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Macroeconomic Aggregates Trends during the Covid- 19 Pandemic in India

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ABSTRACT
As India has been struggling to curb the Covid- 19 since 2020, a drastic change can be seen in the macroeconomic aggregates of the Indian economy. The period of study is taken to be the calendar year 2020. This paper aims to study the trend of the macroeconomic aggregates like nominal GDP, GDP growth, investment rate, Foreign Direct Investment (FDI), fiscal deficit, etc. during the Covid- 19 pandemic. The data used in the paper is from January to December, 2020. Certain aggregates have been presented in quarterly terms, where the period has been divided into four quarters, namely January to March, April to June, July to September and October to December, which are Q1, Q2, Q3 and Q4 respectively as per calendar year, and certain aggregates have been presented in monthly terms. The paper studies the trend as well as attempts to interpret the results.

KEYWORDS- Covid- 19 pandemic, Macroeconomic Aggregates, Economic shocks

I. INTRODUCTION

The entire world is still struggling to come out of the Covid- 19 pandemic, which is caused by the SARS- Cov-2 virus. The virus has hit millions of people and has claimed thousands of lives worldwide. India is one of the worst hit countries across the world. The first case of Covid- 19 was found in India on January 30, 2020. In order to curb the spread of the disease, the central as well as the state governments have been imposing series of lockdowns and other restrictions since March, 2020.

The paper aims to present the data of the trend of the macroeconomic aggregates during the Covid- 19 pandemic and also the possible rationale behind such trend.

II. METHODOLOGY

The year of study is taken to be the calendar year 2020. It has been divided intofour quarters, i.e. Q1 (Jan- Mar), Q2 (Apr- Jun), Q3 (Jul- Sept.) and Q4 (Oct- Dec) as well into 12 months. Some aggregates have been presented in quarterly basis and some in monthly basis. As per the elementary macroeconomics courses, the Gross Domestic Product (GDP) has components- consumption spending, investment spending, government spending and net exports.

$$Y_t = C_t + I_t + G_t + (X_t - M_t) \qquad \ldots\ldots. (1)$$

Y_t = Gross Domestic Product
C_t = Consumption spending
I_t = Investment spending
G_t = Government spending
X_t = Exports
M_t = Imports

The aggregates chosen have been grouped as per (1):-

i. Gross Domestic Product- Nominal GDP, GDP growth rate, GDP deflator growth rate
ii. Consumption- Private consumption expenditure, Private consumption expenditure as percentage of GDP
iii. Investment- Investment in absolute terms, Investment as a percentage of GDP, Investment growth rate
iv. Government spending and Public Finance- Fiscal deficit as percentage of GDP, Tax revenue, Tax revenue as percentage of GDP, National government debt, National Government Debt as percenatge of GDP
v. External sectors- Exports, Imports, Trade balance, Current Account Balance, Foreign Direct Investment (FDI), and Foreign Portfolio Investment (FPI).

This is to note that public consumption expenditure, which is a component of the government spending, has been included in the consumption expenditure. The other components of the government sector, like tax revenue, government debt, etc. has been included in the government spending and public finance group.

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III. TRENDS OF THE MACROECONOMIC INDICATORS

3.1 Gross Domestic Product (GDP)

Gross domestic product (GDP) is the total monetary or market value of all the finished goods and services produced within a country’s borders in a specific time period.

3.1.1 Nominal GDP

Nominal GDP refers to the GDP measured at the current prices of the economy.

In figure 1, the nominal GDP, in absolute terms, of India was 716.18 billion USD at the end of Q1 of 2020. It fell to 533.96 billion USD at the end of Q2 of 2020-21. It rose to 649.8 billion USD at the end of Q3, and to 748.37 billion USD at the end of Q4.

3.1.2 GDP Growth Rate

The growth in GDP is often considered the barometer of the economic performance of the economy. It refers to the percentage change in the GDP from one period to another.

In figure 2, the GDP growth rate saw a sharp fall after the onset of Covid- 19. The growth rate fell from 3.01% at the end of Q1 to -24.38% at the end of Q2. The growth rate rose, but remained negative, to -7.35% at the end of Q3 and further rose, and became positive, to 0.41% at the end of Q4

3.1.3 GDP Deflator Growth Rate

The GDP price deflator, also known as the GDP deflator, measures the changes in prices for all of the goods and services produced in an economy. Numerically, it is the percentage of nominal GDP to the real GDP.

In figure 3, the GDP deflator growth rate, taking 2011-12 as the base year, was 5.582% at the end of Q1. It fell to 2.882% at the end of Q2. It rose to 3.449% at the end of Q3 and further rose to 4.849% at the end of Q4.

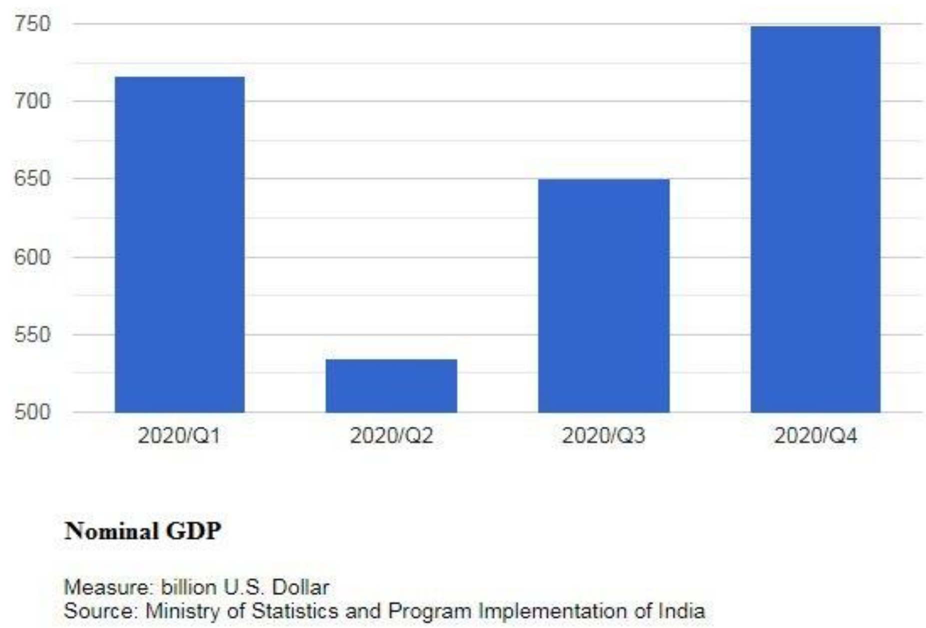

Figure 1: Nominal GDP

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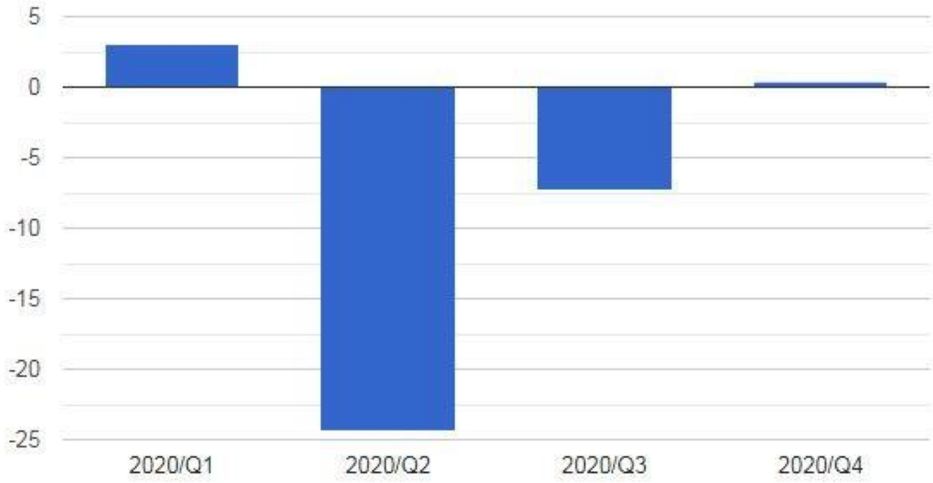

