



## Comparative Study of Agricultural Growth Rate Before and After Economic Reforms 1991 in India

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### Abstract

*India Adopted Economic reforms in 1991 after 43 years of Independence. Initially Indian Government were following public sector dominating and controlled economy. After independence first 10 years took for recovering in critical situation specially in agriculture. From 1960 to 2021 Year 1991 was middle of this period. 1991 reforms witnessed the drastic change in Indian economic policy. Initially India was controlled, planned, public sector dominating economy. After the reforms India decentralised, decontrol, liberalized different sector, open Indian door for foreign investors. Researcher tried to compare the situation of different sectors specially agriculture before and after reforms. It has been observed that agriculture improvement has not been seen after reforms. Researcher has tried to compare growth rate of agriculture and before and after reforms based on growth rates. Researcher has also tried to compare the growth rates of industry and service sector before and after reforms. Researcher has compared growth rates of different sectors in last 60 years.*

**Key Words :** Economic Reforms, growth rate, liberalization, decontrol, decentralization

### 1. Introduction and Background

The Economic profile of India was in complete distress at the time of independence. Being a typical case of colonial economy, India was serving a purpose of development not for the her-self but a foreign land- The United Kingdom. The social sector was a neglected area for the British rulers which had a negative impact on the production and productivity of the economy. Industrialization of India was also neglected by the colonizers, the infrastructure was not built to industrialize India but exploit its raw materials. The pre-independence period was altogether a period of near stagnation showing almost no change in the structure of production or in the level of production. The overall performance of India under the British rule was very low.

Once India became independent, it was a real challenge for the Government of the time to go for a systematic organization of the economy. Independent India was declared to be planned and a mixed economy. The state was given an active and dominant role in the economy. Initially first 30 years growth rate of India was slow but after the major policy reforms taken by the government India achieved good growth rate. 24th July 2021 witnessed completion 30 years of economic reforms. Year 1991 is middle of the pre reform and post reform period. Researcher try to find the growth rate of agriculture sector 30 years before the reforms and 30 years after reforms. Researcher has also tried to compare growth rate of industrial and service sector after reforms. This is high time to evaluate the growth rate of three sectors of the Indian Economy, so the effects of Economic reforms can be evaluated in proper way.



## 2. Statement of the problem:

Basically, India is agricultural country. Still 50 % of Indian Population depend upon the agriculture. Indian agriculture plays very important role in economic development. It has been observed that agricultural growth has not speed up as compared to industrial and service sector after the reform. Until unless agricultural development will not become sustainable reforms strategy will not be successful.

## 3. Relevance of the study:

**1. Academic relevance-** Academically study of agricultural growth pattern and effects of reform on agriculture will be helpful in Indian concern. It is of prime importance to the student of economics in general and agricultural economics in the Indian scenario.

**2. Research Relevance-** In current Situation After reforms 30 years passed, it is become important to research the trends of agricultural growth. reason to know why agriculture is not improved as compared to Industry and Service sector.

**3. Policy Relevance –** Economic reforms are not successful in agricultural sector. This kind of research is relevant for policy maker, Study will help to policy maker for making relevant policy for agriculture.

## 4. Objectives of Study:

1. To study the growth rate of agricultural sector before and after reforms.
2. To study the growth rate of industrial and service sector after reforms
3. To compare the growth rates of agriculture industry and service sector
4. To check the effect of Economic reforms on agriculture.

## 5. Statement of Hypothesis:

Hypothesis N0 1

$H_0$  : There is not significant improvement in Indian Agricultural growth rate after 1991 reforms

$H_1$  : There is significant improvement in Indian Agricultural growth rate after 1991 reforms

Hypothesis N0 2

$H_0$  : Indian Agricultural sector growth rate is not better than service sector after reforms

$H_1$  : Indian Agricultural sector growth rate is better than service sector after reforms

Hypothesis N0 3

$H_0$  : Indian Agricultural sector growth rate is not better than Industrial sector after reforms

$H_1$  : Indian Agricultural sector growth rate is better than Industrial sector after reforms

: Hypothesis N0 4

$H_0$  : Indian agricultural growth rate is not consistent

## 6. RESEARCH METHODOLOGY

Researcher used secondary data for the comparison of agricultural, industrial, and service sector growth. collected data from secondary analyzed using simple mean and standard deviation. The presentation and analysis of data have been made using tabulations and figures. To achieve the objectives of the study, The type of research in study is a descriptive research as it involves description, recording, analysis, and interpretation of the conditions that exists.



