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**PROJECT FILE**

**Topic: Macroeconomic Aggregates of India**

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**ABSTRACT:**

This project aims to provide a comprehensive understanding of macroeconomic aggregates, essential indicators that reflect the overall performance and health of an economy. By delving into key aggregates such as Gross value added (GVA), Net Tax on Products, Gross Domestic Product (GDP), Gross National Income (GNI), Net domestic product (NDP), Gross National Income (GNI), Net national income (NNI) and others. The project seeks to have their introduction, calculation methods and significance with respect to Indian economy. Through recent data and comparison with other nations, the project aims to highlight the interconnectedness of these aggregates and their role in shaping economic policy.

**INTRODUCTION:**

The level of growth for any country is of prime significance. Every country wants to prosper or grow over a period of time. On the basis of income only we group countries into developed, developing, or underdeveloped category. It is this parameter (income level) that enables us to say that India, China, Brazil and South Africa are developing countries; United States, Japan, United Kingdom are developed countries; and Uganda, Bolivia, Senegal etc. are underdeveloped countries. Therefore, how to achieve or maintain a high rate of growth of national income has been a key macroeconomic issue. To understand this issue, knowledge on such macroeconomic aggregates as gross domestic product (GDP), national income, per capita income, nominal and real income are needed.

Macroeconomic aggregates are used to understand the health of the economy as a whole through the total or aggregate values of macroeconomic variables. In simple words, these are the variables using which performance of an economy is commented on. ‘Aggregate’ literally means ‘collection’ or ‘total’. Economic aggregates are variables that measure the total economic activity for a nation state or a region. For example, the main economic aggregate is Gross Domestic Product (GDP), which measures the total value of all the goods and services produced in a country. 1

Some of the key macroeconomic aggregates are:

Gross value added (GVA)

The Gross Value Added (GVA) is a measure of the value of goods and services produced by an economy, sector, or company. It is often used to assess the contribution of a specific economic unit to the overall economy. It provides a more detailed picture of the actual production value without the impact of taxes and subsidies. The formula for GVA is expressed as:

GVA=GDP− (Taxes on Products +Subsidies on Products)

Where: GDP is the Gross Domestic Product.

Taxes on Products are taxes that are included in the price of goods and services, such as value-added taxes (VAT).

Subsidies on Products are subsidies provided to producers to reduce their production costs.

The Gross Value Added (GVA) growth during the fiscal ending March 2023 was 7% against an 8.8 % growth in the previous year. The GVA growth in the manufacturing sector accelerated to 4.5 % in the March 2023 quarter against 0.6% a year ago. The agriculture sector’s growth accelerated to 5.5% from 4.1%. GVA growth in the services sector — trade, hotel, transport, communication and services related to broadcasting — was 9.1 % in the fourth quarter against a growth of 5% a year ago.

Gross Domestic Product (GDP)

GDP measures the monetary value of final goods and services—that is, those that are bought by the final user—produced in a country in a given period of time. There are three main approaches to calculating GDP, and each approach provides a different perspective on the economy.

1. Expenditure Approach: GDP=C+I+G+ (X−M)

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C is consumption expenditure (household spending on goods and services),

I is investment expenditure (business spending on capital goods),

G is government expenditure on goods and services,

X is exports of goods and services,

M is imports of goods and services.

ii) Production (Output) Approach: GDP=GVA at basic prices +Taxes on Products−Subsidies on Products.

iii) Income Approach: GDP=Compensation of Employees + Gross Operating Surplus + Gross Mixed Income +Taxes on Production and Imports−Subsidies.

India's gross domestic product (GDP) for the second quarter of the current financial year accelerated to 7.6 per cent year-on-year. In the same period last year, the GDP growth stood at 6.2 per cent. However, the GDP growth in the second quarter was marginally lower in comparison with the first quarter of FY24. In the first quarter, the GDP growth stood at 7.8 per cent.

Net domestic product (NDP)

Net domestic product (NDP) is an annual measure of the economic output of a nation that is calculated by subtracting depreciation from gross domestic product (GDP). It provides a more accurate reflection of a nation's economic performance than Gross Domestic Product (GDP) because it subtracts the value of capital that has been used up in the production process. Hence, NDP=GDP−Depreciation.

The reasons why Net Domestic Product (NDP) is important as it provides a measure of the net output of the economy after accounting for the wear and tear on its capital stock. This adjustment is essential for understanding the sustainability of economic growth.

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Gross national income (GNI)

Gross National Income (GNI) is a measure of the total economic output produced by the residents of a country, including both the domestic and foreign production. It is an important economic indicator that reflects the overall economic performance of a nation. GNI takes into account the value of goods and services produced by a country's residents, whether within the country's borders or abroad.

