

## ESTIMATES OF CAPITAL FORMATION PRESENT STATUS & ISSUES

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### Abstract

*It is a well-known fact that there is an urgent need to re-energize Uttar Pradesh's economy, including both agricultural and the non-farm sector. A number of recent initiatives undertaken intend to augment the capital formation, which could contribute positively in this regard. Capital formation is also likely to contribute in improving the poverty scenario. Looking at the village-level scenario for the districts, the current analysis attempts to create the importance of capital formation enjoyed by them, which in essence reflects their future growth potential. The paper concludes by acknowledging the potential role of capital formation in this regard.*

## Introduction

Uttar Pradesh is Located in the Northern region of India, Uttar Pradesh has a population of 19.96 corore, making it India's most populous state (16% of India)• Occupies an area of 240, 928 sq km (9% of India)• The State covers a large part of the highly fertile and densely populated upper Gangetic plain• Shares an international border with Nepal and is bounded by the Indian states of Uttaranchal, Himachal Pradesh, Haryana, Delhi, Rajasthan, Madhya Pradesh, Chhattisgarh, Jharkhand and Bihar• The state is divided into 72 districts 312tehsils, and 821 community blocks.(RURAL POULATION=79% in 2001)

Uttar Pradesh (UP) is the second largest economy in India after Maharashtra, contributing 8.17% to India's total GDP • Net State Domestic Product (NSDP) of the state at current prices in 2007-2008 was 303 crore Rs. • UP has a predominantly agrarian economy, agriculture being the highest contributor to the GSDP Economic Profile • Tertiary sector's contribution is the maximum (60%) • 30% of the GSDP is contributed by the primary sector which includes agriculture, cultivation, fishery, mining activities, etc. Primary Sector • Largest producer of wheat, sugarcane, tobacco and potato in the country and share varies from 30 to 50% of the country's production • One of the highest irrigation intensities at 66% • Share of the work force engaged in agriculture is about 73% Secondary Sector • Sugar, Cotton fabrics and Agro-based industries are the three most important • Largest share of Small Scale units in the country with 12% of over 2.3 million units • Leading manufacturer of office machinery in the country (25%) • India's fourth largest software exporter (US\$ 1 billion) • Labour efficiency is higher in UP (26) than the National Average (25)Tertiary Sector• One of the top tourist destinations in India, with almost 25% of the All-India foreign tourists visiting Uttar Pradesh • More than 71 million domestic tourists in 2003 • Agra was visited by more than 8 million domestic and 825,000 foreign tourists in 2006, followed by Varanasi, Lucknow, Allahabad, Vrindaban and Mathura Social Indicators • UP has a literacy rate of 56.27% as per the Census 2001

## **Background**

Capital formation is one of the important indicators for assessing the growth potential of the economy. For the balanced regional development, estimates of gross capital formation, capital stock and consumption of fixed capital are very much required.

Keeping the importance of GCF in view, State started preparing the estimates of Gross Fixed capital formation in 1999-2000. Since then the estimates are being prepared for every year on regular basis.

Seeing the data availability at State level only the expenditure approach is adopted for the measurement of GFCF and the whole economy is classified by user industries on the same lines as done for the gross domestic product (GDP).

Each industrial activity is further divided into public and private sectors wherever relevant. The Public Sector consists of Administrative Departments, Departmental Commercial Undertakings (DCU), Local Bodies, Non Departmental Commercial Undertakings (NDCU), Central Non Departmental Commercial Undertakings (CNDCU) and Supra-Regional Sectors.

So far as the private sector is concerned the areas covered are Agriculture, Animal Husbandry, Forestry and Logging, Fishing, Mining and quarrying, Manufacturing(organised and unorganised), Construction, Electricity, Gas and Water supply,Transport Storage and Communication, Trade, Hotels and Restaurant and Banking and Insurance & other services etc.. In the private sector different methods are being used.

## **Investment Trends**

Capital formation in 1950s was low as 7.8% of GDP, which improved gradually in next few decades with constant focus on improvement in physical stock. Over time, GCF has more than quadrupled to the current 35.8% levels of GDP. Rise in capital formation has been particularly higher post liberalisation that began in early 1990s. In 2005, it rose to 30% and has stayed there since then. India also witnessed surge in economic growth during this period to 9% levels.

GCF gained consistently through 1980s, through focus on Five-Year Plans. The impetus received in 1990s, primarily through liberalisation led to a rise in investments, particularly in the past one decade.

