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ON THE DISPUTE OF INDIA'S DEBT BURDEN: A STATISTICAL OUTLOOK OF 2024

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Abstract: India is a growing nation and is now the fifth largest economy of the world as per the reports of Forbes India and International Monetary Fund in April 2024. Despite the sustainable growth of the Indian economy, the sovereign debt of India is a major concern for the researchers and economic thinkers across the country. This article is an attempt to pro- vide a statistical outlook of India's external debt and its key indicators based on a historical data set by the end of September 2023. A comparison has also been made among the top-5 economies of the world for their external debt burden. This article also signifies the role of estimated volatilities for major key indicators of external debt for India as well as for the leading economies of the world. This article is expected to build up a road map of India for the debt handling to avoid the debt crisis in future.

Keywords: Indian economy, debt burden, external debt, volatility, top-5 economies.

1. INTRODUCTION

India's growing debt is a genuine concern as a developing country and an emerging economy of the world from last few years. According to the international monetary fund (IMF) report, India's general debt could be 100% of gross domestic product (GDP) by the fiscal year 2028 provided the circumstances are not favorable. Following the economic crisis terminology, the debt over 80% of GDP is alarming for fiscal crisis. IMF data reports that India's debt has increased up to 82.4% of GDP and may be under control by a better economic planning and execution in the coming years. Due to global

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environmental crisis, pandemic situations and the growing financial needs, the debt burden rose in many countries. The report says that the number of countries, facing high levels of debt, had increased up to 59 in 2022 from 22 in 2011. Recently, the IMF has raised serious concerns about Indias long-term sustainability of its debt burden. IMF quoted,

"Long-term risks are high because considerable investment is required to reach Indias climate change mitigation targets and improve resilience to climate stresses and natural disasters. This suggests that new and preferably concessional sources of financing are needed, as well as greater private sector investment and carbon pricing or equivalent mechanism."

It is, therefore, important to explain the different terminologies that describes Indias debt burden in true sense.

External Debt: External debt is that part of a country's debt which is borrowed from a lender outside the country like commercial banks, governments of other nations, international financial institutions, etc. It is categorized under the sovereign debt if a country fails to repay its external debt amount. Such a situations is called as a 'debt crises'.

Debt to GDP Ratio: It is the ratio of a country's public debt to the gross domestic product (GDP) of a country. The debt-to-GDP ratio may also be interpreted as the number of years required to repay a loan amount if the mode of repayment is nothing but the nation's GDP. The higher this ratio, the lesser the chance that a country could repay its debt and it causes the risk of default higher, which leads to the crisis like situation in the domestic and international markets. Debt-to-GDP ratio is a strong measure for the financial leverage of an economy. One of the fiscal criteria states that the debt ratio must be below 60% of the GDP (see, for example, Hughes Hallett and Lewis (2007)).

Debt Service Ratio: For a country, the debt service ratio is defined as the ratio of a country's debt service payments (principal with interest) to its total export earnings. A low debt service ratio keeps a country's international finances healthier. It provides information about the interplay between debt and the real economy. For a healthy economy this ratio is recommended as below 10% with an upper limit is 20% (see, for example, Lee (1983)).

Reserve to Debt Ratio: It is defined as the dollars in-reserve to pay the lender for every dollar of debt. This ratio indicates the extra amount of funds in-reserve, by an economy, to face the financial crisis or adverse situations if they occur in future.

Concessional Debt: A loan is considered as 'concessional' if its 'grant element' is at least 25%. Usually, a grant element is used to measure the degree of concessionally of a loan. The grant element is defined as the difference between loan's face value and the present value; which is expressed as a share of the loan's face value. A larger grant element indicates a large concessional debt (see, for example, Bhattacharya and Rashmin (2020)). In India, a loan from multilateral or bilateral source is categorized under 'concessional loan'. Such a loan is specified by its terms of maturity and a lesser interest rate than any other lender. International Development Association (IDA) and International Fund for Agricultural Development (IFAD) are among the top lenders for concessional debt.