GDP Growth Rate

Measure: percent
Source: Ministry of Statistics and Program Implementation of India

Figure 2: GDP Growth Rate

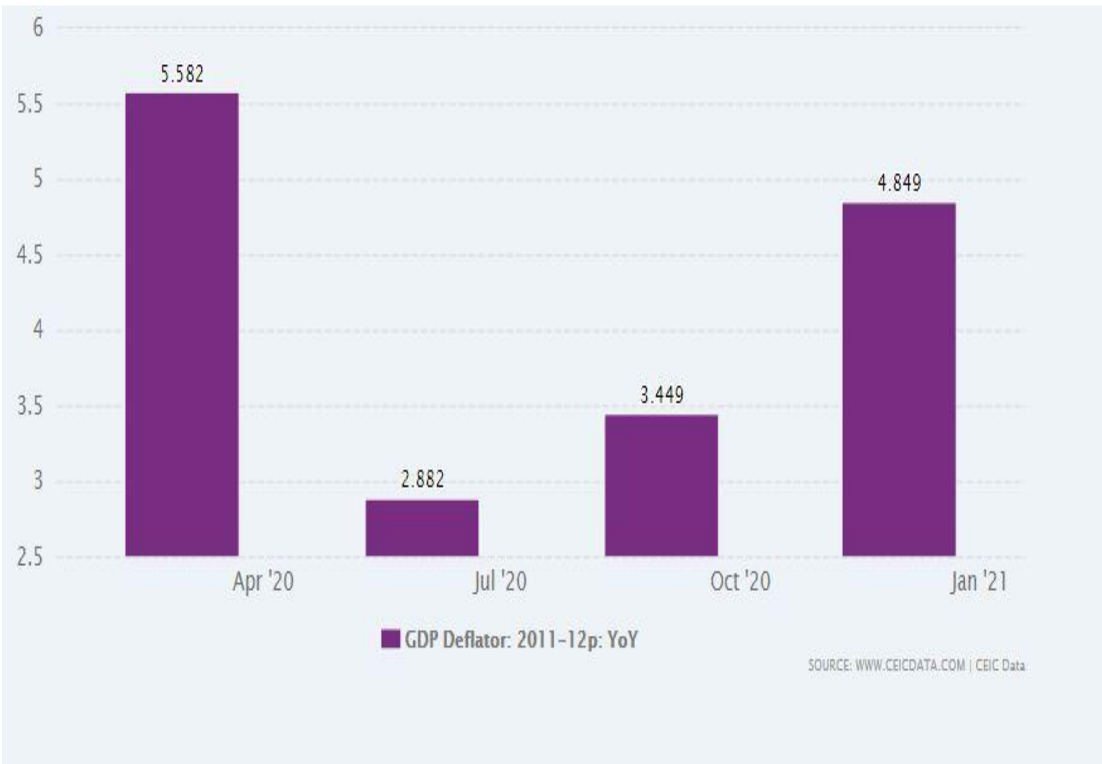

Figure 3: GDP Deflator Growth Rate

3.2 Consumption

Consumption refers to the expenditure on the final goods and services produced in an economy in a given period of time. Neoclassical economists view consumption as the final purpose of an economic activity, hence, the per person value is an important factor in determining the productive success in an economy. Consumption behaviour provides a good measure of the total national output in the economy. The total output can be used to understand the reasons for macroeconomic fluctuations in the business cycle.

3.2.1 Private Consumption Expenditure

According to the Ministry of Statistics and Programme Implementation (**MoSPI**), the private final consumption expenditure 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.

In fig. 4, the private consumption expenditure was 435.11 billion dollar at the end of Q1. It fell to 291.12 billion USD at the end of Q2, 2020. The valuation of the aggregate rose to 365.8 billion USD in the next quarter and further to 445.26 billion USD at the end of Q4 of 2020.

3.2.2 Private Consumption as a Percentage of GDP

In fig. 5, the private consumption expenditure as a percentage of GDP was 60.383% at the end of Q1 of 2020. It fell to 56.716% at the end of Q2 of 2020. The value rose marginally to 57.397% at the end of Q3. The value further rose to 60.227% at the end of Q4 of 2020.

3.2.3 Public Consumption Expenditure

OECD defines public consumption expenditure, or government final consumption expenditure, as expenditure incurred by government in its production of non-market final goods and services (except Gross Fixed Capital Formation) and market goods and services provided as social transfers in kind.

In fig. 6, the public consumption expenditure was 73.93 billion USD at the end of Q1. It rose to 291.12 billion USD at the end of Q2. Its value rose to 365.8 billion USD at the end of Q3. The public consumption expenditure jumped to 445.26 billion USD at the end of Q4.

3.2.4 Public Consumption Expenditure as a percentage of GDP

In fig. 7, the public consumption expenditure as a percentage of nominal GDP was 10.26% at the end of Q1 of 2020. It rose to 17.71% at the end of Q2. The percentage fell to 11.154% at the end of Q3 and further fell to 10.637% at the end of Q4.

3.2.5 Consumer Confidence Survey

According to the RBI, the consumer confidence survey is conducted across households of 13 cities to know about their perceptions and expectations on general economic situation, employment scenario, overall price situation and own income and spending. The data obtained from the survey is used to calculate the Current Situation Index (CSI), which is expressed in points.

In fig.8, the CSI point was -0.6 at the end of Q1. The point fell sharply to -19.2 at the end of Q2. The index rose, but remained negative, to -17.1 at the end of Q3 and further to -15.9% at the end of Q4. The drammatic fall in the index at the end of Q2 might be due to change in consumer perception caused by Covid- 19.

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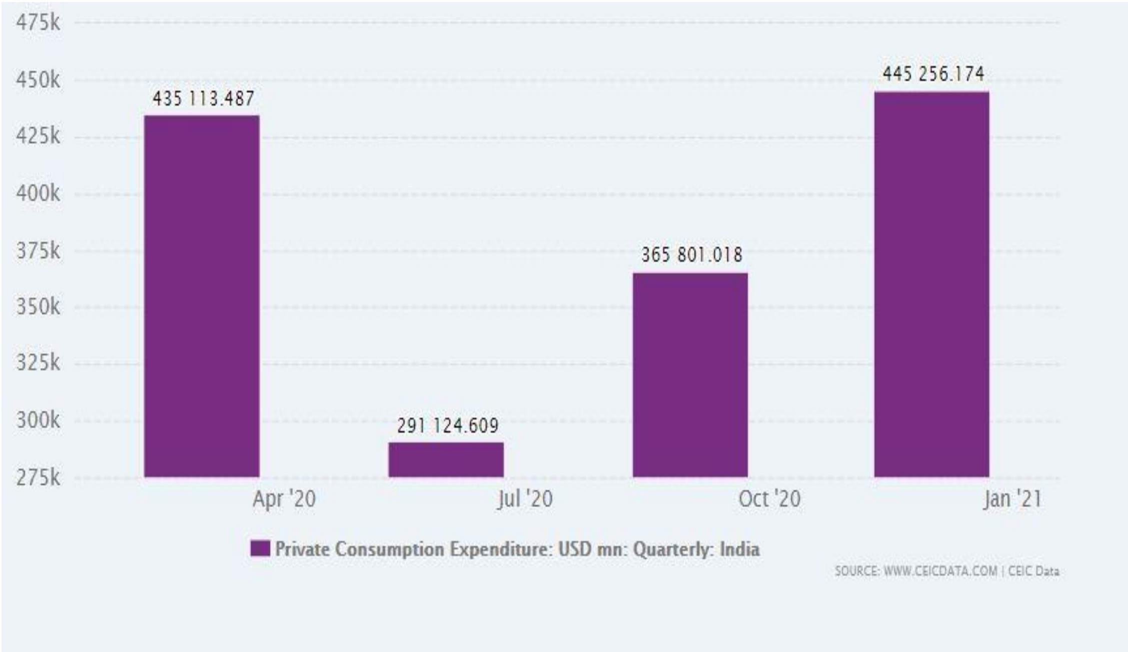