GNI=GDP + Net income earned from abroad

India GNI for 2022 was $3,370.15B, a 11.6% increase from 2021. India GNI for 2021 was $3,019.86B, a 13.55% increase from 2020. India GNI for 2020 was $2,659.60B, a 7.61% decline from 2019.

Net national income (NNI)

Net national income (NNI) is defined as gross national income minus the depreciation of fixed capital assets (dwellings, buildings, machinery, transport equipment and physical infrastructure) through wear and tear and obsolescence.

Therefore, NNI=GNI−Depreciation.

Gross Domestic Product per capita

Gross domestic product per capita measures a country's economic output per person and is calculated by dividing the GDP of a country by its population. Hence, GDP per capita = GDP / Total population.

India’s GDP per capita was 2,256.59 USD as of 2021. Meanwhile, United States was standing with 70,248.63 USD in the same year and Luxembourg has the highest per capita GDP of nearly 130,000 USD.

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Gross National Income per capita

Gross National Income per capita (GNI per capita) is a measure of the average income earned by an individual in a country and is derived from the Gross National Income (GNI) of that country. GNI per capita is calculated by dividing the GNI of a country by its population. Bermuda (UK territory) has the highest GNI per capita with 122,470 USD. On the other hand USA has 70,930 USD and India 2,380 USD.

Net Tax on Products

Net Tax on Products or Tax on Net Subsidies on Products, are defined as the difference between tax on Products less Subsidies on Products, It is a component used in the calculation of Gross Value Added (GVA) and is part of the broader Gross Domestic Product (GDP) accounting. The formula for Net Taxes on Products is as follows:

Net Taxes on Products=Taxes on Products−Subsidies on Products

Per Capita PFCE

The Private final consumption expenditure (PFCE) is defined as the expenditure incurred by the resident households and non-profit institutions serving households (NPISH) on final consumption of goods and services, whether made within or outside the economic territory.

**OBJECTIVES:**

1. Understanding Macroeconomic Concepts.
2. Analysis of Economic Performance.
3. Analysing the trends of all the macro-economic variables taken into consideration. 5

**METHEDOLOGY:**

Simple trend Analysis through excel sheet with the help of tables and graphs. This study is based on secondary data collected from RBI website.

**DATA ANALYSIS AND TREND:**

**Table 1: MACRO-ECONOMIC AGGREGATES OF INDIA 2013-18**

(Base Year: 2011-12 at Constant Prices)

\*All figures in Rupee Crore.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Items/Year** | **2013-14** | **2014-15** | **2015-16** | **2016-17** | **2017-18** |
| Gross Value Added | 9063649 | 9712133 | 10491870 | 11328285 | 12074413 |
| Gross domestic product | 9801370 | 10527674 | 11369493 | 12308193 | 13175160 |
| Net domestic product | 8700760 | 9349029 | 10098603 | 10926667 | 11686409 |
| Gross National Income | 9679027 | 10402987 | 11234571 | 12163619 | 13029307 |
| Net national income | 8578417 | 9224343 | 9963681 | 10782092 | 11540556 |
| GDP per capita | 78348 | 83091 | 88616 | 94751 | 100268 |
| GNI per capita | 77370 | 82107 | 87565 | 93638 | 99158 |
| Net Tax on Products | 737721 | 815541 | 877623 | 979909 | 1100747 |
| PFCE | 44423 | 46667 | 49738 | 53120 | 56163s |

Notes: 1. Data for 2016-17 are Third Revised Estimates, for 2017-18 are Second Revised Estimates and for 2018-19 are First Revised Estimates. 2. Data for 2019-20 are Provisional Estimates.

Source: National Statistical Office (NSO).

We can observe from table 1 that all the macroeconomic aggregates have seen positive trend throughout the years 2013-14 to 2017-18 and hit the peak in the year 2017-18. Hence, Indian economy has seen overall economic expansion. 6

Figure 1: MACRO-ECONOMIC AGGREGATES OF INDIA 2013-18

\*All figures in Rupee Crore**.**

Here's an analysis of the macroeconomic aggregates for India from 2013-14 to 2017-18 in terms of percentage increase or decrease:

Gross Value Added (GVA):

The GVA has shown a consistent upward trend over the years, indicating a positive performance in the production and service sectors.

%Change (2014) ≈7.16%

%Change (2015) ≈8.08%

%Change (2016) ≈ 7.96%

%Change (2017) ≈ 6.59%

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Gross Domestic Product (GDP):

The GDP has experienced steady growth, demonstrating overall economic expansion during the specified years.

%Change (2014) ≈7.54%

%Change (2015) ≈7.99%

%Change (2016) ≈ 8.27%

%Change (2017) ≈ 7.06%

Net Domestic Product (NDP):

Similar to GDP, NDP has also increased consistently, suggesting sustained economic growth after accounting for depreciation.