Short-Term Debt: This is the current liability which is to be paid off within a year. Such a debt includes short-term bank loans, wages, lease payments and payable income taxes, etc. A short-term debt is, typically, characterized by less than 25% or more than two-third of the total debt. It can be seen that the growing markets rely more on short term debt, for their funding needs, than the established ones (see, for example, Turner (2002)).

The public debt has rapidly increased in low- and middle-income countries, especially, after covid recession. According to the IMF, almost 60% of the developing countries experienced a debt crisis in the last five years. For instance, the countries like Zambia, Ghana and Sri Lanka have declared defaulters by 2022 and there are countries who are at the verge of it such as Pakistan and Egypt (see, for example, Fischer and Storm (2023)). The debt crisis occurs when a country's expenditure is higher than its nation's income collectively by all goods and services. India is among the top five economy of the world and is probably in top three when the debt burden is concern. The public debt is needed for the economic boost-up, investment expansion, infrastructure development, increasing employment. Usually, when a country continues to pay its interest on overall debt without re-borrowing and harming the economy, it can be called a stable economic nation.

1.1. Objective

This article is more data oriented and it records the historical data over the time and explains the key insights therein. This article includes the following objectives:

- To explain India's current scenario of debt burden and its various major indicators empirically.
- To understand the debts movement through their volatility patterns, over the time, of India's key indicators of external debt.
- To compare the world's top-5 economies for their external debts burden based on a historical time series data from 2006 to 2022.

2. EXEMPLARY DATA: ITS REPRESENTATION & INTERPRETATION

To understand the debt burden status of India in a better way, we have considered a historical data set on the above discussed key indicators in Table 3 (see Appendix). This data can be seen on the website of Department of Economic Affairs (DoEA), India (see, *https://dea.gov.in/sites/default/files/India%27s%20Quarterly%20External%20Debt%20Report%20for%20quarter%20ending%20September%202023_0.pdf).* The time series plots of each key indicator are shown in Figure 3. We have also considered the data account for the debt burdens (as a percentage of GDP) of the world's top-5 economies from the website of IMF (see Figure 1). This data on top economies is taken for the comparison purpose and to rate the India's debt crisis among its competitors.

Figure 1 exhibits the trends of debt burden of top-5 economy of the world. The figure is showing that Japan is experiencing the highest burden of debt among all; while China is lowest in top-5. India is over crossing Germany since last 8 years but it is close to the lowest burdened nation in all. The USA is having more debt burden than the India has. Figure 2 reveals that India and Germany hold 14% of overall debt by the top-5 economies of the world while, China holds only 9%. Japan and USA are among the top holders of debts world-wide and their debt shares are 43% and 20% respectively. Interestingly, China and India are the two largest populations of the world and in their debt shares they are in the bottom two among world's top economic countries.

The figures can be interpreted in many ways, for instance, as a nation like India, it is more important to focus on its goal achievement, investments and infrastructure developments rather to consume a large part of debt to feed the own population and politicizing it. The latter scenario can be seen in the neighboring countries like Sri Lanka and Pakistan in the last few years. Even