Figure 4: Private Consumption Expenditure

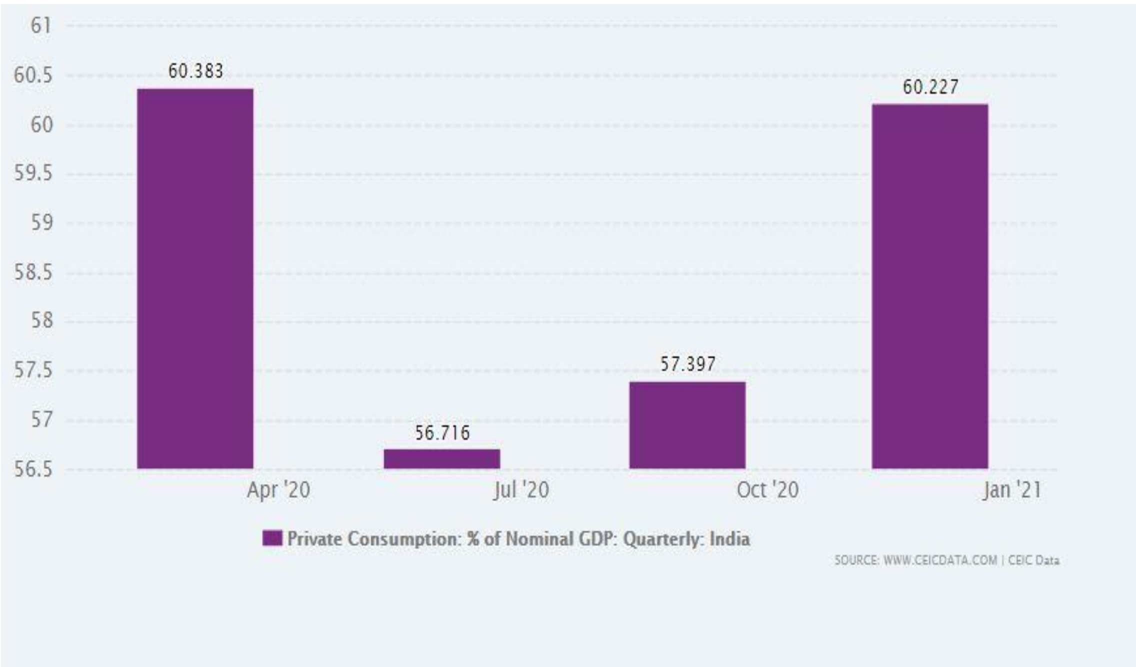

Figure 5: Private Consumption Expenditure as Percentage of GDP

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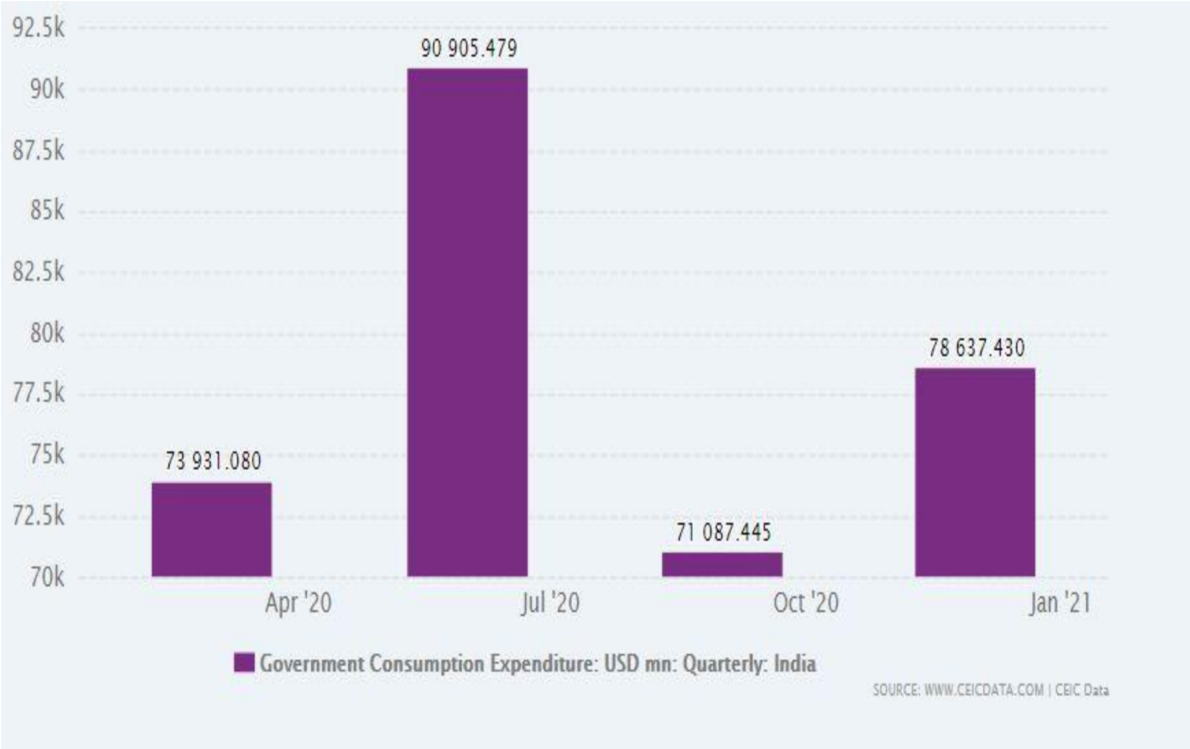

