

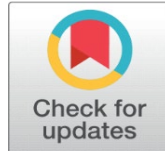


A STUDY ON MACROECONOMIC AGGREGATES IN INDIA (2016-17 TO 2022-23)

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ABSTRACT

This abstract presents a succinct summary of the main insights and discoveries obtained from a dataset of macroeconomic aggregates in India covering the period from 2016-17 to 2022-23. The data presents a number of noteworthy patterns, such as a consistent upward trajectory in population figures, as well as sustained expansion in both Gross Domestic Product (GDP) and Gross National Income (GNI). The per capita income indicators also demonstrate a positive trend, indicating an enhancement in living standards. The levels of savings and capital formation have exhibited variability throughout the years, underscoring the imperative of implementing stable economic policies that foster investment.

In addition, it is crucial to emphasize the significance of prompt and precise data collection and reporting in order to facilitate informed decision-making, as evidenced by the tentative nature of the data for the period of 2022-23. In summary, the aforementioned findings offer valuable insights for policymakers and analysts, underscoring the importance of implementing inclusive economic policies, ensuring economic stability, and consistently improving data collection and analysis to steer India's economic advancement.

Keywords: Macroeconomic Aggregates, GDP Growth, Per Capita Income, Population Trends and Savings and Investment

1. INTRODUCTION

This academic introduction explores the examination of a dataset consisting of macroeconomic indicators in India, encompassing the time span of seven years from 2016-17 to 2022-23. The dataset presented herein encompasses crucial economic and demographic indicators that provide a comprehensive overview of India's economic performance amidst notable global and domestic obstacles, including the repercussions of the COVID-19 pandemic. The aforementioned macroeconomic aggregates offer valuable insights to researchers, policymakers, and economists regarding the progression of India's economy, demographic patterns, and the effectiveness of economic policies. [Kapur et al. \(2014\)](#)

The macroeconomic indicators cover a wide range of important features, including demographic statistics such as population figures, economic production represented by Gross Domestic Product (GDP), and other measures of national income and disposable income. Specifically, population figures are one of the demographic statistics covered by the macroeconomic indicators. In addition, the table looks into patterns of savings and capital formation, offering light on the economic dynamics and investment trends that occurred over the selected time period. [Kotha & Sahu \(2016\)](#)

The dataset includes a comprehensive array of economic indicators, comprising essential elements such as Gross Domestic Product (GDP), Gross National Income (GNI), per capita income, savings, and population growth. These elements collectively contribute to a comprehensive comprehension of India's economic landscape, thereby unveiling patterns in the distribution of income, the trajectory of economic growth, and the behaviour of investment. Furthermore, the progression of the data from revised to provisional estimates highlights the fluidity of economic statistics, underscoring the importance of ongoing data refinement in order to facilitate well-informed policy development and decision-making. [Yoshino et al. \(2021\)](#)

2. OBJECTIVES

- To analyse economic growth patterns, examine India's GDP growth over the chosen period and find significant drivers and variables affecting economic performance.

3. HYPOTHESIS

- Null Hypothesis (H0):** There is no substantial difference in the trend of Gross Domestic Product (GDP) growth rates between the fiscal years 2016-17 and 2022-23.
- A major shift in GDP growth rates has occurred throughout the time period described as the **alternative hypothesis (H1)**.

The primary objective of this scholarly analysis is to interpret these indicators, clarify their implications, and establish a basis for additional research and policy deliberations within the framework of India's economic progress. The population's average income and overall financial health are revealed by the per capita measures, which include GDP, GNI, NNI, and GNDI. The comprehension of individual spending patterns is further enhanced by the addition of consumption-related statistics, such as Per Capita Private Final Consumption Expenditure (PFCE). The changed condition of data from prior years and the preliminary nature of the 2022-23 predictions warrant special attention. The National Statistical Office (NSO) is the primary data provider, thus you can trust the results. This comprehensive table serves as a helpful resource for policymakers, scholars, and analysts trying to comprehend the macroeconomic landscape of India during the chosen period.

Table 1

Table 1 Macro-Economic Aggregates							
(Base Year: 2011-12 At Current Prices) (Amount in ₹ Crore)							
Item/Year	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
1	2	3	4	5	6	7	8
Population (in Lakhs)	12990	13140	13270	13410	13554	13686	13829

