

An analytical study of macroeconomic indicators of Indian economy

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ABSTRACT

India economy, the third largest economy in the world, in terms of purchasing power, is going to touch new heights in coming years. As predicted by Goldman Sachs, the Global Investment Bank, by 2035 India would be the third largest economy of the world just after US and China. It will grow to 60% of size of the US economy. This booming economy of today has to pass through many phases before it can achieve the current milestone of 9% GDP. Trade liberalization, financial liberalization, tax reforms and opening up to foreign investments were some of the important steps, which helped Indian economy to gain momentum. Textile manufacturing is the second largest source for employment after agriculture and accounts for 26% of manufacturing output. The main objective of this research paper is to analyze the trend of macroeconomic indicators of the Indian economy and also to make a comparative study of the central and state deficits in public finance.

Key Words: Gross Domestic Product, Fiscal Deficit, Industrial Policy, Factor Cost, Per Capita Income

INTERODUCTION

As per the advance estimates of GDP for 2009-10 released by the Central Statistical Organization (CSO), the economy is expected to grow at 7.2 per cent in 2009-10, with the industrial and the service sectors growing at 8.2 and 8.7 per cent respectively. India's gross domestic product (GDP) grew by 6 per cent during October to December 2009, over the corresponding quarter of the previous year, as per data released by the CSO. The economic activities which registered significant growth in the third quarter of 2009-10 over the corresponding period in 2008-09 are 'mining and quarrying' at 9.6 per cent, 'manufacturing' at 14.3 per cent, 'construction' at 8.7 per cent, 'trade, hotels, transport and communication' at 10 per cent and 'financing, insurance, real estate and business services' at 7.8 per cent.

According to the latest estimates available on the Index of Industrial Production (IIP), the index of mining, manufacturing and electricity, registered growth rates of 9.6 per cent, 14.3 per cent and 4 per cent, respectively in Q3 of 2009-10, as compared to the growth rates of 2 per cent, 0.5 per cent and 2.9 per cent in these industries in same period in 2008-09. The key indicators of construction sector, namely, cement and finished steel registered growth rates of 8.5 per cent and 7.7 per cent, respectively in Q3 of 2009-10.

THE ECONOMIC SCENARIO

Foreign institutional investors (FIIs) were net investors of US\$ 4.37 billion in equity and US\$ 2.09 billion in debt instruments in the month of March 2010, according to the data released by Securities and Exchange Board of India (SEBI). The number of registered FIIs was 1713 as on March 31, 2010 and the total FII inflow in equity during January to March 2010 was US\$ 4.54 billion while it was US\$ 4.71 billion in debt.

As on March 26, 2010, India's foreign exchange reserves totaled US\$ 277.04 billion, an increase of US\$ 24.71 billion over the same

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period last year, according to the Reserve Bank of India's Weekly Statistical Supplement. Moreover, India received FDI worth US\$ 20.92 billion during April-December 2009, taking the cumulative amount of FDI inflows from August 1991 to December 2009 to US\$ 127.46 billion, according to the Department of Industrial Policy and Promotion.

Six core infrastructure industries grew at 4.5 per cent in February 2010 against 1.9 per cent during the corresponding month last year, primarily due to increased output in electricity. The six infrastructure sectors—crude, petroleum refinery products, coal, electricity, cement and finished steel—that constitute 26.68 per cent in IIP, recorded a growth of 5.3 per cent in the period April-February 2009-10, as against 2.9 per cent in the same period last year.

Moreover, according to latest data from RBI, loan disbursement by scheduled commercial banks, including regional rural banks, recorded 16.04 per cent growth at the end of March 12, 2010, on a year-on-year basis. This is above RBI's projection of 16 per cent credit growth in this financial year. Of the more than 200 companies from over 50 countries that form part of the World Economic Forum's Global Growth Companies (GGC) Community, India today has the second largest representation, with a total of 18 GGCs. Indian GGCs come from every sector, with a strong representation in information technology and electronics, retail, consumer goods and banking.

To maintain its current status and to achieve the target GDP, Indian economy has to overcome many challenges.

CHALLENGES BEFORE INDIAN ECONOMY

Population Explosion

This monster is eating up into the success of India. According to 2001 census of India, population of India in 2001 was 1,028,610,328, growing at a rate of 2.11% approx. Such a vast population puts lots of stress on economic infrastructure of the nation.

Thus India has to control its burgeoning population.

Poverty

As per records of National Planning Commission, 36% of the Indian population was living Below Poverty Line in 1993-94. Though this figure has decreased in recent times but some major steps are needed to be taken to eliminate poverty from India.

Unemployment

The increasing population is pressing hard on economic resources as well as job opportunities. Indian government has started various schemes such as Jawahar Rozgar Yojna, and Self Employment Scheme for Educated Unemployed Youth (SEEUY). But these are proving to be a drop in an ocean.