Figure 6: Public Consumption Expenditure

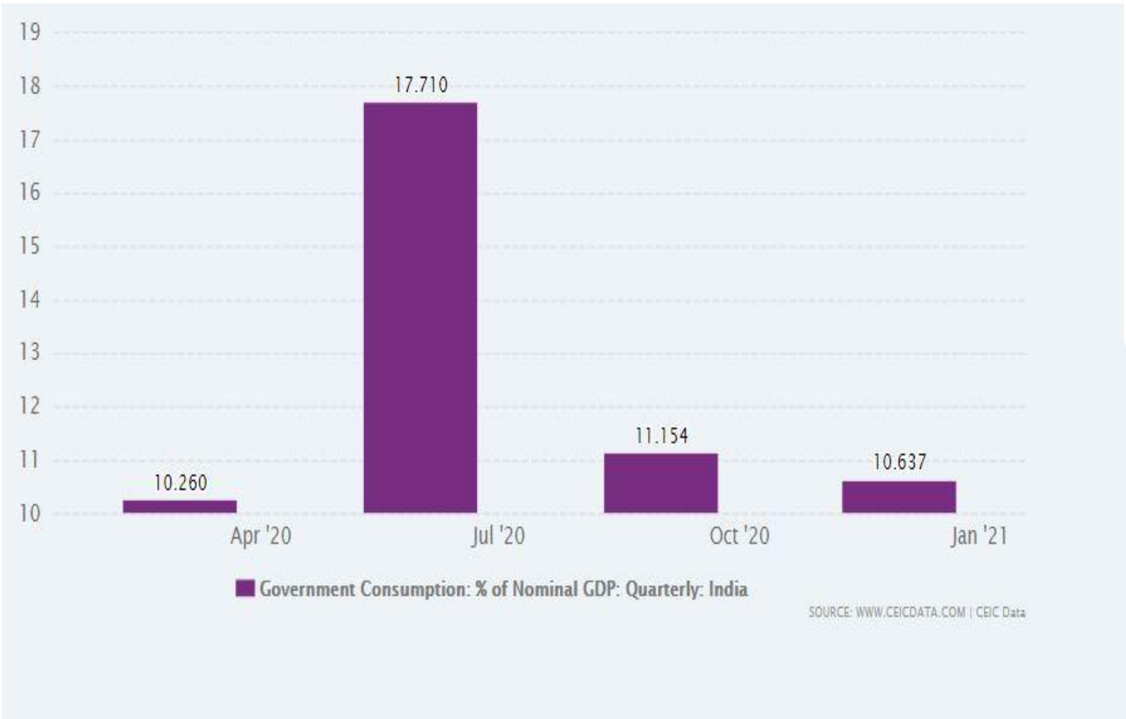

Figure 7: Public Consumption Expenditure as Percentage of G

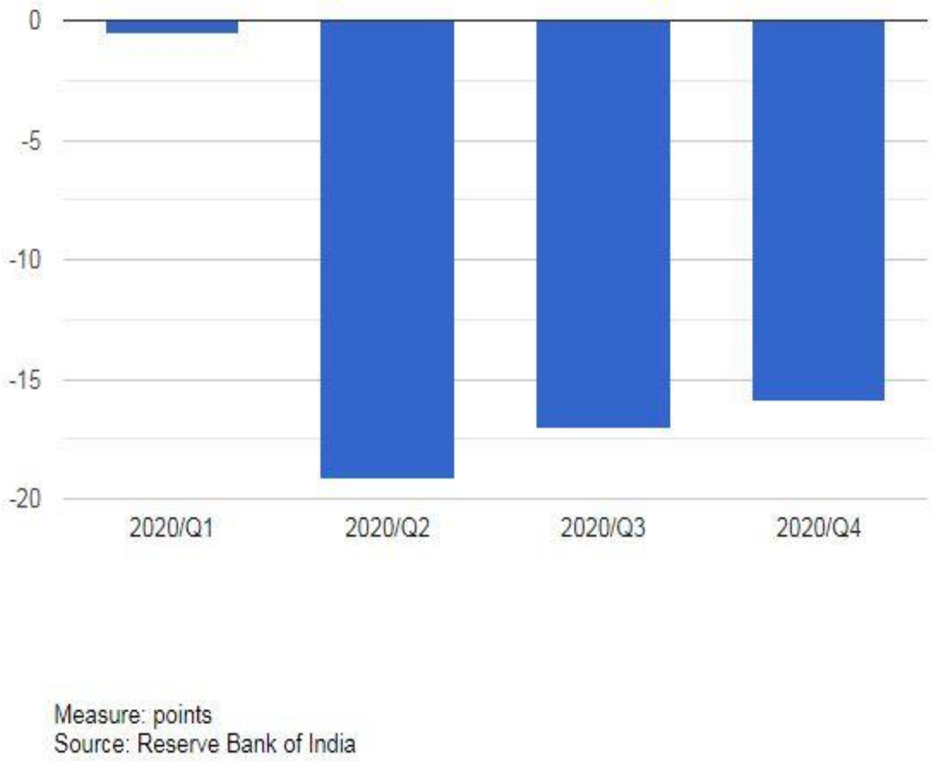

Figure 8: Consumer Confidence Survey- Current Situation Index (CSI)

3.3. Investment

3.3.1. Investment spending

Investment is the value of fixed capital assets (plus stocks) produced in an economy over a period of time – investment refers to the creation of capital goods. Investment spending is an injection into the circular flow of income.

Fig. 9 shows that the investment spending was 205.29 billion USD at the end of Q1. It fell drastically to 110.17 billion USD at the end of Q2. It recovered and rose to 177.58 billion USD at the end of Q3 and further rose to 207.32 billion USD.

3.3.2. Investment as Percentage of GDP

In fig. 10, investment as a percentage of GDP was 28.67% at the end of Q1. It fell to 20.63% at the end of Q2. It recovered and rose to 27.32% at the end of Q3 and further rose, but marginally, to 27.7% at the end of Q4.

3.3.3. Investment Growth

In fig. 11, investment growth was 3.08% at the end of Q1. It fell drastically to -47.72% at the end of Q2. It recovered and reached, but remained negative, to -6.98% at the end of Q3. It became positive and rose to 5.91% at the end of Q4.