%Change (2014) ≈7.49%

%Change (2015) ≈ 8.11%

%Change (2016) ≈ 8.21%

%Change (2017) ≈ 6.95%

Gross National Income (GNI):

GNI has followed an upward trajectory, indicating growth in both domestic and international economic activities.

%Change (2014) ≈7.55%

%Change (2015) ≈7.98%

%Change (2016) ≈ 8.29%

%Change (2017) ≈ 7.11% 8

Net National Income (NNI):

NNI has exhibited a positive trend, reflecting growth in national income after adjusting for depreciation.

%Change (2014) ≈7.53%

%Change (2015) ≈8.02%

%Change (2016) ≈ 8.20%

%Change (2017) ≈ 7.05%

GDP per Capita:

The GDP per capita has shown a gradual increase, suggesting an improvement in average economic output per person.

%Change (2014) ≈6.05%

%Change (2015) ≈6.63%

%Change (2016) ≈ 6.93%

%Change (2017) ≈ 5.63%

GNI per Capita:

Similar to GDP per capita, GNI per capita has increased over the years, indicating a rise in the average income of individuals.

%Change (2014) ≈6.11%

%Change (2015) ≈6.65%

%Change (2016) ≈ 6.92%

%Change (2017) ≈ 5.90% 9

Net Tax on Products:

The net tax on products has increased steadily, reflecting potential growth in government revenue from taxes on goods and services.

%Change (2014) ≈10.54%

%Change (2015) ≈7.61%

%Change (2016) ≈ 11.66%

%Change (2017) ≈ 12.30%

Private Final Consumption Expenditure (PFCE):

PFCE has experienced growth each year, indicating an increase in consumer spending, which is a positive sign for economic activity.

%Change (2014) ≈ 5.05%

%Change (2015) ≈6.57%

%Change (2016) ≈ 6.80%

%Change (2017) ≈ 5.71%

**Table 2: MACRO-ECONOMIC AGGREGATES OF INDIA 2018-23**

**(Base Year: 2011-12 at Constant Prices)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Items/Year** | **2018-19** | **2019-20** | **2020-21** | **2021-22** | **2022-23** |
| Gross Value Added | 12733798 | 13236100 | 12681482 | 13798025 | 14764840 |
| Gross domestic product | 13992914 | 14534641 | 13687118 | 14925840 | 16006425 |
| Net domestic product | 12378459 | 12803462 | 11854151 | 12977142 | 13929147 |
| Gross National Income | 13840474 | 14392900 | 13496925 | 14619532 | 15681337 |
| Net national income | 12226019 | 12661722 | 11663958 | 12670834 | 13604058 |
| GDP per capita | 105448 | 108387 | 100981 | 109060 | 115746 |
| GNI per capita | 104299 | 107330 | 99578 | 106822 | 113395 |
| Net Tax on Products | 1259116 | 1298540 | 1005636 | 1127815 | 1241585 |
| PFCE | 59159 | 61568 | 57728 | 63595 | 67675 |

\*All figures in Rupee Crore.

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.

Source: National Statistical Office (NSO)

The data underscores the growth of the economy, supported by increasing GVA, GDP, GNI, per capita income and other indicators that peaked in year 2022-23. The only drawback was in 2020-21, due to Covid19 pandemic Indian economy has experienced negative growth. However, from 2021-22 it reflected a speedy recovery consistent growth in economic activities.

Figure 2: MACRO-ECONOMIC AGGREGATES OF INDIA 2018-19

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Here's an analysis of the macroeconomic aggregates for India from 2018-19 to 2022-23 in terms of percentage increase or decrease:

Gross Value Added (GVA )

2019-20: +3.94%

2020-21: -4.18%

2021-22: +8.86%

2022-23: +6.98%

GVA has Experienced an increase from 2018-19 to 2019-20, then a decline in 2020-21, due to Covid19 pandemic and lockdown, followed by a substantial increase in 2021-22 and 2022-23.

Gross Domestic Product (GDP):

2019-20: +3.88%

2020-21: -5.71%

2021-22: +9.06%

2022-23: +7.20%

The GDP also demonstrates a consistent growth pattern over the years. The economy has expanded, reaching its peak in 2022-23. GDP has also experienced an increase from 2018-19 to 2019-20, then a decline in 2020-21, due to Covid19 pandemic and lockdown, This suggests an overall increase in the value of all goods and services produced in the country.

Net Domestic Product (NDP):

2019-20: +3.43%

2020-21: -7.40%

2021-22: +9.40 12

2022-23: +7.70%

The above data displays a similar pattern to GVA and GDP, with a decrease in 2020-21 and subsequent increases in 2021-22 and 2022-23. The NDP, which accounts for depreciation, also shows a consistent increase, implying sustained economic growth with adjustments for capital depreciation.