Rural Urban Divide

It is said that India lies in villages, even today when there is lots of talk going about migration to cities, 70% of the Indian population still lives in villages. There is a very stark difference in pace of rural and urban growth. Unless there isn't a balanced development Indian economy cannot grow.

These challenges can be overcome by the sustained and planned economic reforms.

THESE INCLUDE

1. Maintaining fiscal discipline
2. Orientation of public expenditure towards sectors in which India is faring badly such as health and education.
3. Introduction of reforms in labour laws to generate more employment opportunities for the growing population of India.
4. Reorganization of agricultural sector, introduction of new technology, reducing agriculture's dependence on monsoon by developing means of irrigation.
5. Introduction of financial reforms including privatization of some public sector banks.

OBJECTIVES

1. To analyze the trend of macroeconomic indicators of the Indian economy.

2. To make a comparative study of the central and state deficits in public finance.

Scope of the Study

The scope of the study includes the following things:-

Time Period

The time period for which the data has been collected is from 1999 to 2009.

Selected Parameters

3. National income: Population, gross domestic product, net domestic product, consumption on fixed capital, net income from abroad.

4. Public finance: gross fiscal deficit, net fiscal deficit.

SOURCES OF DATA COLLECTION

According to the needed research of the project; the researcher pursued secondary data collection method. Researcher has used web sites related to Indian Economy & R.B.I information broacher for secondary data collection. The data mainly collected from the government reports and policy documents, books and articles published in journals and news papers.

TECHNIQUE OF ANALYSIS

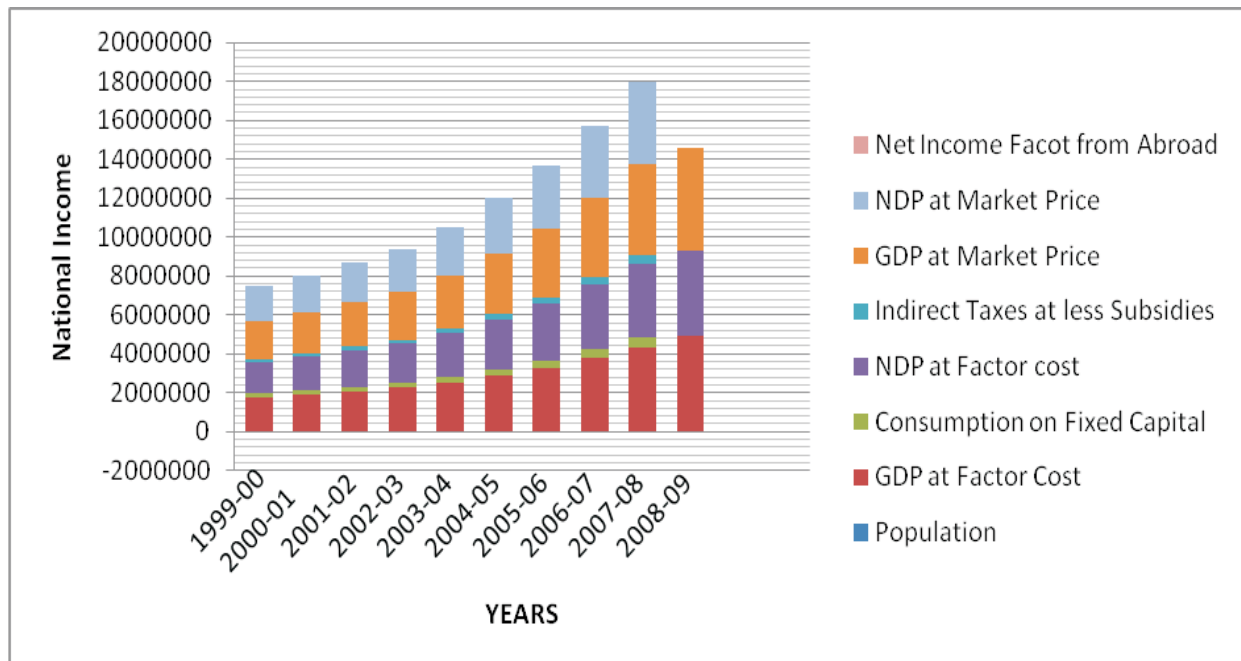
For analysing the collected data Two way ANOVA Technique and Bar diagrams have been used with the help of a leading Statistical Package SPSS 17.0