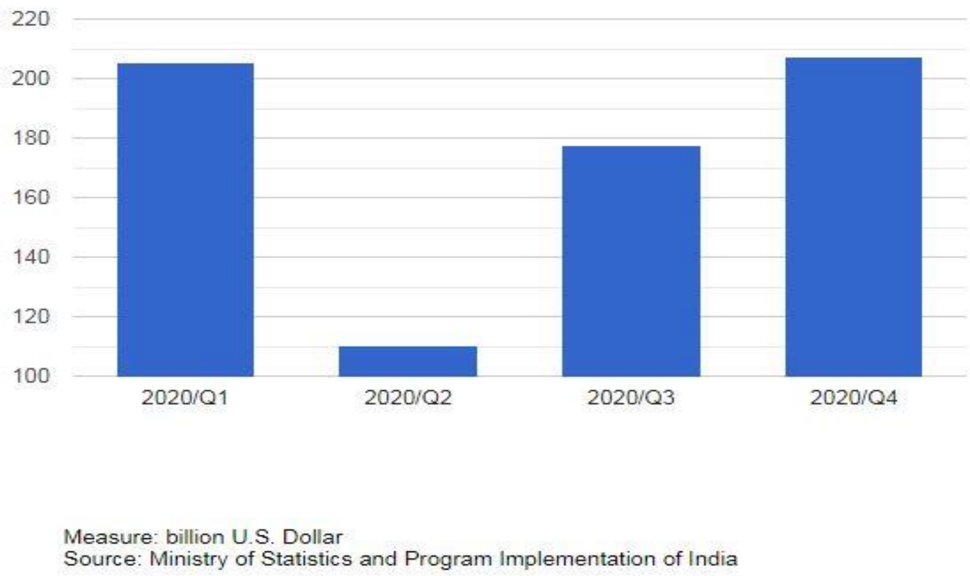

Figure 9: Investment spending

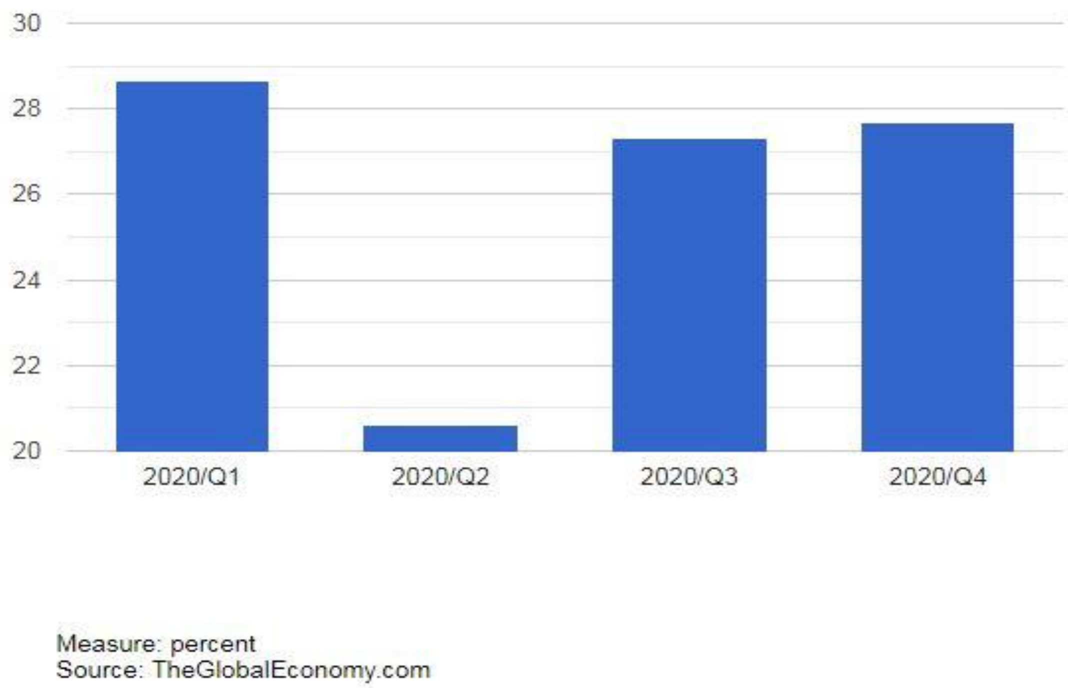

Figure 10: Investment as Percentage of GDP

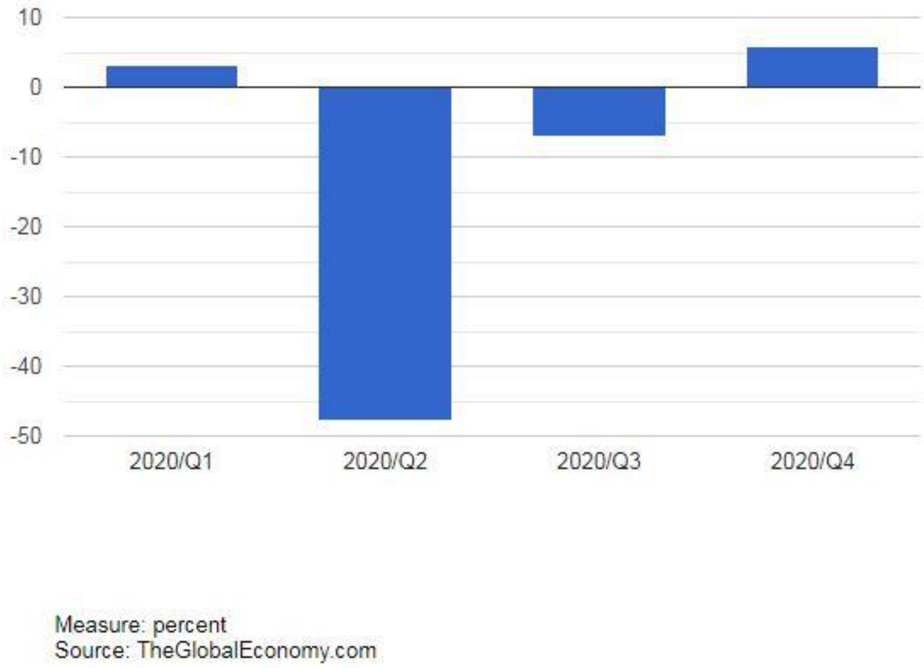

Figure 11: Investment Growth Rate

3.4 Government and Public Finance

3.4.1. Fiscal Deficit as Percentage of GDP

Fiscal deficit is defined as the difference between total revenue and total expenditure of the government is termed as fiscal deficit. It is an indication of the total borrowings needed by the government. While calculating the total revenue, borrowings are not included.

Fig. 12 shows that fiscal deficit as a percentage of the GDP was 4.597% at the end of Q1. It rose to 6.06% at the end of Q2. It rose marginally to 6.294% at the end of Q3 and then fell marginally to 6.02% at the end of Q4. In figure 12, the negative sign represents negative fiscal surplus i.e. positive fiscal deficit.

3.4.2 Tax Revenue

Tax revenue is defined as the revenues collected from taxes on income and profits, social security contributions, taxes levied on goods and services, payroll taxes, taxes on the ownership and transfer of property, and other taxes.

In fig. 13, the tax revenue of the government was the lowest at the end of the month of May i.e. 1.64 billion USD. A sharp decline can be seen after the end of March, 2020. The tax revenue fell from 32.36 billion USD at the end of March 2020 to 2.81 billion USD at the end of April 2020. The tax revenue was highest at 37.21 billion USD at the end of December, 2020.

3.4.3 Tax Revenue as Percentage of GDP

Fig. 14 shows that the tax revenue as the percentage of GDP was 8.637% at the end of Q1. It fell sharply to 3.463% at the end of Q2. It started rising and reached to 6.832% at the end of Q3 and further rose to 9.235% at the end of Q4.

3.4.4 National Government Debt

The national debt is the public and intragovernmental debt owed by the centralgovernment. It’s also called sovereign debt, country debt, or government debt.

The government debt was 1255.11 billion USD at the end of Q1. It rose drastically to 1341.93 billion USD at the end of Q2. It further rose to 1455.57 billion USD at the end of Q3 and to 1496.55 billion USD at the end of Q4 (Fig. 15).

3.4.5 National Government Debt as Percentage of GDP

The government debt was 46.495% at the end of Q1. It rose to 52.68% at the end of Q2. It rose to 56.23% at the end of Q3 and further rose to 56.589% at the end of Q4. (Fig. 16)