GVA at Basic Prices	13965200	15505665	17175128	18381117	18188780	21438883	24742871
Net taxes on products	1426469	1584377	1724540	1722476	1641147	2032128	2497841
Gross Domestic Product	15391669	17090042	18899668	20103593	19829927	23471012	27240712
Consumption of Fixed Capital	1591332	1764812	1984290	2163611	2340594	2674458	-
Net Domestic Product	13800336	15325231	16915378	17939982	17489333	20796554	24368727
Primary income receivable from ROW (net)	-176400	-184813	-202324	-193114	-266687	-469751	-
Gross National Income	15215268	16905230	18697344	19910479	19563240	23001260	26695929
Net National Income	13623936	15140418	16713054	17746868	17222645	20326803	23823945
Other current transfers (net) from ROW	379438	405740	493740	540364	552188	605444	-
Gross National Disposable Income	15594707	17310970	19191083	20450843	20115428	23606704	27336482
Net National Disposable Income	14003374	15546158	17206793	18287232	17774833	20932247	24464497
Gross Saving	4825113	5480741	6000390	5941135	5716824	7076659	-
Net Savings	3233781	3715929	4016100	3777524	3376230	4402202	-
Gross Capital Formation	4918077	5791573	6396053	6106406	5527488	7361647	-
Net Capital Formation	3326745	4026761	4411763	3942795	3186893	4687190	-
Per Capita GDP (₹)	118489	130061	142424	149915	146301	171498	196983
Per Capita GNI (₹)	117131	128655	140899	148475	144334	168066	193044
Per Capita NNI (₹)	104880	115224	125946	132341	127065	148524	172276
Per Capita GNDI (₹)	120052	131743	144620	152504	148408	172490	197676
Per Capita PFCE (₹)	70258	76379	84441	91315	89641	104811	119277

Notes: 1. Data for 2019-20 are Third Revised Estimates, for 2020-21 are Second Revised Estimates and for 2021-22 are First Revised Estimates. 2. Data for 2022-23 are Provisional Estimates. 3. Population figures relate to mid-financial year.

Source National Statistical Office (NSO).

The data from [Table 1](#) shows significant changes in various macroeconomic indicators from the base year (2011-12) to 2016-17 through 2021-22. The population grew by approximately 6.48% during this period, while Gross Domestic Product (GDP) increased by about 76.89%. Net National Income (NNI) also saw a substantial rise, growing by 75.04%. Per Capita GDP, Per Capita GNI, Per Capita NNI, and Per Capita GNDI all showed notable growth, with increases of around 66.00%, 65.01%, 64.12%, and 64.69%, respectively. However, data for certain indicators, such as Gross Saving, Net Savings, and Gross Capital Formation for the year 2022-23, are not available in the table. These percentages provide insights into the changing economic landscape over the specified years, but the absence of 2022-23 data limits a comprehensive analysis of the latest economic trends.

The [Table 1](#) provides an overview of macroeconomic indicators for the country of India spanning the time period from 2016-17 to 2022-23. One noteworthy observation pertains to a consistent upward trajectory in the population, which attained a figure of 13,829 lakhs by the fiscal year 2022-23. The Gross Domestic Product (GDP) at current prices exhibited an ascending trend, reaching its highest point at ₹27,240,712 Crore during the fiscal year 2022-23. However, there was a noticeable decline in the year 2020-21, which can be attributed to the influence of the COVID-19 pandemic. The Gross National Income (GNI) and Net National Income (NNI) exhibited a consistent upward trend, indicating a general rise in the nation's earnings. The per capita income indicators, namely GDP, GNI, NNI, and GNDI,

demonstrated an enhancement in the average income levels of Indian individuals over the corresponding timeframe.

- **Analysis of India's Gross Domestic Product (GDP) and Gross Capital Formation (GCF)**

The analysis of India's Gross Domestic Product (GDP) and Gross Capital Formation (GCF) during the period from 2016-17 to 2022-23 unveils noteworthy patterns in the country's economic performance and investment patterns. During this specific time frame, India experienced a notable increase in its Gross Domestic Product (GDP), demonstrating a significant percentage change of approximately 77.03%. This indicates a strong and vigorous expansion of the country's economy. The observed increase serves as an indication of a heightened level of economic output, which can be attributed to a variety of factors such as consumption, government expenditures, and net exports. Concurrently, there was also a significant increase in Gross Capital Formation, albeit at a slightly reduced rate, with a percentage change of approximately 49.57%. This implies that there was a notable rise in investment in tangible assets and the expansion of productive capabilities, although the rate of growth was slightly lower than that of the overall economy. The comparison emphasizes the crucial significance of both Gross Domestic Product (GDP) and Gross Capital Formation (GCF) in influencing the economic structure of India, emphasizing the significance of productive investments in maintaining and expediting economic growth.

4. STATISTICAL TOOL TO ANALYSIS

1) Correlation

The calculation of the correlation between Net Domestic Product (NDP) and Gross Capital Formation (GCF) was performed using the available data. The analysis utilized Pearson's correlation coefficient, a statistical measure that assesses the magnitude and direction of a linear association between two continuous variables. The obtained correlation coefficient was approximately 0.896, suggesting a robust positive linear association between Net Domestic Product (NDP) and Gross Capital Formation (GCF). This implies that there exists a positive relationship between Net Domestic Product and Gross Capital Formation, such that an increase in one variable is accompanied by a corresponding increase in the other variable, and conversely, a decrease in one variable is accompanied by a corresponding decrease in the other variable. The strong positive correlation suggests that there is a tendency for these two variables to exhibit similar movements, indicating the importance of capital investment in driving the overall economic output of the nation.