Table 1: National Income

| | Popul ation | GDP at Factor Cost | Consu ption on Fixed Capital | NDP at Factor cost | Indirect Taxes at less Subsidies | GDP at Market Price | NDP at Market Price | Net Income Factor from Abroad |
|---------|----------------|--------------------------|--|--------------------------|---|---------------------------|---------------------------|---|
| 1999-00 | 1001 | 1786526 | 181421 | 1605104 | 165510 | 1952036 | 1770614 | -15431 |
| 2000-01 | 1019 | 1925017 | 201817 | 1723199 | 177297 | 2102314 | 1900496 | -22733 |
| 2001-02 | 1040 | 2097726 | 228298 | 1869429 | 181226 | 2278952 | 2050655 | -20068 |
| 2002-03 | 1056 | 2261415 | 250477 | 2010907 | 193146 | 2454561 | 2204053 | -16690 |
| 2003-04 | 1072 | 2538170 | 280048 | 2258122 | 216450 | 2754620 | 2474572 | -20708 |
| 2004-05 | 1089 | 2877701 | 329041 | 2548660 | 271706 | 3149407 | 2820366 | -22375 |
| 2005-06 | 1106 | 3282385 | 380312 | 2902074 | 304358 | 3586743 | 3206432 | -26116 |
| 2006-07 | 1122 | 3779384 | 437038 | 3342346 | 349789 | 4129173 | 3692136 | -29778 |
| 2007-08 | 1138 | 4320892 | 509450 | 3811442 | 402508 | 4723400 | 4213949 | -23845 |
| 2008-09 | 1154 | 4933183 | - | 4353400 | - | 5321753 | - | - |

Two Way ANOVA Table

| | Intraclass Correlation | 95% Confidence Interval | | F Test with True Value 0 | | | |
|---------------------|---------------------------|-------------------------|----------------|--------------------------|-----|-----|-------|
| | | Lower Bound | Upper Bound | Value | df1 | df2 | Sig |
| Single Measures | 0.486 | 0.240 | 0.797 | 8.569 | 8 | 56 | 0.000 |
| Average Measures | 0.883 | 0.717 | 0.969 | 8.569 | 8 | 56 | 0.000 |

Graph 1: National Income**ANALYSIS AND INTERPRETATION**

According to table 1 Indicators like Population, Gross Domestic Product, Consumption on Fixed Capital, Net Domestic Product, and Indirect Tax at Less Subsidies of National Income from 1999 to 2009 showing increasing trend. F-test is also applied to know

whether there is a significant difference between the various macro economic variables in different years. The computed value of F-test (8.569) at (8, 56) degree of freedom and also at 5 percent level of significance is greater than the tabulated value. Hence, we reject our hypothesis. So it is concluded that there

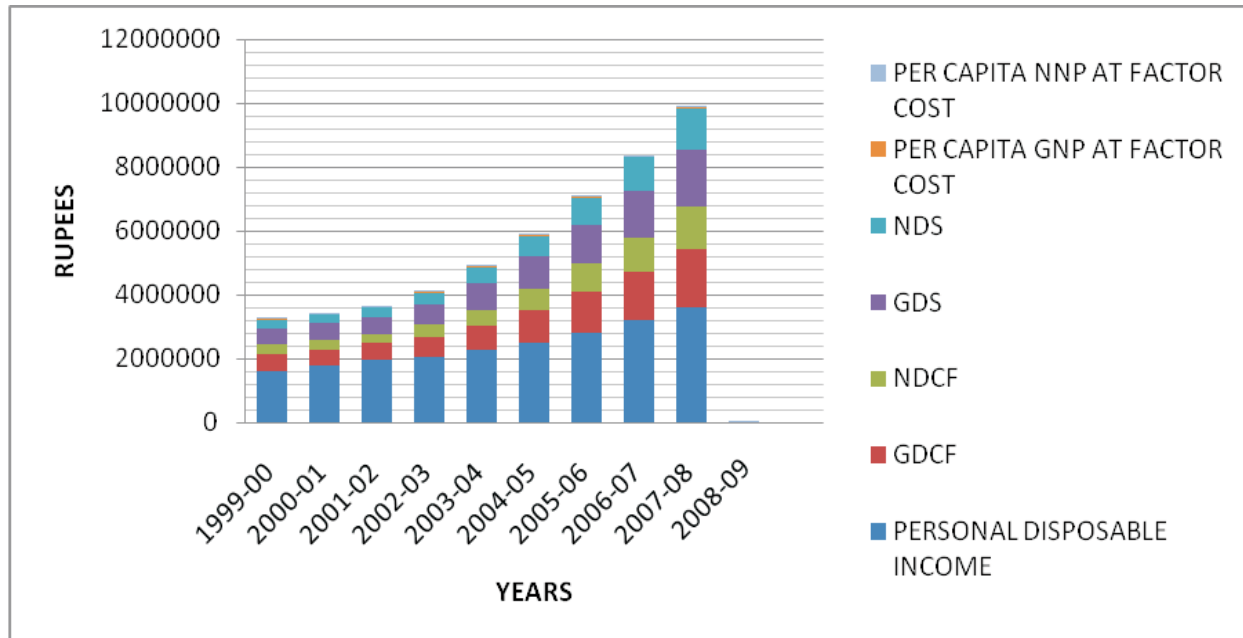
Table 2: Macro Economic Indicators Aggregates at Current Price