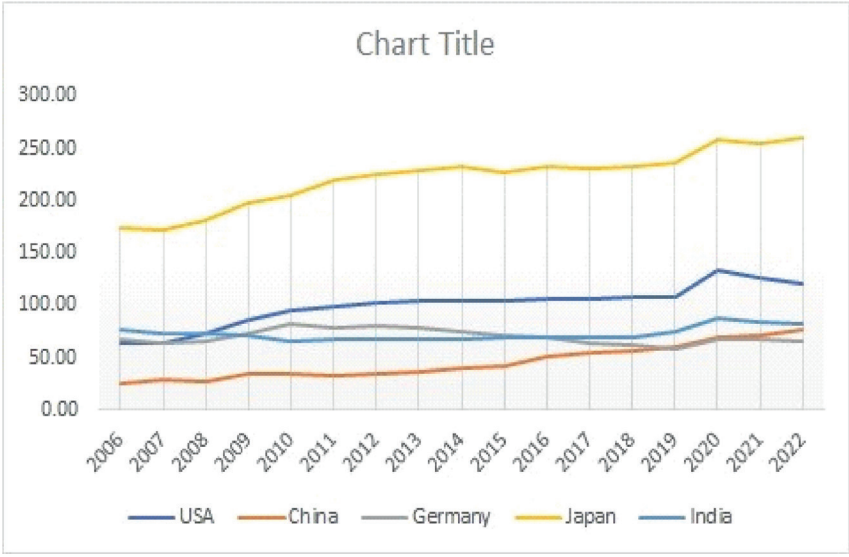


Figure 1: Time series plots of debt burden on top-5 economies of the world

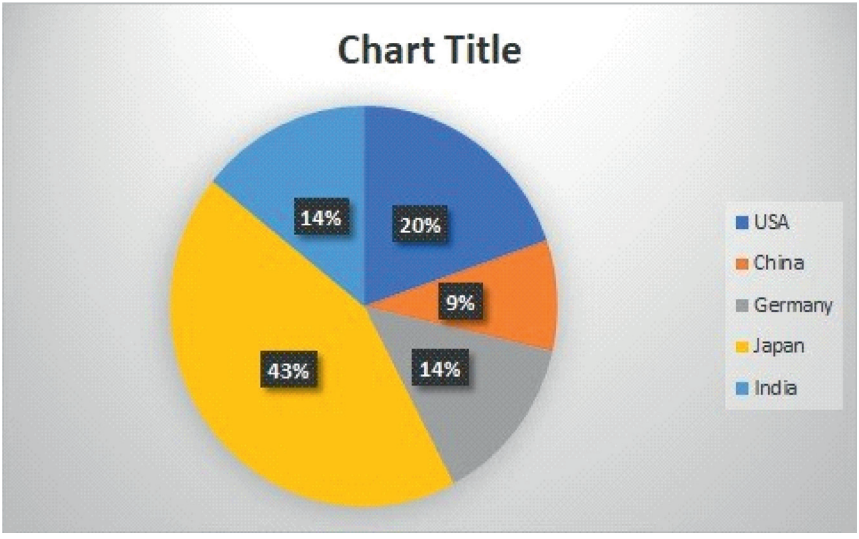


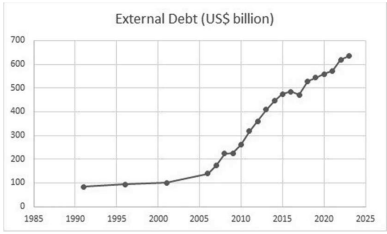
Figure 2: Debt shares of top-5 economies of the world

the developed countries like USA are liking more debt to build-up its economy and infrastructure developments. A good investment can pay-off your debt by a good interest of earnings.

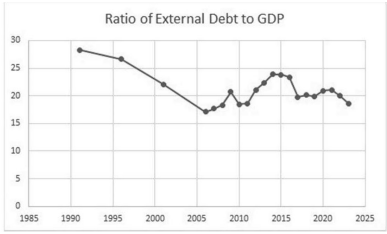
Refer to Figure 3 (a), India's external debt is increasing year after year, which is a genuine concern for a developing nation. According to the report of DoEA, by the end of December 2023, the figure is 648.2 billion US$ which is

almost 13.0 billion US$ over than its last figure. Another major key indicator is ratio to external debt to GDP, which is having a decline tendency (see Figure 3 (b)). This ratio is declining up to 18.6% of GDP from its last figure which was 20.0%, and this indicates that India is in a good position to avoid the debt crisis in the upcoming years. It may further indicate that India's investments and productions are rising in a good way, especially, after covid crisis. Debt service ratio of India has sharply declined by 2005, and after that it is maintain a level around 5 to 6; with a recent figure 6.7 (see, Figure 3 (c)). Again, this is a good sign for India to keep its fiscal growth healthier in the global market. Also, as recommended, it is below 10% which indicates that India is doing good in-service sectors during and after the covid pandemic. Since the economic crisis in 1991, India did well to reserve the foreign exchange and the ratio of foreign exchange reserves to total debt was continuously increasing by 2008. After that, it showing a declining trend with a good hike in 2021 when it was 100.6. After the covid pandemic this ratio is decreasing at a rate of around 6% from 2022 to 2023; but still the situation is not much vulnerable if we see the last 10 years data closely (see, Figure 3 (d)).