## Methods of data collection

The Secondary data collected from different books, magazines, journals, articles, bulletins of different banks, RBI, IBA, periodicals, annual reports of banking institutions, articles in the newspapers, published and unpublished data related to the subject. The sources and research material available in NIBM library, Dhananjay Gadgil Library of GIPE, Women's Study Centre and Jaykar Granthalaya of Pune University,

**Techniques of analysis of data:** 1. Simple mean, 2. Percentage,

4. standard deviation 5. Cross Tabulations.

6. The presentation and analysis of data have been made by the use of tabulations and figures. Researcher has selected period for study from 1960 to 2019-20

## 7. Review of literature

According to Gaurang R. Sahay<sup>1</sup> “Liberalization effect became more disastrous for agriculture because it was adopted without solving fundamental agrarian problems”<sup>1</sup> According to K. Sheshu Babu “Decline in capital formation in agriculture, inadequate expenditure on irrigation and extension services in rural areas, and a dearth of cheap institutional credit, resulted in a slowdown of agricultural growth”

## 8. Analysis of data

Researcher has collected data secondary basis from 1960-61 to 2020-21 growth rates of agriculture. Industry and service sector.

### Annual growth Rate of different sectors

**Table 1 - Growth rates based on 2004-05 constant prices**

Year	Agriculture and Allied	Industry	services
1960-61	6.74	11.25	5.66
1961-62	0.01	6.79	5.36
1962-63	-1.99	6.81	5.65
1963-64	2.34	9.81	5.94
1964-65	9.22	6.76	5.75
1965-66	-11.04	4.09	2.8
1966-67	-1.42	3.59	3.1
1967-68	14.87	3.31	3.81
1968-69	-0.16	4.83	4.58
1969-70	6.43	7.46	5.16

Source: <https://statisticstimes.com/economy/country/india-gdp-growth-sectorwise.php>

**Chart 1 - Growth rates based on 2004-05 constant prices**

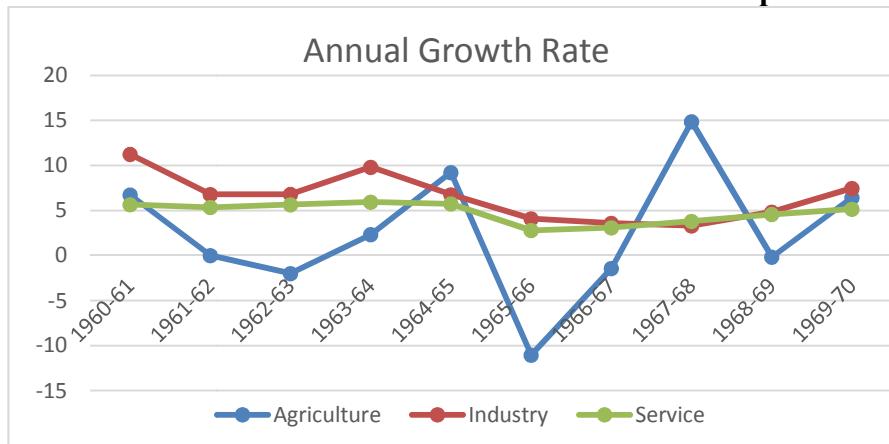


Table and chart 1 shows growth rates of agriculture and allied, industry and service sector. Most import feature we can observe that agriculture sector has even negative growth for three years and growth rate of agriculture sector has not consistence, while industrial and service sector have positive growth only. three years agriculture experienced extra ordinary growth and three years negative. As table mean of growth rate of agriculture , industry, service were 2.5 ,6.47,4.78 respectably. Compound growth rate in 1960-61 decade industrial growth rate was highest.