| | Personal Disposable income | GDCF | NDCF | GDS | NDS | Per Capita GNP At Factor Cost | Per Capita NNP At Factor Cost |
|---------|----------------------------|---------|---------|---------|---------|-------------------------------|-------------------------------|
| 1999-00 | 1617965 | 506244 | 324823 | 484256 | 302835 | 17693 | 15881 |
| 2000-01 | 1773250 | 511788 | 309970 | 499033 | 297215 | 18668 | 16688 |
| 2001-02 | 1954839 | 520656 | 292359 | 534885 | 306588 | 19977 | 17782 |
| 2002-03 | 2064839 | 618035 | 367528 | 646521 | 396014 | 17693 | 18885 |
| 2003-04 | 2282148 | 759325 | 479277 | 820685 | 540637 | 23484 | 20871 |
| 2004-05 | 2495015 | 1011212 | 682171 | 997873 | 668832 | 26220 | 23198 |
| 2005-06 | 2806427 | 1272630 | 892318 | 1228026 | 847714 | 29442 | 26003 |
| 2006-07 | 3182710 | 1521805 | 1084768 | 1475108 | 1038071 | 33419 | 29524 |
| 2007-08 | 3592172 | 1845513 | 1336064 | 1779614 | 1270165 | 37760 | 33283 |
| 2008-09 | - | - | - | - | - | - | 37490 |

Two Way ANOVA Table

| | Intraclass Correlation | 95% Confidence Interval | | F Test with True Value 0 | | | |
|------------------|------------------------|-------------------------|-------------|--------------------------|-----|-----|------|
| | | Lower Bound | Upper Bound | Value | df1 | df2 | Sig |
| Single Measures | 0.63 | 0.38 | 0.87 | 12.90 | 8 | 48 | 0.00 |
| Average Measures | 0.92 | 0.81 | 0.98 | 12.90 | 8 | 48 | 0.00 |

Graph 2: Macro Economic Indicators



is significant difference between various macro economic variables in different years.

According to table 2 personal disposable income & gross domestic capital formation (GDCF), from 1999 to 2008 is on growing trend, net domestic capital formation (NDCF) there are up & down from 1999 to 2002 but from 2003 to 2008 it is continuously increasing, gross domestic saving (GDS) from 1999 to 2008 is on growing trend, net domestic savings (NDS) there is decrease in 2000 but from 2002 to 2008 it is continuously increase, per capita gross national product from 1999 to 2002 is increase but in 2003 it is decrease then from 2004 to 2008 it is continuously increasing, per capita net national product at factor cost from 1999 to 2009 is growing trend. The computed value of F-test (12.90) at (8, 48) degree of freedom

and also at 5 percent level of significance is greater than the tabulated value. Hence, we reject our hypothesis. So it is concluded that there is significant difference between various macroeconomic indicators of the Indian economy in different years.

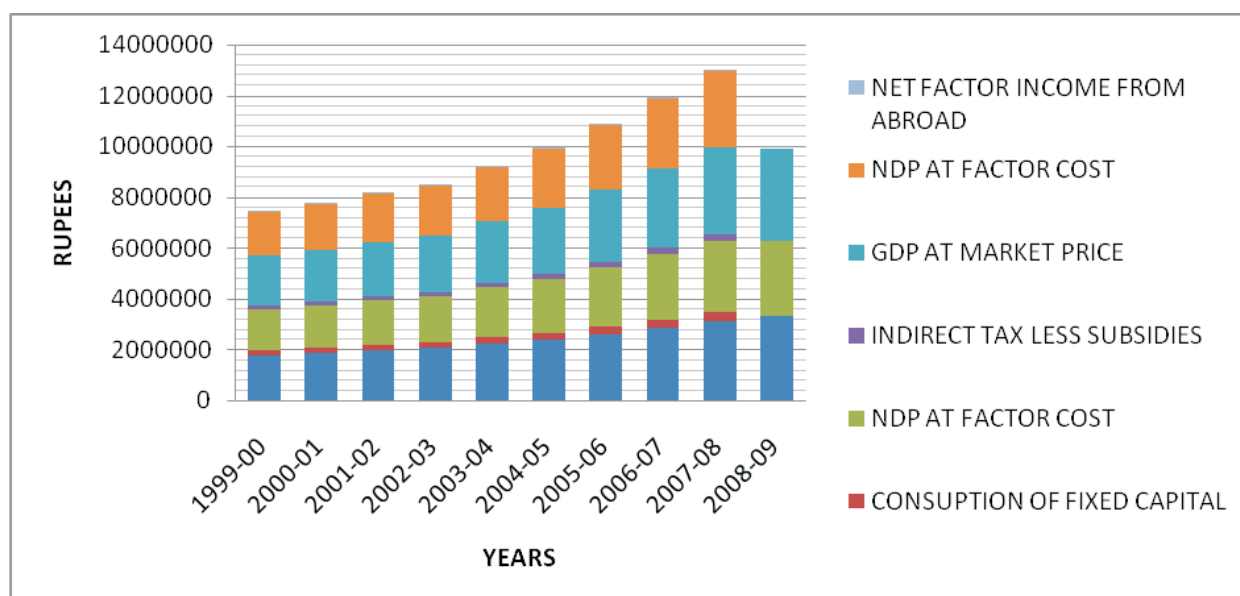
According to table 3 gross domestic product at factor cost from 1999 to 2009 is on increasing trend, consumption on fixed capital from 1999 to 2008 is on growing trend, net domestic product at factor cost from 1999 to 2008 is continuously increasing, indirect tax less subsidies from 1999 to 2001 increase but in 2002 it was decreasing then from 2003 to 2008 it is on growing trend, gross domestic product at market price from 1999 to 2009 is increasing trend, net domestic product at factor price from 1999 to 2008 is on growing trend, net factor income from abroad there is a fluctuating trend from 1999 to 2009. F-test