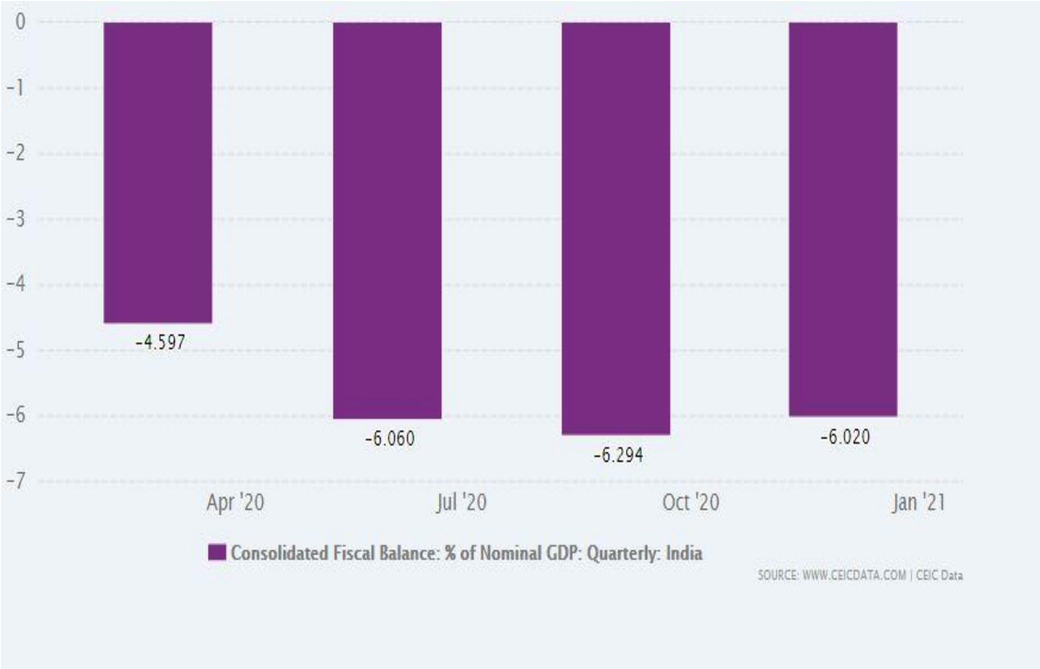

Figure 12: Fiscal Deficit as Percentage of GDP

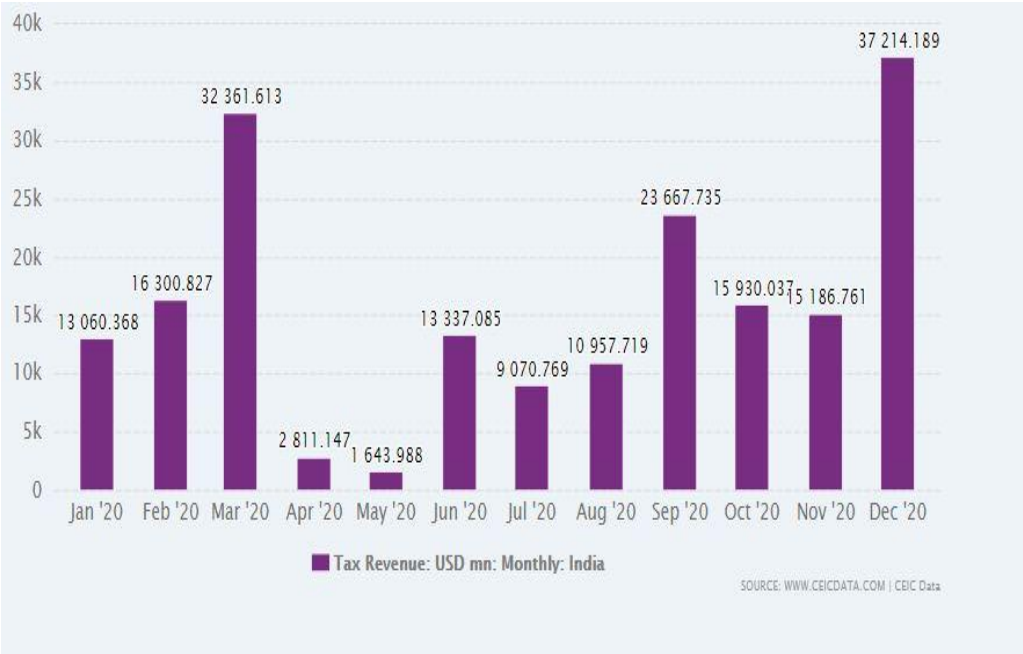

Figure 13: Tax Revenue

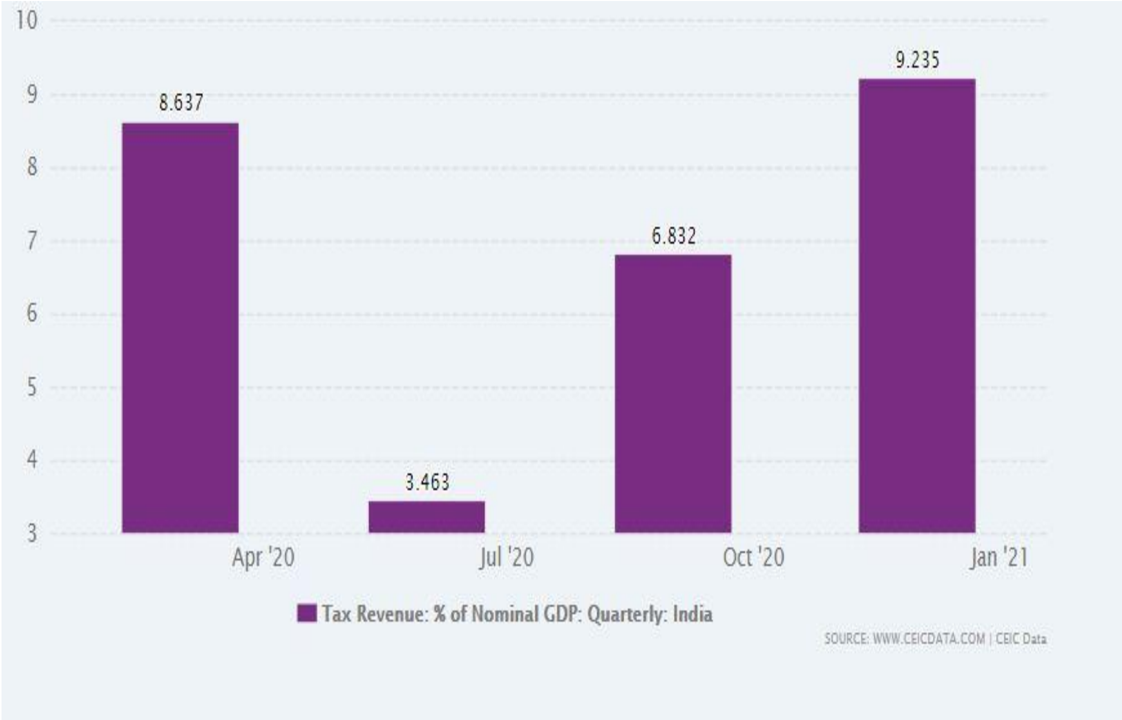

Figure 14: Tax Revenue as Percentage of GDP

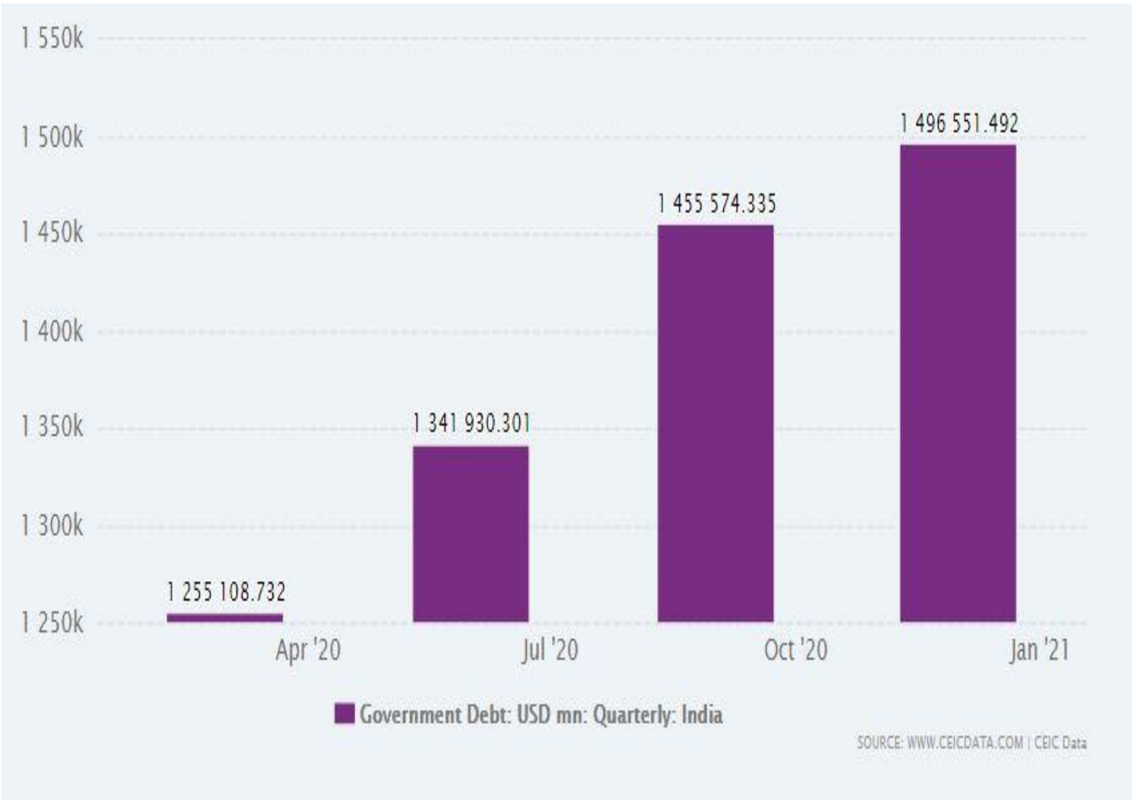

Figure 15: Government Debt

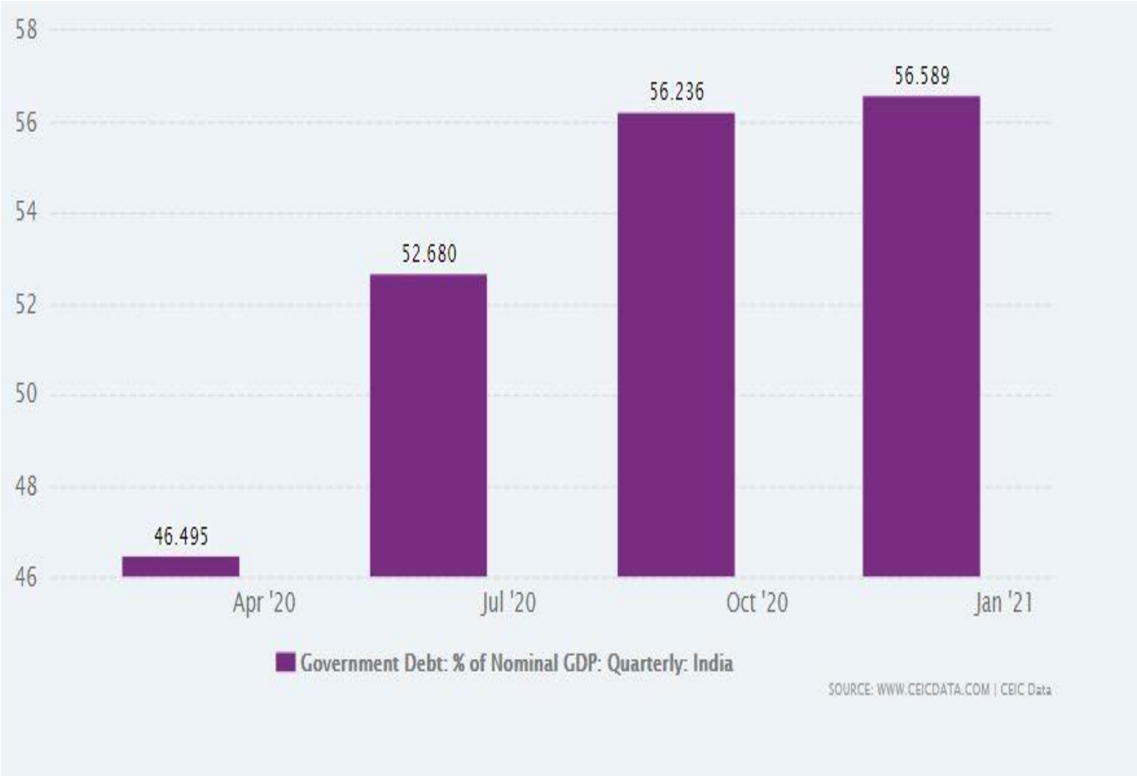

Figure 16: Government Debt as Percentage of GDP

3.5 External Sector

External sector accounts for the transactions between the country and the rest of the world.

3.5.1. Exports

The export volume had hit the lowest at the end of April, 2020. The fall in exports was also the sharpest in that period, where it fell from21.90 billion USD at the end of March, 2020 to 10.16 billion USD at the end of April, 2020. However, the export volume recovered after April 2020 and showed a rising trend. (Fig. 17)

3.5.2. Imports

Like exports, imports also had hit the lowest at 17.09 billion USD at the end of April, 2020, after falling sharply from 31.47 billion USD at the end of March, 2020. However, it started recovering after April, 2020 and showed an upward trend. (Fig. 18)

3.5.3. Trade Balance

Trade balance refers to the difference between exports and imports.

The year 2020 started with a high trade deficit. It started falling and became trade surplus at the end of June, 2020. However, the trade balance again started falling and became deficit after June. (Fig. 19)

3.5.4. Current Account Balance

The current account is a country's trade balance plus net income and direct payments. The trade balance is a country's imports and exports of goods and services.

