 series	NIL

Table- 5.2 Methodology adopted for 2011-12Series, 2004-05 Series and Back-series				
Constant price estimates				
Sub-sector	**2004-05 series**	**2011-12 series**	**Back-Series**	**Data limitations, if any**
S-125 Other Financial intermediaries	• Volume measure – deflated receipts • index - WPI	• Volume measure – deflated receipts (output), computed using the method described in table on current price estimates • Index – same as above, use of index on receipts – same as above	Same as 2011-12 series	As described for current price estimates
S-126 Financial auxiliaries (regulatory authorities)	Same as above	Same as above	Same as 2011-12 series	NIL
S-126 Financial auxiliaries (insurance agents)	Same as above	Same as above	Same as 2011-12 series	NIL
S-127 unorganised sector (private moneylenders and others)	• Volume measure – deflated receipts • index - WPI	• Volume measure – deflated receipts (output), computed using the method described in table on current price estimates • Index – same as above	Same as 2011-12 series	NIL
S-128 & S-129 insurance corporations and pension funds	• Volume measure – life fund and sum assured plus bonus for life insurance, receipts net of claims for non-life insurance • index - WPI	• Volume measure – same as previous base • index – same as above	Same as 2011-12 series	NIL
S-123 and S-124 investment funds	not covered	GVA is zero, as the funds do not have any employees of its own	Same as 2011-12 series	NIL, for computing GVA.

Chapter-6
General Government/Departmental Enterprises

Table- 6.1: Methodology adopted for 2011-12 and 2004-05 Series and for Back-series

Sector	2004-05 Series	2011-12 Series	Back Series
General Government (Admin) (NVA Estimates)			
1. Construction (Repair and Maintenance) 2. Water Supply 3. Education 4. Medical 5. Public Administration and Defence	NVA=Compensation of employees (CE) =Wages and Salaries+Pension. Compensation of employees for the relevant industry compiled by analyzing budget documents of Central Government, State Government, Local Bodies and Autonomous Institutes.	No change in the estimation methodology. There is however a) an improvement in the coverage in local bodies and autonomous institutions; b) reclassification of industries into DE and admin.	Splicing Method, to account for the improvement in coverage of local bodies and autonomous institutions and changes due to reclassification.
Public Administration and Defence (Constant Prices)	Current Price Estimates of Public Administration and Defence was deflated using price deflator.		
Departmental Enterprises (DE) (NVA Estimates)			
1. Agriculture 2. Forestry 3. Manufacturing 4. Electricity 5. Ports, Pilotages, Light Houses 6. Road Transport 7. Water Transport 8. Trade & Hotels 9. Railway 10. Communication 11. Construction	CE+Rent+Interest+Profit of relevant industry		

Chapter-7
Expenditure and Other Aggregates

- **Product Taxes and Product Subsidies**

Sector	2004-05 Series	2011-12 Series (including revised data sources)	Back Series
Taxes	The tax related information available in the budget documents were earlier classified as direct and indirect taxes.	The tax related information available in the budget documents are classified as product and production taxes.	Taxes were reclassified based on the component wise information available in previous series. Following taxes were treated as product taxes: Customs, Excise, Sales tax, Service tax and other indirect taxes like electricity tax, taxes on passengers and goods, taxes on vehicle etc. and spliced component wise. Land revenue and Stamp duty were classified as production taxes and spliced to get the back-series estimates.
Product Taxes (at constant prices)	Current price estimates of indirect taxes were deflated using price deflators.	Volume extrapolation using suitable indicator for each component.	
Subsidies	The relevant items in the budget documents were earlier classified as Subsidies only. The total subsidies were netted of the production subsidies as given in the annual reports of NDEs, to obtain the product subsidies.	Classified as product and production subsidies. Further the losses of the DEs treated as imputed subsidies are a part of production subsidies.	The total subsidy netted of the production subsidies (losses of Departmental enterprises treated as imputed subsidy and production subsidies as given in the annual reports of Non-Departmental Enterprises) gave the Product subsidy for the years 2004-05 to 2011-12 in line with the new series. Splicing procedure was then adopted to get the back series estimates.
Product Subsidies (at constant prices)	Price deflator used.	IPD of total GVA been used.	