**Table 2 - Growth rates based on 2004-05 constant prices**

Year	Agriculture and Allied	Industry	services
1970-71	7.09	0.74	4.95
1971-72	-1.88	2.51	3.68
1972-73	-5.02	3.64	2.94
1973-74	7.2	0.61	3.25
1974-75	-1.52	1.41	4.12
1975-76	12.89	7.08	6.65
1976-77	-5.78	8.67	4.64
1977-78	10.04	7.01	4.94
1978-79	2.3	6.89	6.68
1979-80	-12.77	-3.16	2.2

Source: <https://statisticstimes.com/economy/country/india-gdp-growth-sectorwise.php>

**Chart 2 - Growth rates based on 2004-05 constant prices**

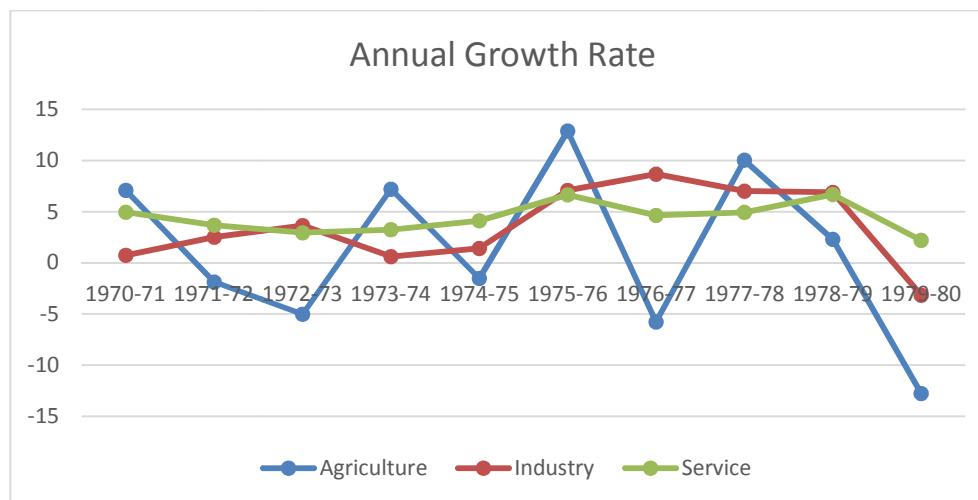


Table 2 shows growth rate of 1970-71 to 79-80 decade. Agriculture has negative growth for five years and worst was in 1979-80 minus 12 %, it was very critical position. In the year 1975-76 extra-ordinary growth rate of agriculture around 12.89 %. Average growth rate of decade was only 1.25. Agriculture reflected very fluctuations in the decade. Growth rate was not sustainable. Industry and service sector had average growth rate in similar range 3.54 and 4.40 percentage. The standard deviation of decadal average mean of agriculture was 7.65. very high dispersion level.



We can say agricultural growth was not consistent at all. Standard deviation of average mean of industry and service sector were 3.54 and 1.40. It shows low level of dispersion in industry and service. The chart shows clear similar trend of growth rate of industry and services.

**Table 3 - Growth rates based on 2004-05 constant prices**

Year	Agriculture and Allied	Industry	services
1980-81	12.89	5.24	4.62
1981-82	4.6	8.01	5.19
1982-83	-0.28	1.42	7.13
1983-84	10.12	7.88	5.72
1984-85	1.59	4.08	6.1
1985-86	0.31	4.38	7.67
1986-87	-0.41	5.76	7.59
1987-88	-1.59	5.57	6.35
1988-89	15.64	9.1	6.95
1989-90	1.19	8.3	8.88

Source: <https://statisticstimes.com/economy/country/india-gdp-growth-sectorwise.php>