India had a current account surplus of 584 thousand USD at the end of Q1. The surplus rose to 19.02 billion USD at the end of Q2. It fell to 15.12 billion USD at the end of Q3 and fell further and became current account deficit of 1.72 billion USD. (Fig. 20)

3.5.5. Foreign Direct Investment

Foreign direct investment (FDI) is defined as an investment involving a long-term relationship and reflecting a lasting interest and control by a resident entity in one economy (foreign direct investor or parent enterprise) in an enterprise resident in an economy other than that of the foreign direct investor (FDI enterprise or affiliate enterprise or foreign affiliate).

The FDI in India was 15.19 billion USD at the end of Q1. It fell to 2.11 billion USD at the end of Q2. It recovered and rose to 27.08 billion USD at the end of Q3 and then fell to 19.97 billion USD at the end of Q4. (Fig. 21)

3.5.6. Foreign Portfolio Investment

Foreign portfolio investment (FPI) consists of securities and other financial assets held by investors in another country. It does not provide the investor with direct ownership of a company's assets and is relatively liquid depending on the volatility of the market. Along with foreign direct investment (FDI), FPI is one of the common ways to invest in an overseas economy. FDI and FPI are both important sources of funding for most economies.

The net portfolio investment was negative (-14.74 billion USD) at the end of March, 2020. It rose to 1.09 billion USD at the end of Q2. It rose sharply to 7.74 billion USD at the end of Q3 again to 21.7 billion USD at the end of Q4. (Fig. 22)