Table 3: Macro-Economic Indicators at Factor Cost

| Years | GDP at factor cost | Consumption of fixed capital | NDP at factor cost | Indirect Tax Less Subsidies | GDP at market price | NDP at factor cost | Net Income Factor From Abroad |
|---------|--------------------|------------------------------|--------------------|-----------------------------|---------------------|--------------------|-------------------------------|
| 1999-00 | 1786525 | 181421 | 1605103 | 165510 | 1952035 | 1770613 | 15431 |
| 2000-01 | 1864301 | 193852 | 1670446 | 166410 | 2030711 | 1836856 | 22428 |
| 2001-02 | 1972606 | 208469 | 1764137 | 164045 | 2136651 | 1928182 | 20139 |
| 2002-03 | 2048286 | 223652 | 1824601 | 168847 | 2217133 | 1993448 | 17876 |
| 2003-04 | 2222758 | 241441 | 1981317 | 179969 | 2402727 | 2161286 | 19500 |
| 2004-05 | 2388768 | 262499 | 2126269 | 213297 | 2602065 | 2339566 | 21085 |
| 2005-06 | 2616101 | 287426 | 2328675 | 228841 | 2844942 | 2557516 | 20660 |
| 2006-07 | 2871120 | 316406 | 2554714 | 248911 | 3120031 | 2803623 | 21264 |
| 2007-08 | 3129717 | 350068 | 2779648 | 272999 | 3402716 | 3052647 | 14853 |
| 2008-09 | 3339375 | - | 2957698 | - | 3609425 | - | - |

Two Way ANOVA Table

| | Intraclas Correlation | 95% Confidence Interval | | F Test with True Value 0 | | | |
|------------------|-----------------------|-------------------------|-------------|--------------------------|-----|-----|-------|
| | | Lower Bound | Upper Bound | Value | df1 | df2 | Sig |
| Single Measures | 0.909 | 0.785 | 0.978 | 61.261 | 7 | 35 | 0.000 |
| Average Measures | 0.984 | 0.956 | 0.996 | 61.261 | 7 | 35 | 0.000 |

Graph 3: Macro Economic Indicators

is also applied to know whether the macroeconomic indicators differ significantly in different years or not. It is concluded that there is significant difference.

This table 4 shows that Gross Fiscal Deficit increase from 2000 to 2002 but in 2003 it decrease then from 2004 to 2006 it is increase but in 2007 it is decrease then from 2008 to

2010 it is continuously increasing. Net Fiscal Deficit there is increment from 2000 to 2002 but in 2003 it is decrease then again from 2004 to 2006 it is increasing but in 2007 it is decrease then from 2008 to 2010 it is on growing trend.