**Chart no 3 - Growth rates based on 2004-05 constant prices**

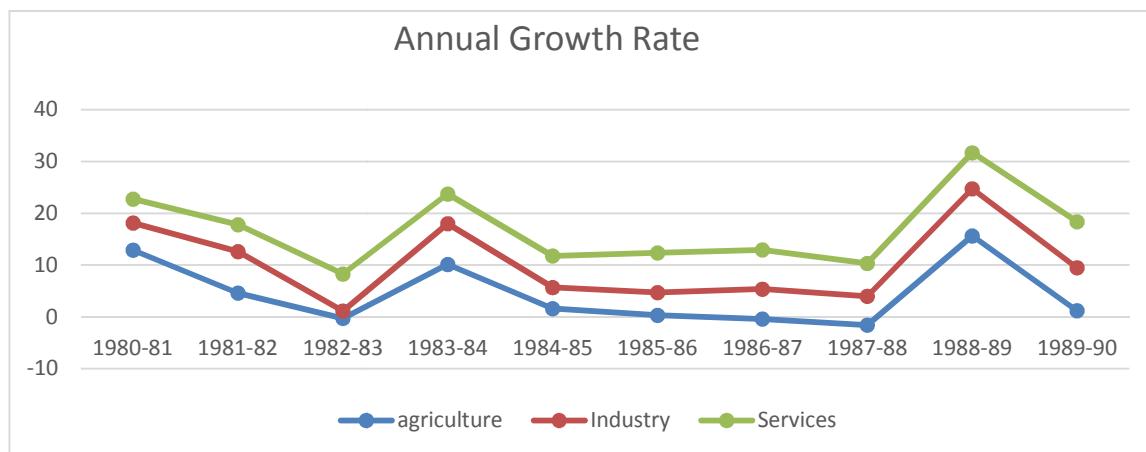


Table 3 shows minor negative growth of agriculture for three years but excellent growth in year 1988-89. Average growth rate of agriculture, industry, services were 4.4, 5.9 and 6.62. The trend of decadal growth is similar for all the three sectors. We can observe from chart 3 movements of curves exactly similar with equal distance. Standard deviation of average mean of agriculture was 5.89, little bit high degree of dispersion, But for industry and services levels were low 2.25 and 1.21.

**Table 4 - Growth rates based on 2004-05 constant prices**

Year	Agriculture and Allied	Industry	services
1990-91	4.02	7.33	5.19
1991-92	-1.95	0.34	4.69
1992-93	6.65	3.22	5.69
1993-94	3.32	5.5	7.38
1994-95	4.72	9.16	5.84
1995-96	-0.7	11.29	10.11
1996-97	9.92	6.39	7.53
1997-98	-2.55	4.01	8.93
1998-99	6.32	4.15	8.28
1999-2K	2.67	5.96	12.05

Source: <https://statisticstimes.com/economy/country/india-gdp-growth-sectorwise.php>

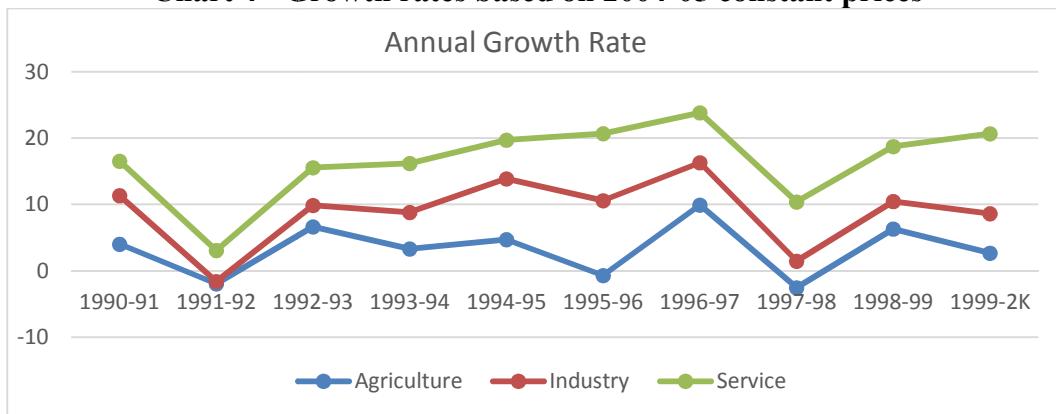
**Chart 4 - Growth rates based on 2004-05 constant prices**

Table 4 displays first decade after reforms. Here we can see exactly same trends in all the three sectors where service sector has highest growth rate industry in middle and agriculture has lowest growth rate. It was observed three years negative growth rate for agriculture in the first decade after reforms. Average mean of growth rate were 3.24, 6.73 and 7.56 for agriculture, industry. Services Agriculture faced negative growth for three years.