There are many factors that have aided rise in investments, particularly increase in savings and the process of de-licensing, among others. Savings improved due to rise in incomes and also due to factors such as spread of branch banking that extended the reach of banking to the remotest parts of country. As bank branches proliferated, financial savings saw a consistent rise since the 1980s.

Savings Investment Gap Domestic savings largely fund investments in India, but tapping foreign capital flows is also crucial to improve capital formation further. The historic savings-investment gap of 1-3% of GDP has traditionally been funded by foreign capital flows. Foreign capital inflows can address investments constraints in infrastructure and other areas. However, the continuing economic crisis in the US and the Euro-zone raises concerns about sustainability of capital flows into India

### **Terminology Used**

#### **Capital Formation-**

Capital Formation indicates the magnitudes and growth of productive potential of an economy. Gross Capital Formation estimates additions in gross fixed assets, increase in inventories or change in stock .

$$GCF = GFCF + CIS$$

#### **Value of change of inventory**

The value of change of inventory is recorded in the capital account is equal to value of inventory acquired less the value of inventory disposed of during the accounting period

#### **Gross Fixed Capital Formation-**

GFCF is measured by the total value of producer's acquisition less disposal of fixed assets during the accounting period plus certain addition to the value of non produced assets e.g. improvement of land etc.

Fixed assets Produced as output from processes of production and used repeatedly, more than one year, in the process of production.

**Financial assets:**

Asset that entitles its owner, the creditor to receive a payment or series of payments from the other unit, the debtor. Examples are cash, deposits, loans and advances etc.

**Non Financial assets:**

Can be produced or non produced assets

**Non Produced Assets:**

Non produced assets consists of assets that are needed for production but not produced through production process. It may also be classified as Tangible assets like Land, uncultivated forests and Fisheries, Mineral deposits and Intangible assets like patented entities, leases and transferable contracts, purchased good will etc. For these ownership rights have to be established.

**Estimation Methodology**

**GROSS FIXED CAPITAL FORMATION INCLUDES :**

- ❖ Durable goods( the lifetime of which is one year or more) acquired by producers.
- ❖ Improvements and alteration of the durable goods which significantly extend the expected life-time or productivity of assets.
- ❖ New construction and major improvements which extend its life period.
- ❖ Reclamation and improvement of land and the development and extension of timber tracts, orchards, plantations and similar other agricultural holdings.
- ❖ Breeding stocks, draught animals, dairy cattle and the like.
- ❖ Dealers' margins, service charges, taxes and other transfer costs in regard to transaction of such assets form part of capital formation.
- ❖ Mineral exploration whether successful or not successful form part of GFCF

- ❖ Construction or alteration of family dwellings for military personnel and capital outlays of defense enterprises on ordnance and clothing factories.
- ❖ Outlays on newly constructed dwellings (either by households or industries) and expenditure on major improvements and alterations of residential buildings form part of fixed capital formation
- ❖ Expenditure on land clearance, irrigation works, plantation and cultivation of new timber tracts, new fruit and sap bearing trees, vines etc. which yield products after a number of years.
- ❖ Clearance and a forestation of timber tracts and forests is classified under land improvement activity and included in gross fixed capital formation..
- ❖ All forestation programmes.
- ❖ Soil conservation activity undertaken by the public sector for conservation of forests.
- ❖ Cost associated with transfer of ownership of fixed assets including taxes paid( e.g. purchase of good will patented entities).

#### **Public Sector:**

The economic and purpose classification of the state government budget gives the expenditure on building, other construction, road construction, machinery, transport, second hand assets, renewal and replacement of building, road transport equipments, machinery and other construction. The expenditure incurred on the above and related items were taken as the capital expenditure. The brief description for estimating GFCF by Industry of use is stated as under.

#### **Administrative departments:**

Administrative departments comprises Government departments and Local Administrative Institutions whose concern is to organize for community but not normally to sell. These common services which cannot be otherwise economically provided. The present G.F.C.F. estimates includes only the state Government Administrative departments.

The State budget documents of various departments are analyzed to get the expenditure for the estimating year by industry of use on Buildings, Roads and Bridges, Other construction, Transport, Machinery and Equipments and Software.

### **Departmental commercial undertakings :**

The finance department of state has classified forest department, irrigation department, Govt. press and industry department as DCUs. The major capital expenditure items under DCUs have been covered in the respective public administration.

### **Local Bodies**

The statement of accounts of urban and rural local bodies are analyzed to capture the expenditure on various type of assets. The expenditure on types of assets were then classified by industry of use. As the number of local bodies is quite large and therefore it is not possible to analyze the budget of all the local bodies of the state.