Gross Primary Deficit it is increase from 2000 to 2002 then from 2002 to 2005 it is decrease then from 2008 to 2010 it is on growing trend .Revenue Deficit it is increase from 2000 to 2003 but from 2003 to 2005 it is decrease then

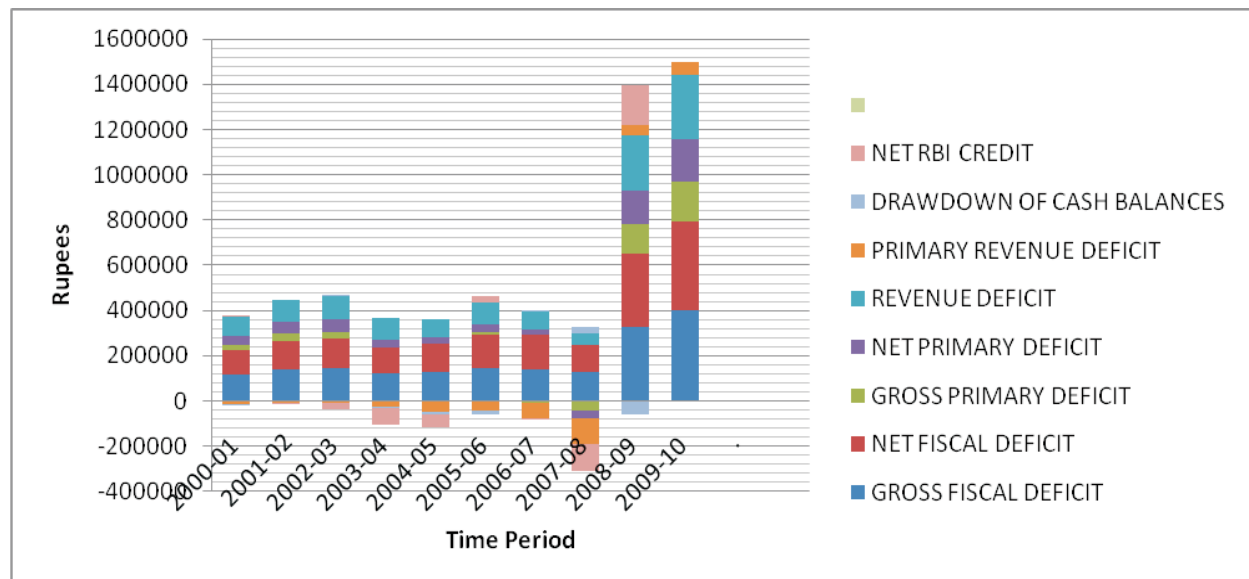
Table 4: Public Finance Key Indicators of the Central Government

| Years | Gross Fiscal Deficit | Net Fiscal Deficit | Gross Primary Deficit | Net Primary Deficit | Revenue Deficit | Primary Revenue Deficit | Drawdown of cash Balances | Net RBI Credit |
|---------|----------------------|--------------------|-----------------------|---------------------|-----------------|-------------------------|---------------------------|----------------|
| 2000-01 | 118816 | 107854 | 19502 | 41351 | 85234 | -14080 | -1197 | 6705 |
| 2001-02 | 140955 | 123074 | 33495 | 51152 | 100162 | -7298 | -1496 | -5150 |
| 2002-03 | 145072 | 133829 | 27268 | 53647 | 107879 | -9925 | 1883 | -28399 |
| 2003-04 | 123273 | 115558 | -815 | 30008 | 98261 | -25827 | -3942 | -76065 |
| 2004-05 | 125794 | 126252 | -1140 | 31705 | 78338 | -48596 | -8130 | -60177 |
| 2005-06 | 146435 | 145743 | 13805 | 35145 | 92299 | -40331 | -20888 | 28417 |
| 2006-07 | 142573 | 151245 | -7699 | 23497 | 80222 | -70050 | 4518 | -3024 |
| 2007-08 | 126912 | 120714 | -44118 | -29256 | 52569 | -118461 | 26594 | -116772 |
| 2008-09 | 326515 | 322011 | 133821 | 148353 | 241273 | 48579 | -60367 | 176397 |
| 2009-10 | 400996 | 392882 | 175485 | 186545 | 282735 | 57224 | | |

Two Way ANOVA Table

| | Intraclass Correlation | 95% Confidence Interval | | F Test with True Value 0 | | | |
|------------------|------------------------|-------------------------|-------------|--------------------------|-----|-----|-------|
| | | Lower Bound | Upper Bound | Value | df1 | df2 | Sig |
| Single Measures | 0.603 | 0.356 | 0.859 | 13.153 | 8 | 56 | 0.000 |
| Average Measures | 0.924 | 0.815 | 0.980 | 13.153 | 8 | 56 | 0.000 |

Graph 4: Public Finance Key Indicators of the Central Government



in 2005 it is increase but from 2006 to 2007 it is decrease than again from 2008 to 2009 it is increase.