**Table no 5 - Growth rates based on 2004-05 constant prices**

Year	Agriculture and Allied	Industry	services
2000-01	-0.01	6.03	5.07
2001-02	6.01	2.61	6.61
2002-03	-6.6	7.21	6.74
2003-04	9-Jan	7.32	7.89
2004-05	0.18	9.81	8.28
2005-06	5.14	9.72	10.91
2006-07	4.16	12.17	10.06
2007-08	5.8	9.67	10.27
2008-09	0.09	4.44	9.98
2009-10	0.81	9.16	10.5

Source: <https://statisticstimes.com/economy/country/india-gdp-growth-sectorwise.php>

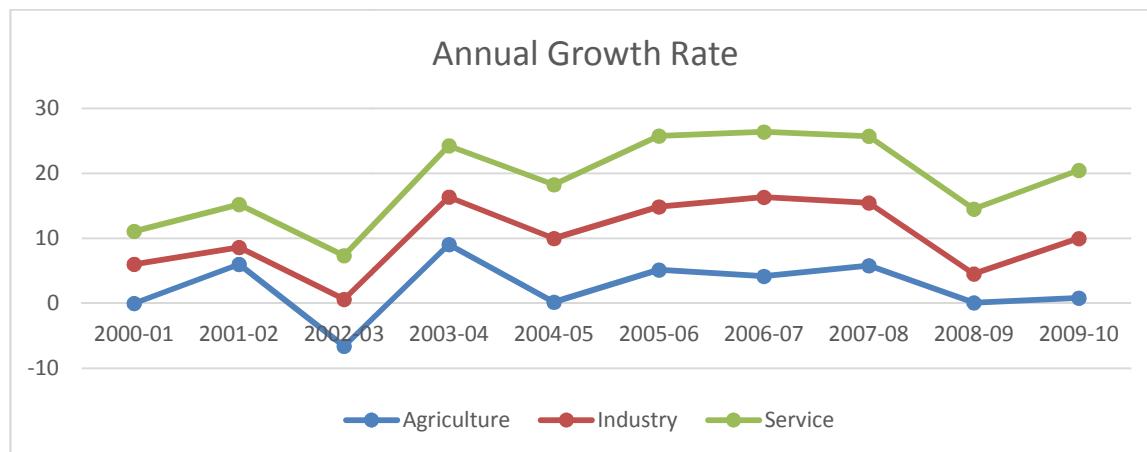
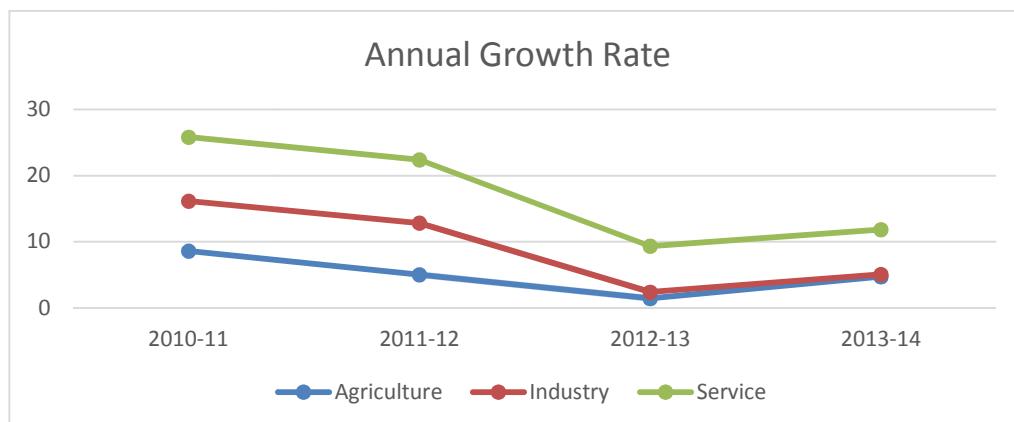
**Chart 5 - Growth rates based on 2004-05 constant prices**


Table five displays the trend of decadal growth is similar for all the three sectors. We can observe from chart five movements of curves exactly similar with equal distance. Average growth of agriculture was 2.46 and standard deviation was 4.2. so we can say moderate dispersion level. Here also highest growth rate for services then industry and last agriculture observed. Again two years negative growth for agriculture which were minute.