Thus considering the manpower and financial resources the coverage is restricted to all nagar nigams, all nagar palika parishads, one nagar panchayat in each district, all zila parishads, all development authorities, all jal sansthan, all cantonment boards and one gram panchayat in each community development block.

### **NDCUs**

The list of NDCUs are collected from Bureau of Public Enterprises and the Balance Sheet of all NDCUs are obtained and analyzed to get the net addition to the Fixed Capital. Considering the nature of functional use the NDCUs are clubbed with the respective industry of use.

### **Supra Regional Sector**

Supra Regional Sector consists of Railways, Communication, Banking and Insurance. These sectors are not co terminus with the geographical boundaries of the state. The GFCF estimates for this sector are allocated and communicated to the state by CSO.

**Private Sector**

A brief description of Methodology used for different sectors is stated below :-

**Agriculture –**

The results of the latest available survey of “All India Debt and Investment Survey (AIDIS)”, is used to get information of household Expenditure on improvement of land, Orchards, Plantation, Irrigation sources, Agriculture Machineries, Transport Equipments, Farm Houses and other items of fixed assets.

**The expenditure figures are raised according to the table given below:**

ITEM	QUANTUM (Source)	PRICE INDICATOR
1-Improvement/ reclamation of land	Area reclaimed Reported under Annual plan	Index of wages of rural unskilled labour
2-Orchards &plantation	Additional area under fruit crops.	-do-
3-Farm houses &other construction	Agri. production index (volume)	-do-
4-Wells & other irrigation sources	Addition of the no. of new wells (Sankhikiya diary)	-do-



ITEM	QUANTUM (Source )	PRICE INDICATOR
5-Agri. Machinery & other equipment	state income	WPI of machinery & transport equipment
6-Transport equipment in agri. Field.	-do-	-do-
7-Other exp. Including furniture & fixtures	Agri. Prod. (volume Index)	Index of wages of rural unskilled labor
8-Live stock used as fixed asset	Total value of output from live stock	-do-

#### **Animal Husbandry –**

The increment in livestock of various categories are taken as estimated in animal husbandry sector for preparing value of output of animal husbandry. The value of livestock is obtained by multiplying the number of the livestock by their respective prices.

#### **Forestry and Logging –**

To arrive at Private Sector GFCF from Public Sector GFCF, the percentage of Public sector GFCF which is prescribed by CSO from time to time is used.

#### **Fishing –**

The results of respective cattle census conducted by Animal Husbandry Department U.P. are used to get the information on mechanized and non mechanized boats and other major equipments. The data of cattle census are also used to prepare the figures of traditional crafts and fishing gears and are projected using annual growth rate for the subsequent years. Expenditure is calculated on the basis of prices obtained from various districts of the State to estimate GFCF.

**Mining and quarrying –**

The results of latest Enterprise Survey on mining and quarrying are used to estimate the GFCF of this sector. For subsequent years the GFCF is estimated by raising the base figure using the corresponding increase in the GVA of this sector.

**Manufacturing-**

The estimates of GFCF of organized manufacturing sector is prepared directly on the basis of Annual Survey of Industry (ASI) report published by CSO (IS wing).

**Manufacturing-**

The estimates for unorganized sector is being prepared on the basis of the information available from NSS 62nd Round survey(2005-06) on Unorganized Manufacturing in U.P. The net addition to fixed assets per enterprise and estimated numbers of enterprises were used to capture the estimates of GFCF for 2005-06. For subsequent years the GFCF of unregistered manufacturing sector is raised in the ratio of GFCF and GSDP of 2005-06 to get the estimates of GFCF .

**Construction –**

The estimates of GFCF is being prepared on the basis of the results obtained from latest available AIDIS survey report. The report gives data on expenditure relating to residential plots, building and other construction for farm and non-farm business separately for rural and urban areas.

The estimates of subsequent years is prepared by using the increase in the production items used in construction activities during 2002-03 to subsequent year and the corresponding construction index prepared by DES,UP.

**Electricity, Gas & Water Supply****Electricity –**

For estimating the GFCF of electricity sector the ratio of private

sector GVA to public sector GVA is multiplied with GFCF of Public sector ( State corporations ).

### **Gas –**

The number of Bio-Gas Plant supplied by CSO was multiplied by average construction cost to get the GFCF estimates.

### **Water Supply –**

This sub sector is already covered under the local bodies.

### **Transport, Storage & Communication –**

Railway and Air Transport and Communication estimates being Supra-Regional Sectors are supplied by C.S.O. The estimates of Transport by other means are obtained by utilizing the report of latest Enterprise Survey. The estimates of subsequent years are prepared by using the increase in motor vehicles on roads during the survey period to subsequent years and by using WPI on transport equipments.