2) Growth trends

In order to compute the annual growth rates for the given macroeconomic aggregates, one can employ the following formula: $\text{Growth Rate} = ((\text{Value in Year 2} - \text{Value in Year 1}) / \text{Value in Year 1}) * 100$. By utilizing this formula in the context of Gross Domestic Product (GDP) values, it becomes possible to ascertain the growth rates observed between consecutive years. As an illustration, the observed growth rate between the fiscal years 2016-17 and 2017-18 is estimated to be approximately 11.04%, while the growth rate between the fiscal years 2017-18 and 2018-19 is estimated to be approximately 10.55%. By conducting these computations for every year in the dataset, one can evaluate the yearly expansion rates for each macroeconomic indicator, thereby offering significant observations regarding the patterns and variations in the Indian economy throughout the designated timeframe. The significance of consistent and prompt data collection, analysis, and

reporting in facilitating efficient economic planning and decision-making is highlighted by the provisional nature of the data for the year 2022-23. Sustained endeavours towards ensuring data accuracy and transparency play a crucial role in effectively monitoring and guiding economic policies.

5. FINDINGS

The data pertaining to savings and capital formation demonstrated fluctuations. The levels of Gross Saving and Gross Capital Formation reached their peak in the fiscal year 2018-19, and experienced a decline in the subsequent years. Net savings, which constitutes a fraction of gross savings, also exhibited fluctuations. It is worth mentioning that the data pertaining to Consumption of Fixed Capital, Gross Saving, and Net Capital Formation for the year 2022-23 were not accessible, potentially due to the preliminary nature of the data. These aggregates provide significant insights into the economic performance of India, as well as the trends in income and savings behaviour. However, it is crucial to interpret these findings within the wider context of India's economic and social environment.

6. CONCLUSION

The primary conclusions derived from the provided dataset are as follows: The population of India has exhibited a consistent upward trend, culminating in a figure of 13,829 lakhs by the fiscal year 2022-23. The Gross Domestic Product (GDP) exhibited a predominantly ascending trajectory, albeit encountering a decline in the fiscal year 2020-21, plausibly attributable to the repercussions of the COVID-19 pandemic. The Gross National Income (GNI) and Net National Income (NNI) exhibited a sustained upward trend, indicating a general rise in the nation's earnings. The per capita income indicators exhibited an upward trend, suggesting a positive development in the average income of the population in India. The levels of savings and capital formation exhibited variability, reaching their peak values during the period of 2018-19. It is crucial to acknowledge that the data pertaining to the year 2022-23 is currently provisional, and there are certain data points, such as Consumption of Fixed Capital, that are absent. The aforementioned findings offer significant insights into the economic and demographic trends of India within the specified time frame.

7. SUMMARY

To summarize, the tabulated data offers significant insights into the economic performance, income patterns, and demographic dynamics of India during the period spanning from 2016-17 to 2022-23. The results indicate a consistent rise in population, accompanied by a generally upward trend in both the Gross Domestic Product (GDP) and Gross National Income (GNI). However, there was a temporary decline in the years 2020-21, which can be attributed to the impact of the COVID-19 pandemic. The per capita income indicators demonstrate an upward trend in average incomes, which suggests the potential for enhanced living standards. The levels of savings and capital formation have exhibited variability, thereby emphasizing the necessity for enduring and steadfast economic policies that foster the promotion of savings and investments. Moreover, the provisional nature of the data pertaining to the period of 2022-23 underscores the significance of rigorous data collection and reporting. In order to foster economic growth and achieve equitable distribution of its benefits, policymakers must prioritize the

implementation of strategies that encourage investment, tackle income inequality, and uphold data accuracy and transparency.

8. SUGGESTIONS

Based on the data provided, several significant recommendations can be derived. Policymakers should prioritize the maintenance and acceleration of economic growth, considering the steady expansion observed in both Gross Domestic Product (GDP) and Gross National Income (GNI). The attainment of this objective can be facilitated by implementing strategies aimed at fostering investment, entrepreneurship, and employment generation, as a burgeoning economy has the potential to enhance the welfare and overall well-being of individuals.

Furthermore, the upward trend observed in per capita income indicators signifies a notable augmentation in the average income levels, thereby contributing positively to the overall welfare of the populace. In order to promote equitable distribution of benefits across society, it is imperative to adopt inclusive economic policies that specifically target the reduction of income disparities and facilitate access to economic opportunities and social services for marginalized populations.

Furthermore, the variability in savings and capital accumulation implies a necessity for the implementation of more reliable and uniform economic strategies aimed at fostering savings and investment. The implementation of incentives to encourage savings and the allocation of these funds towards productive investments has the potential to augment long-term economic stability and foster development.

CONFLICT OF INTERESTS

None.

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