**Table 6 - Growth rates based on 2004-05 constant prices**

Year	Agriculture and Allied	Industry	services
2010-11	8.6	7.55	9.67
2011-12	5.02	7.81	9.57
2012-13	1.42	0.96	6.96
2013-14	4.71	0.35	6.78

Source: <https://statisticstimes.com/economy/country/india-gdp-growth-sectorwise.php>

**Chart 6 - Growth rates based on 2004-05 constant prices**




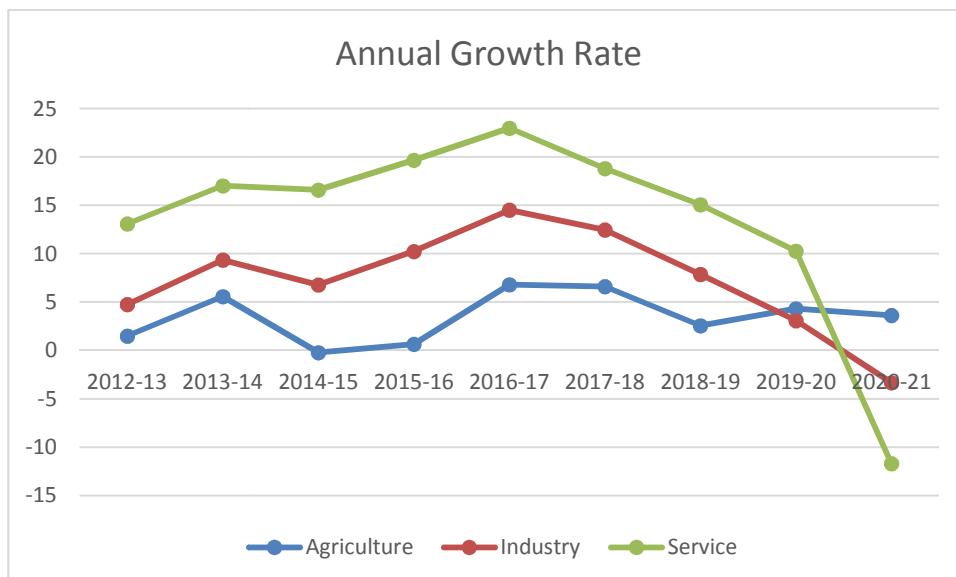
Same kind of trend we can observe in 2010-11 to 2013-14 in table number 6. Similar pattern of growth rate are moving. In the chart it can be observed three growth rate lines are moving in same directions with similar distance.

**Table 7 - Growth rates based on 2011-12 constant prices**

Year	Agriculture and Allied	Industry	services
2012-13	1.49	3.27	8.33
2013-14	5.57	3.79	7.66
2014-15	-0.22	7	9.81
2015-16	0.65	9.58	9.44
2016-17	6.8	7.72	8.46
2017-18	6.61	5.86	6.34
2018-19	2.56	5.31	7.2
2019-20	4.31	-1.23	7.19
2020-21	3.63	-6.96	-8.36

Source: <https://statisticstimes.com/economy/country/india-gdp-growth-sectorwise.php>

**Chart 7 - Growth rates based on 2011-12 constant prices**



In the last nine years same pattern followed. In the chart lines are moving same direction with some equal distance for growth rate. Here highest growth for service sector then industry and then agriculture. For the first time industry and service sector got negative growth in 20-21 but agriculture growth was positive in this pandemic situation.

**Table 8 - calculation of mean of growth rate and standard deviation**

Time period	Agriculture (mean of growth rates)	Agriculture (standard deviation of growth rate)	Industry (mean of growth rates)	Industry (standard deviation of growth rate)	Service (mean of growth rates)	Service (standard deviation of growth rate)
1960-61 to 1969-70	2.5	6.8	6.47	2.48	4.78	1.09
1970-71 to 1979-80	1.25	7.65	3.54	3.59	4.4	1.4
1980-81 to 1989-90	4.4	5.89	5.97	2.24	6.62	1.21
1990-91 to 1999-20K	3.24	3.8	5.73	6.44	7.56	2.22
2000-01 to 2009-10	2.4	4.23	7.81	2.72	8.6	1.9
2010-11 to 2013-14	4.93	2.54	4.17	3.52	8.2	0.87
2012-13 to 2020-21	3.49	2.41	3.81	4.79	6.23	5.26