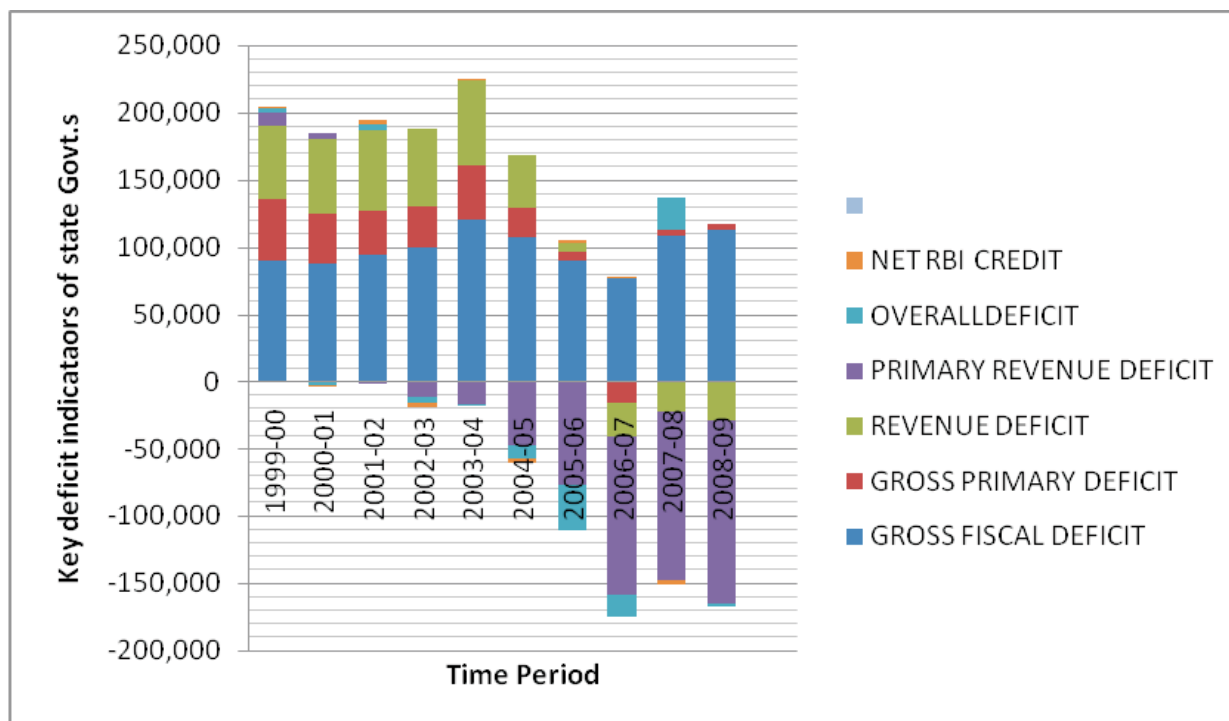
This table 5 explains that Gross Fiscal Deficit is decrease in 2000 but from 2001 to 2003 it is continuously increase but in from 2004 to 2006 decrease then from 2007 to 2009 it is on

growing trend. Revenue Deficit is increase from 1999 to 2001 but in 2002 it is decrease then again in 2003 it is increase again from 2004 to 2009 it is continuously decreasing. Net RBI credit is decreased in 2000 & then 2001 it increased. But in 2002 it again decreased then in 2003 it increased. In 2004 it decreased & then 2005 it increased. From 2006 to 2008 it continuously decreased.

Table 5: Key Deficit Indicators of the State Governments

| Years | Gross Fiscal Deficit | Gross Primary Deficit | Revenue Deficit | Primary Revenue Deficit | Overall Deficiy | Net RBI Credit |
|---------|----------------------|-----------------------|-----------------|-------------------------|-----------------|----------------|
| 1999-00 | 90,099 | 45,458 | 54,549 | 9,907 | 3,125 | 1,312 |
| 2000-01 | 87,923 | 36,937 | 55,316 | 4,331 | -2,378 | -1,092 |
| 2001-02 | 94,260 | 32,665 | 60,398 | -1,198 | 3,545 | 3,451 |
| 2002-03 | 99,726 | 30,699 | 57,179 | -11,848 | -4,291 | -3,100 |
| 2003-04 | 120,631 | 40,235 | 63,407 | -16,989 | -526 | 293 |
| 2004-05 | 107,774 | 21,353 | 39,158 | -47,263 | -10,232 | -2,705 |
| 2005-06 | 90,084 | 6,060 | 7,013 | -77,011 | -33,947 | 2,425 |
| 2006-07 | 77,509 | -15,654 | -24,857 | -118,021 | -16,078 | 640 |
| 2007-08 | 107,958 | 5,080 | -22,526 | -125,404 | 24,122 | -3,486 |
| 2008-09 | 112,653 | 4,270 | -28,426 | -136,809 | -2,524 | - |