- **Government Final Consumption Expenditure (GFCE)**

  GFCE (Compensation of employees + Net purchase of goods and services + CFC)

  GFCE estimation methodology in the new base includes an increased coverage of local bodies and autonomous institutes. Also, the expenditure of autonomous institutes involved in Research and development has been capitalized as per SNA 2008 recommendation and hence removed from GFCE. The back-series estimates were then compiled using the splicing method.

- **Private Final Consumption Expenditure:** The estimates of PFCE for the years prior to 2011-12 both at current and constant price have been arrived at by using splicing technique at the disaggregated levels.

- **Exports & Imports**: The estimates of Exports and Imports for the back series at current and constant prices have been arrived at by splicing.

- **Gross Capital Formation (GCF) and Savings Back Series :**

  a. Gross Capital Formation (GCF) refers to the aggregate of gross additions to fixed assets (fixed capital formation), increase in stocks of inventories or change in stocks (CIS) and valuables.

  b. In 2004-05 series, GFCF comprised of (i) construction assets including plantations and (ii) machinery and equipment including increment in livestock, software and expenditure on research and development.

  c. In new series 2011-12, GFCF comprise of four broad categories of assets as per System of National Accounts, 2008 – (i) Dwellings, Other Buildings & Structures (DOBS) (ii) Machinery & Equipment (ME) (iii) Cultivated Biological Resources (CBR) and (iv) Intellectual Property Products (IPP). In new series 2011-12, for estimation of change in stocks of inventories, the book values of change in stocks for the corporations are revalued. Expenditure of households on valuables has been included as savings in the form of physical assets of households.

  d. Back series estimates of GFCF have been compiled using the simple splicing technique as is done for construction assets, which accounts for about 57% of GFCF. Further, Institution-wise estimates of 2004-05 and 2011-12 series has been mapped before splicing. It is to be noted that asset-wise mapping was found to be difficult in 2004-05 and 2011-12 series. Similar methodology has been adopted for compilation of back series estimates of Change in Stocks, Valuables and Savings.

Abbreviations

- CC - Compilation category
- CCS - Cost of Cultivation Study
- CE - Compensation of Employees
- CEA - Central Electricity Authority
- CFC - Consumption of Fixed Capital
- CIS - Change in Stocks
- c.i.f. - Cost, insurance and freight
- COFOG - Classification of Functions of Government
- COICOP - Classification of Individual Consumption According to Purpose
- CPI - Consumer Price Index
- CSO - Central Statistics Office
- DE - Departmental Enterprises
- DES - Directorate of Economics and Statistics
- DEP - Depreciation in book of accounts
- DGCI&S - Directorate General of Commercial Intelligence and Statistics
- EUS - Employment and Unemployment Survey
- FISIM - Financial Intermediary Services Indirectly Measured
- f.o.b. - Free on board
- FSI - Forest Survey of India
- GCF - Gross Capital Formation
- GDP - Gross Domestic Product
- GFCE - Government Final Consumption Expenditure
- GFCF - Gross Fixed Capital Formation
- GG - General Government
- GNDI - Gross National Disposable Income
- GNI - Gross National Income
- GTI – Gross Trading Income
- GVA - Gross Value Added
- GVO - Gross Value of Output
- HH - Household
- IC - Intermediate Consumption
- IBM - Indian Bureau of Mines
- IPP - Intellectual Property Products
- IW - Industrial Wood
- MF - Mutual Funds
- MI - Mixed Income
- NAS National Accounts Statistics
- NBFI - Non Banking Financial Institution
- NCF - Net Capital Formation
- NCS Net Capital Stock
- NDCU - Non Departmental Commercial Undertakings
- NDE - Non Departmental Enterprises
- NDP - Net Domestic Product
- n.e.c. - Not elsewhere classified
- NFCF - Net Fixed Capital Formation
- NFCS - Net Fixed Capital Stock
- NIC - National Industrial Classification
- NNDI - Net National Disposable Income
- NNI - Net National Income
- NPISH - Non-Profit Institutions Serving Households
- NVA - Net Value Added
- NTFP - Non Timber Forest Products
- OS - Operating Surplus
- PC - Private Corporations
- PE - Provisional Estimates
- PFCE - Private Final Consumption Expenditure
- RBI - Reserve Bank of India
- RE - Revised Estimates
- ROW - Rest of the World
- SDR - Special Drawing Right
- SFC - State Financial Corporation
- SNA - System of National Accounts
- SOA - Sequence of Accounts
- TTM - Trade and Transport Margin
- TOF - Trees outside forest
- WPI - Wholesale Price Index