Figure 17: Exports

Figure 18: Imports

Figure 19: Trade Balance

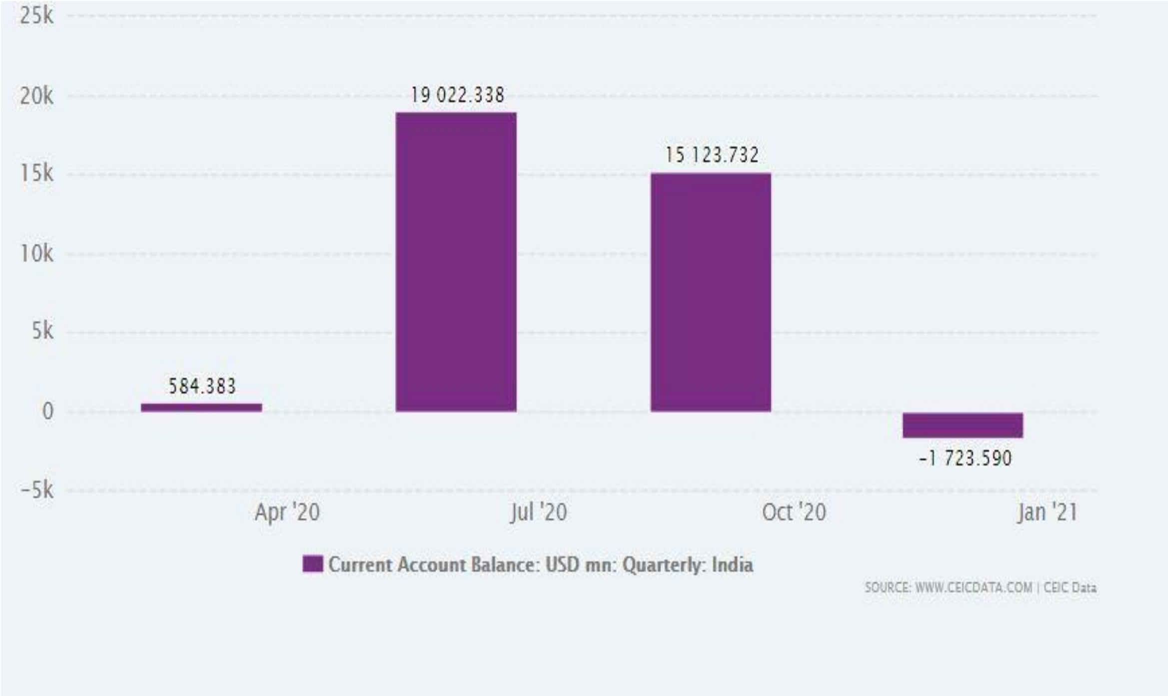

Figure 20: Current Account Balance

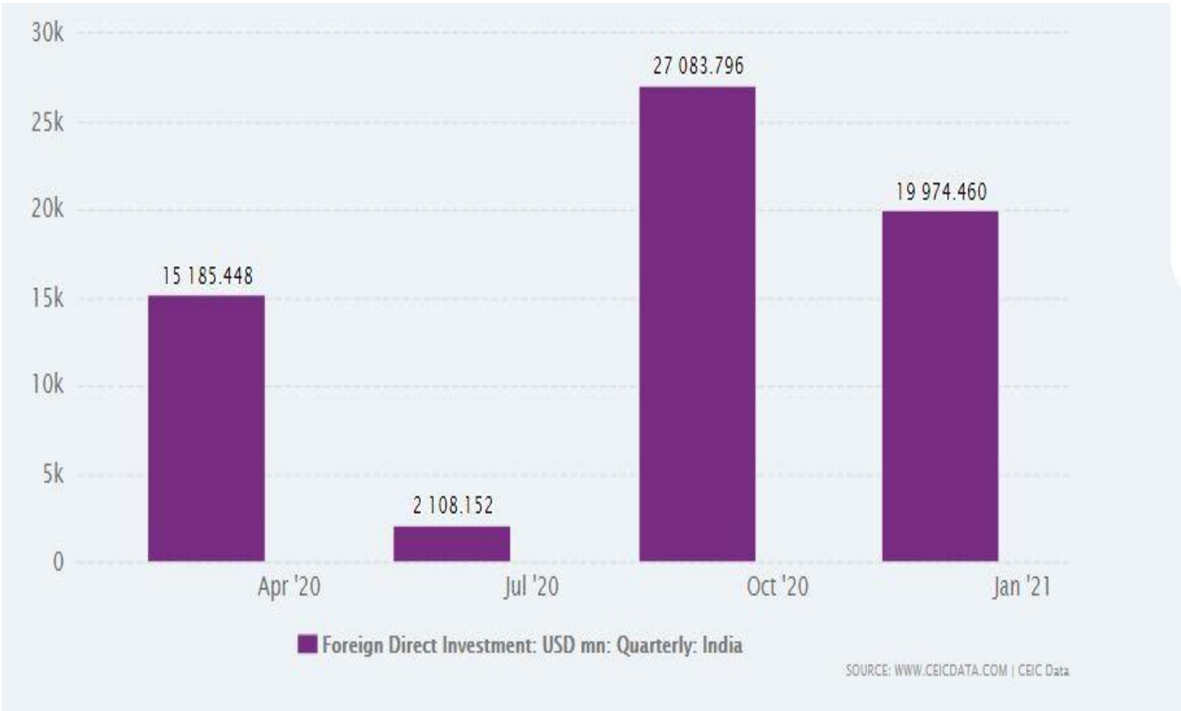

Figure 21: Foreign Direct Investment

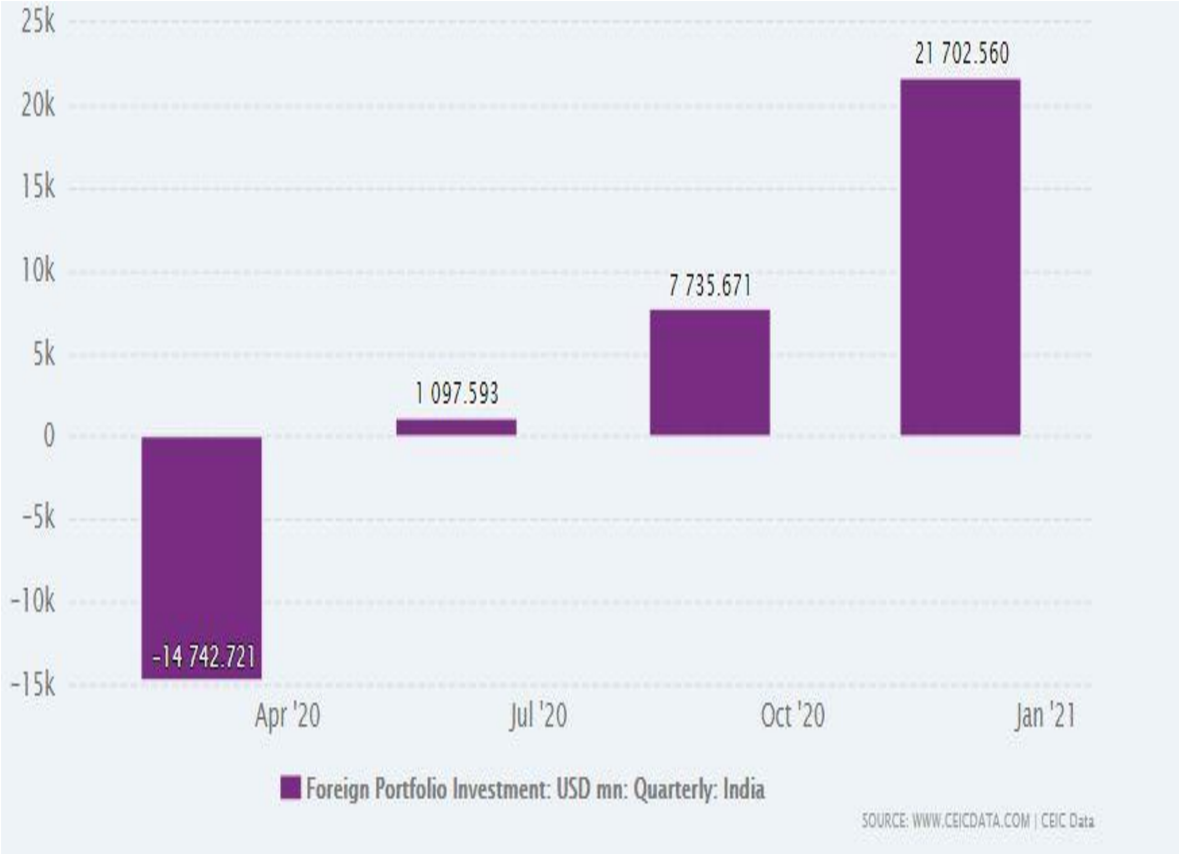

Figure 22: Foreign Portfolio Investment

IV. INTERPRETATION AND CONCLUSION

The data presented in the papers show that the macroeconomic aggregates deteriorated from the onset of the Covid- 19 pandemic. According to the elementary macroeconomic theories, the output (GDP) is driven by the consumption, investment and government spendings, as well as the net exports. The ripple effects of the pandemic can be seen on the components of the spendings, which brought down the aggregate growth rate of the economy.

The end of the the Q1 of 2020, became the point of divide, from where they deteriorated sharply. For instance, the consumption expenditure, investment expenditure, tax revenue and FDI fell sharply after Q1. This might have come from the drastic change in consumer and producer sentiments and imposition of lockdown across the country.

Most of the aggregates started recovering after Q2. This might be due to gradual unlocking of the economic activities. So, improvement can be seen in the aggregates Q2 onwards.

The most astonishing aggregates have been trade balance and current account balance. Both the aggregates actually showed improvement from the onset of the Covid- 19 pandemic. Whereas, the trade balance started deteriorating as the process of unlocking was started gradually.

International Monetary Fund chief, Kristalina Georgieva, pointed out that the year 2020 could see the worst global economic fallout since the Great Depression in the 1930s, with over 170 countries likely to experience negative per capita GDP growth due to the raging coronavirus pandemic.

Surbhi Arora (2020) highlighted that countries are facing two kinds of shocks- health shock and economic shock. Health shock may be temporary and can be curbed with vaccination, but economic shock will take much longer to heal. Though the demonetization and the implementation of the Goods and Services Tax (GST) came as previous shocks, the demand and supply processes were not disrupted. However, the Covid- 19 pandemic, the consequent lockdown and changes in the perception of the economic agents, disrupted the demand and supply mechanism.

Thus, a drastic deterioration can be seen in the selected macroeconomic aggregates from the onset of the pandemic and recoveries in them post the unlocking process.

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