Estimates for storage are based upon the results of latest Enterprise Survey on Storage. The GFCF of subsequent years is raised by the corresponding increase in GVA during that period.

### **Trade Hotels & Restaurant –**

#### **Trade**

The GFCF estimates are based on results of the report of latest Directory Trade, non directory trade and own account Establishment Survey and State level results on Small Trading Units of India.

For the subsequent years net addition to fixed assets is prepared by raising the corresponding increase in GVA during that period and by using All India CPI for UNME.

## Trade Hotels & Restaurant –

### Hotels & Restaurant

The estimates of Hotels & Restaurant are being prepared by using the results of latest Enterprise Survey on Hotels & Restaurant. The estimates for subsequent years are prepared by using increase in GVA during that period and the WPI index for food product.

### Banking & Insurance –

It is covered under the Supra-Regional Sector.

### Real Estate, Ownership of Dwellings and Business Services -

The GFCF estimates for ownership of dwellings are being prepared according to the percentage share of GFCF in GDP of India.

### Other Services –

The estimates of this sector are based on results of latest Enterprise Survey Report on Establishment in service sector. Net addition to fixed assets for subsequent years are increased by using the corresponding increase in GVA of this sector and by using industrial worker Index.

### Present Status

The latest GFCF is available for the year 2008-09. Sector wise GFCF estimates from 2004-05 to 2008-09 is being given in the subsequent slides.

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**Gross Fixed Capital Formation in Administrative  
Departments of Public Sector**

Year	Amount in Lakh Rs.	Percentage Increase
2004-05	372785	-
2005-06	725561	94.63
2006-07	1036143	42.81
2007-08	1033389	(-)0.27
2008-09	1411196	36.56

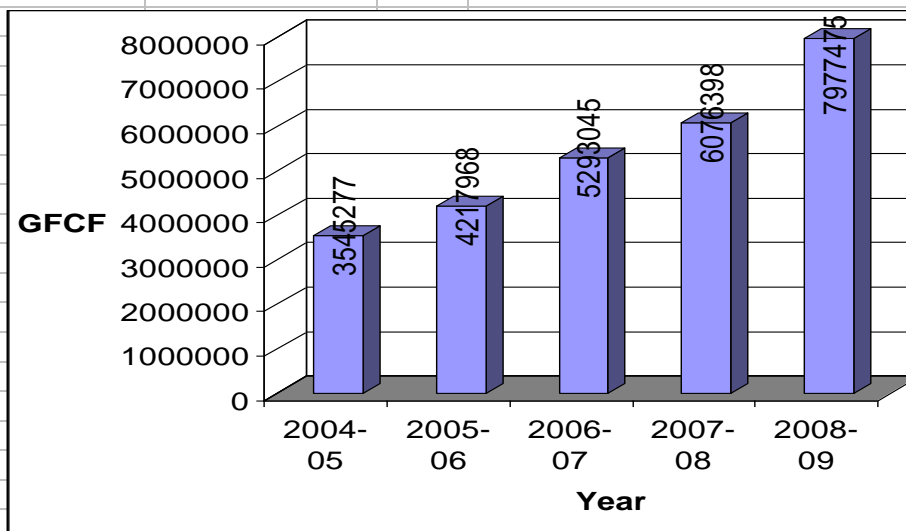
**Gross Fixed Capital Formation in Departmental  
Commercial Undertakings (DCUs) of Public Sector.**

Year	Amount in Lakh Rs .	Percentage Increase
2004-05	81005	-
2005-06	146759	81.17
2006-07	216113	47.26
2007-08	215676	(-)0.20
2008-09	256792	19.06