Graph 5: Key Deficit Indicators of the State Governments



According to table 6 Gross Fiscal Deficit from 1999-2009 is on increasing trend, Gross Primary Deficit from 1999-2002 is increasing but from 2003-2009 is decreasing, Revenue Deficit 1999-2003 is increasing but from 2004-2009 is continuously decreasing. F-test is also

applied to know that the combined deficits of central and state governments vary significantly or not. The computed value of F-test (1.967) at (9, 18) degree of freedom and also at 5 percent level of significance is less than the tabulated value. Hence, we accept our hypothesis. So it is concluded that there

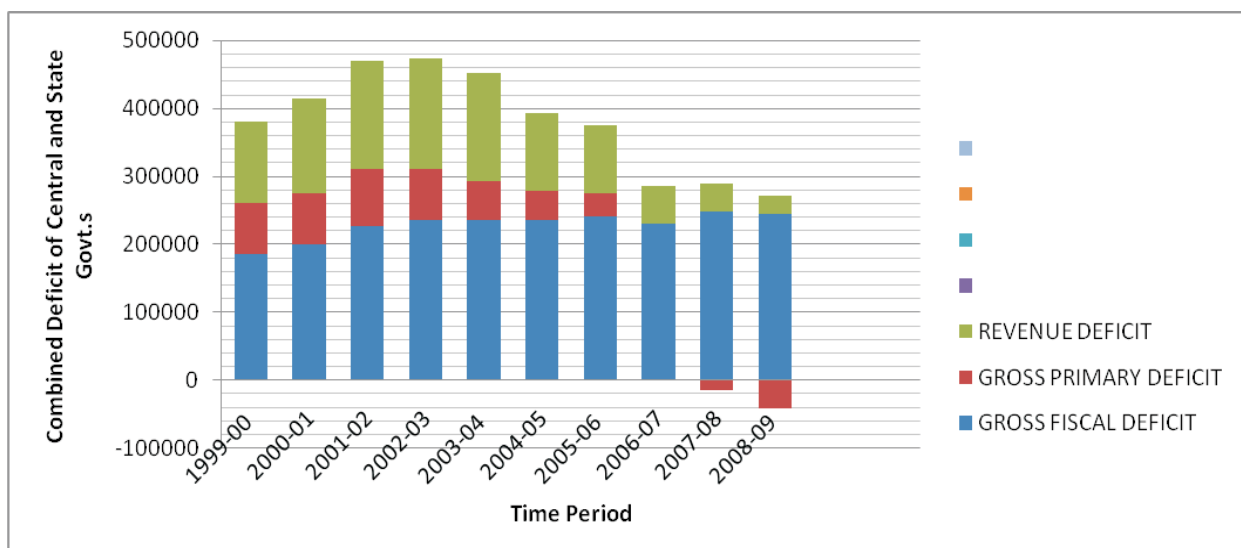
Table 6: Combined Deficits of Central and State Governments

| Years | Gross Fiscal Deficit | Gross Primary Deficit | Revenue Deficit |
|---------|----------------------|-----------------------|-----------------|
| 1999-00 | 184826 | 74375 | 121393 |
| 2000-01 | 199852 | 75035 | 138803 |
| 2001-02 | 226425 | 84039 | 159350 |
| 2002-03 | 234987 | 75927 | 162990 |
| 2003-04 | 234501 | 56928 | 159408 |
| 2004-05 | 234721 | 42409 | 114761 |
| 2005-06 | 239560 | 35583 | 99312 |
| 2006-07 | 230432 | -399 | 55366 |
| 2007-08 | 247831 | -15905 | 40959 |
| 2008-09 | 244460 | -43017 | 26758 |

Two Way ANOVA Table

| | Intraclass Correlation | 95% Confidence Interval | | F Test with True Value 0 | | | |
|------------------|------------------------|-------------------------|-------------|--------------------------|-----|-----|-------|
| | | Lower Bound | Upper Bound | Value | df1 | df2 | Sig |
| Single Measures | 0.244 | -0.123 | 0.677 | 1.967 | 9 | 18 | 0.106 |
| Average Measures | 0.492 | -0.489 | 0.863 | 1.967 | 9 | 18 | 0.106 |

Graph 6: Combined Deficits of Central and State Governments



is no significant difference between the combined deficits of central and state governments in different years.

RATIONALE OF THE STUDY

The public sector was forced to play a dominant role in developing the economy because the private sector neither had the necessary resources nor the will to undertake risks involved in large investments with long term perspective. For the first time since the introduction of economic reforms a decade ago, India posted a growth rate of 8.2 percent, which is seen as a significant achievement for economy. Needless to say, it took almost 40 odd years for India to transform from the Hindu rate of growth of 3 percent to almost 6 percent per fiscal. Several economists strongly believe that India must aim at a growth rate of over 8 percent every year and most important it should be able to sustain this growth rate consistently for at least another decade. If India can achieve a growth rate of over 8 percent every year consistently for the next two decades, by 2025 India could grow as high as US economy today.

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