**Hypothesis testing:****Hypothesis N0 1**

$H_0$  : There is not significant improvement in Indian Agricultural growth rate after 1991 reforms

$H_1$  : There is significant improvement in Indian Agricultural growth rate after 1991 reforms

Researcher has calculated average mean and standard deviation of every decade from 1960. It can be observed from above table number eight. Average growth rate of agriculture is around 3and 4 percent before and after economic reforms. In the 1980-81 decade average mean was 4.4 where as again between 2001-10 decade around 4.93.in the last nine years it came down to 3.49 percent.

So we can accept null hypothesis that there is no significant improvement in agriculture growth after 1991 reforms and reject alternate hypothesis.

**: Hypothesis N0 2**

$H_0$  : Indian Agricultural sector growth rate is not better than service sector after reforms

$H_1$  : Indian Agricultural sector growth rate is better than service sector after reforms

**Table 9 - growth rate of agriculture and service sector**

Time period	Agriculture (mean of growth rates)	Service (mean of growth rates)
1960-61 to 1969-70	2.5	4.78
1970-71 to 1979-80	1.25	4.4
1980-81 to 1989-90	4.4	6.62
1990-91 to 1999-20K	3.24	7.56
2000-01 to 2009-10	2.4	8.6
2010-11 to 2013-14	4.93	8.2
2012-13 to 2020-21	3.49	6.23

Table 9 reflects the comparison of growth rate of agriculture and service sector. It can be clearly observed that in every time period growth rate of service sector is high as compared to agriculture specially after reforms. So we can accept null hypothesis number 2 that Indian Agricultural sector growth rate is not better than service sector after reforms and reject alternate hypothesis.

**Hypothesis No. 3**

$H_0$  .: Indian Agricultural sector growth rate is not better than Industrial sector after reforms

$H_1$ :. Indian Agricultural sector growth rate is better than Industrial sector after reforms.

**Table 10 - growth rates of agriculture and Industry.**

Time period	Agriculture (mean of growth rates)	Industry (mean of growth rates)
1960-61 to 1969-70	2.5	6.47
1970-71 to 1979-80	1.25	3.54
1980-81 to 1989-90	4.4	5.97
1990-91 to 1999-20K	3.24	5.73
2000-01 to 2009-10	2.4	7.81
2010-11 to 2013-14	4.93	4.17
2012-13 to 2020-21	3.49	3.81

Table 10 reflects the comparison of mean of growth rates of agriculture and Industry. It can be clearly observed that in every time period growth rate of Industry sector is high as compared to agriculture specially after reforms. Only in 2010-11-2013-14 period industry mean of growth rate is slightly less.

**So we can accept null hypothesis number 3 that Indian Agricultural sector growth rate is not better than Industry sector after reforms and reject alternate hypothesis**

**Hypothesis N0 4**

$H_0$  . Indian agricultural growth is not consistent

All the tables show that every decade agriculture has reflected negative growth rate for some years and dispersion level is high in agricultural sector

**So we can accept null hypothesis number 4 that Indian agricultural growth is not consistent.**

**9. Conclusion-**

After the analysis of data it can be said that growth rate of agriculture is not significantly improved., while industry and service sector have remarkable improvement. Service sector has improved fast and industry also grow with good rate. agricultural sector cannot be get good effect of economic reforms. Indian Agriculture need basic transformation. Until unless there will not be proper implementation of land reforms. tenancy act. good financial support, development of irrigation, proper consolidation of holding, development of agricultural allied employment opportunity reform steps will not become successful in primary sector.

**10. Limitations of the study-**

1. Above study is based on secondary data only. Researcher did not use primary date for study.
2. This study is only based on growth rate of different sectors.
3. This study has not included production, output, and productivity of sectors.
4. This study has not included change of pattern of production of agriculture.



## **11. Scope for further study**

1. Further this study can be extended for any other developing country which is agriculturally based.
2. Study can be done for basic structure of the agriculture.

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