**Gross Fixed Capital Formation in Non-Departmental Commercial Undertakings (NDCUs) of Public Sector.**

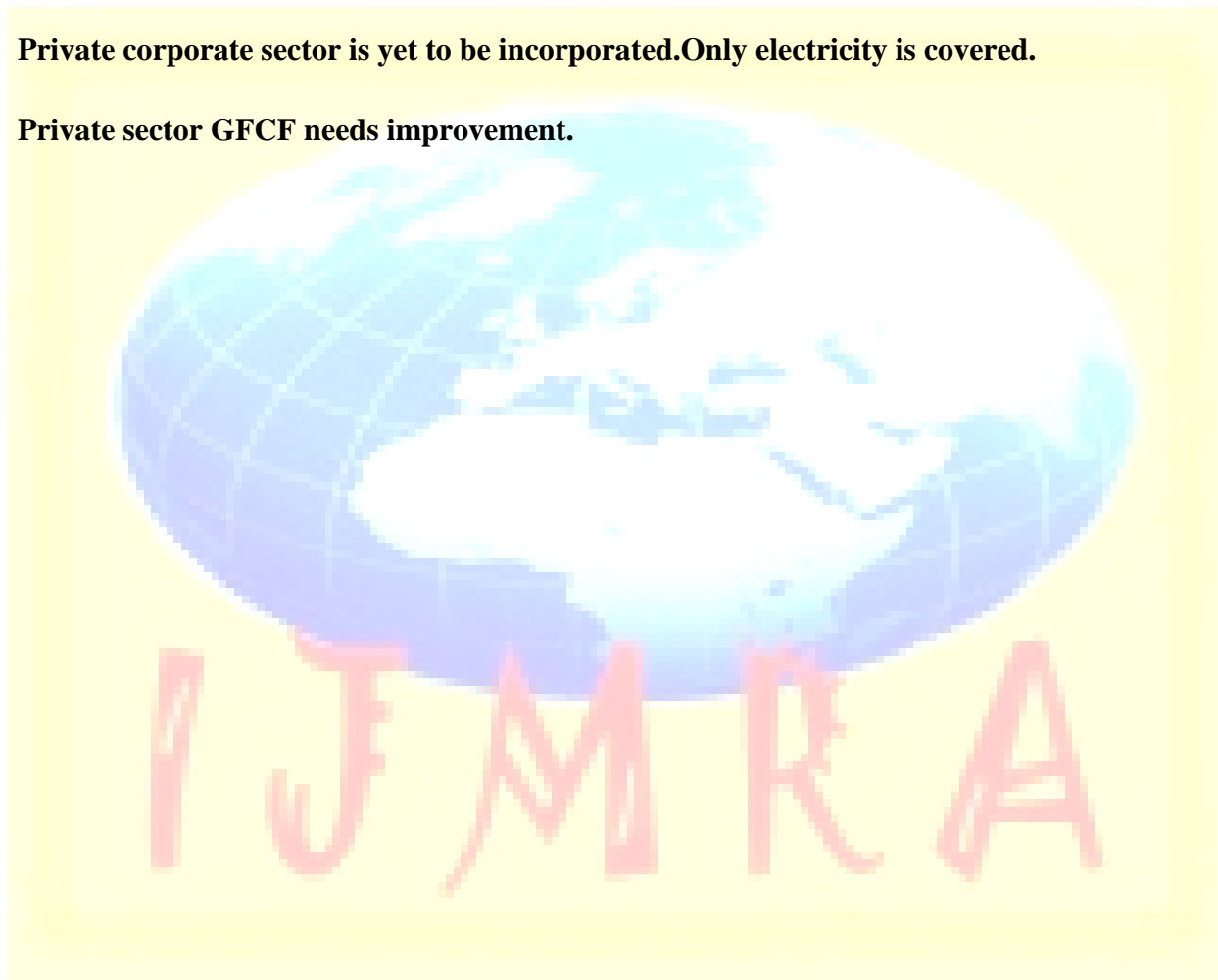
Year	Amount in Lakh Rs .	Percentage Increase
2004-05	22299	-
2005-06	103122	362.45
2006-07	167286	62.22
2007-08	146307	(-) 12.54
2008-09	82289	(-)43.76

**Gross Fixed Capital Formation in (Public+ Private), (Rs. Lakh)**



Issues

- Data of the central government NDCUs located in the state is yet to be incorporated.
- Timely availability of estimates of supra-regional sector related to state is yet to be ensured.
- Timely availability of Balance sheets from NDCUs of the state is yet to be ensured.
- Private corporate sector is yet to be incorporated. Only electricity is covered.
- Private sector GFCF needs improvement.



### Further Readings:

- Athukorla, Prem Chandra and Kunal Sen (2002)- “Saving, Investment and Growth in India”
- Bosworth, Barry, Susan Collins and Arvind Virmani (2006)- “Sources of Growth in Indian Economy”
- Barro, R.J and Sala-I-Martin (1995) – “Technological, Diffusion, Convergence and Growth”
- Krugman, Paul (1996) – “Pop Internationalism”
- Klenow, Peter J and Andres Rodriguez Clare (1997) – “Economic Growth: A Review essay”
- Mohan, Rakesh (2008) – “A Story of Sustained Savings and Investment in India”
- Young, Alwyn (1994) – “Tyranny of Numbers: Confronting the Statistical Realities of the East Asian Growth Experience”