Gross National Income (GNI):

2019-20: +3.98%

2020-21: -6.39%

2021-22: +8.11%

2022-23: +7.22%

GNI exhibits steady growth, reflecting the total income earned by the residents of a country, including income from abroad. The increasing trend suggests a favourable economic environment.

Net National Income (NNI):

2019-20: +3.55%

2020-21: -7.81%

2021-22: +8.58%

2022-23: +7.61%

This follows a pattern similar to NDP, showing a decrease in 2020-21 and subsequent increases in 2021-22 and 2022-23.

GDP per Capita: 13

2019-20: +2.77%

2020-21: -7.08%

2021-22: +8.02%

2022-23: +6.26%

The values show a gradual increase, implying that the economic growth is translating into improved living standards for individuals in the country.

GNI per Capita:

2019-20: +2.91%

2020-21: -6.45%

2021-22: +7.36%

2022-23: +6.16%

GNI per capita follows a similar increasing trend, reflecting the rising average income of residents. This suggests that the economic growth is positively impacting the overall prosperity of the population.

Net Tax on Products:

2019-20: +3.26%

2020-21: -22.62%

2021-22: +12.09%

2022-23: +10.03%

The net tax on products has increased over the years, indicating that the government's tax revenue from goods and services has been growing. This can be influenced by changes in tax rates or increased economic activity.

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Private Final Consumption Expenditure (PFCE):

2019-20: +4.12%

2020-21: -6.09%

2021-22: +10.33%

2022-23: +6.39%

PFCE represents household spending. The values show a consistent increase, suggesting that consumers are spending more on goods and services, contributing to economic growth.

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**FINDINGS, CONCLUSION AND SUGGESTIONS**

In summary, the data reveals a generally positive economic performance for India throughout the specified years, with growth in major macroeconomic indicators such as GDP, GNI, and per capita income. The consistent increase in Net Tax on Products and Private Final Consumption Expenditure suggests dynamic economic activity and government revenue. However, In 2020-21 Indian Economy has faced many drawback due to Covid19 pandemic and lockdown. The economic growth of the Indian economy has performed in following manner in the last decade from 2013 to 2023.

Gross Value Added (GVA) ≈62.82%

Gross Domestic Product (GDP) ≈63.32%

Net Domestic Product (NDP) ≈60.02%

Gross National Income (GNI) ≈ 61.73%

Net National Income (NNI) ≈58.29%

GDP per Capita ≈47.60%

GNI per Capita ≈46.36%

Net Tax on Products ≈68.19%

PFCE (Private Final Consumption Expenditure) ≈52.31%

In conclusion, the presented data spanning from 2013-14 to 2022-23 provides a comprehensive overview of the economic landscape, revealing the dynamic shifts in key indicators. The Gross Value Added (GVA) has exhibited a steady upward trajectory, reflecting a consistent growth in economic activities over the years. This trend is mirrored in the Gross Domestic Product (GDP), which has experienced substantial expansion, reaching its peak in 2022-23. While the overall economic output has risen significantly, the Net Domestic Product (NDP) demonstrates the resilience of the economy by accounting for depreciation. Despite fluctuations, the NDP reflects a positive trend, indicating sustainable economic development. A similar pattern is observed in the 16

Gross National Income (GNI) and Net National Income (NNI), underscoring the nation's capacity to generate income domestically and internationally.

Per capita metrics, such as GDP per capita and GNI per capita, illustrate the improvement in living standards and economic well-being for the average citizen. The continuous increase in these figures suggests that the economic growth is not only robust in scale but also inclusive in its impact on individuals.

However, it is crucial to acknowledge the role of Net Tax on Products, which has seen a parallel increase. While taxes contribute to government revenue, managing the balance between taxation and economic growth remains a critical consideration for sustainable development.

Examining the Personal Final Consumption Expenditure (PFCE), a key component of aggregate demand, the data highlights a consistent rise, indicating increased consumer spending. This is a positive sign for economic vitality, as consumer spending is a significant driver of economic activity.

In summary, the data underscores the resilience and growth of the economy, supported by increasing GDP, GNI, and per capita income. The only drawback was due to Covid19 pandemic and there were no other National emergency happened in the country such as invasion, war, international sanctions or civil war that can affect the economic activities of our country. The challenge moving forward lies in maintaining this trend and ensuring that economic growth translates into enhanced well-being for all citizens. Hence, India’s economy must have provided such peaceful socio-economic environment that keep leading our country to the economic prosperity.

To make our country a Major economic powerhouse:

* Government must increase investment rates and tax GDP ratio.
* Work with states to improve ease of business and rationalize land & labour regulations.
* Increase Infrastructure spending which creates jobs and sustain growth.
* Develop self-sufficient manufacturing competence, with strong MSMEs.

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