Interestingly, as per RBI report, during the covid period in 2020 India's Forex reserves crossed a benchmark of $500 billion for the first time, and the current figure is $642.49 billion by the end of March 2024. It is important to mention here that India is among the largest holders of Gold in the world as documented by the Forbes India. Figure 3(e) depicts the decreasing pattern of ratio of concessional to total debt. It reflects declination of the shares of multilateral and bilateral debts of India's total external debt (see, for example, Bajpai (1994)). The trend line of the ratio of short-term debt to foreign exchange reserves is looking at a constant level around 20.0, after a sharp decline from its early 90's figures (see Figure 3 (f)). This shows a stable scenario for a debt borrower economy, however, an increment of 1.7 is observed by the end-September from its last observation in end-March, 2022. From the beginning of 21st century, an exponential increment is observed in the ratio of short-term debt to total debt observations (see Figure 3(g)). The current figure of short-term debt ratio to the total debt is 20.1 by the end-September 2023, which is increased by 0.4 from its last observation in end-March 2022. After a minute observation, it shows that the short-term debt is maintained as less than 25% of the total debt throughout, except for a few years from 2012 to 2015 and in



(a)



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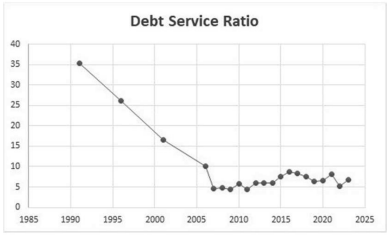
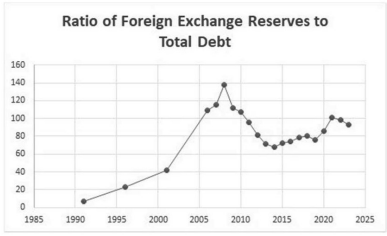


(c)



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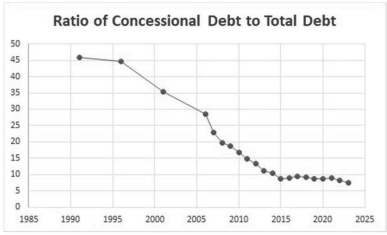
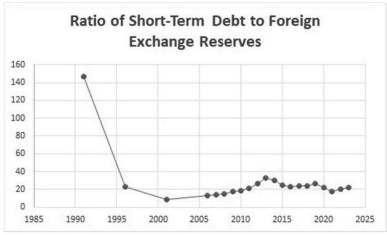
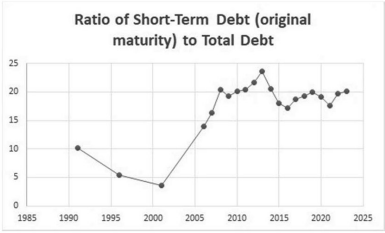


(e)



(f)



(g)

Figure 3: Time series plots of India's key external debt indicators

2019. Since last fifteen years, this level is maintained around 20 to 21, which is showing a good awareness of the Indian government's financial system to not let it go far away from the controlled limits. The ups and downs of these ratios signify the economic controlling of the India as a developing country and simultaneously, the balancing between investments and productions, especially, during the last decade.

2.1. Volatilities of Debt Indicators

A simple volatility equation is represented by,

$$y_t = e^{h_t/2}\epsilon_t, \tag{1}$$

where y_t and h_t are the observation and log-volatility at time t respectively. Also ϵ_t is a random normal variate, at time t, with its mean 0 and standard deviation 1 (see, for example, Tripathi and Upadhyay (2019)). Using (1), the volatility corresponding to each observation can be obtained and is represented by eht /2. Volatility patterns of the major key debt indicators, in India, are exhibited by Figure 4.

Figure 4: Volatility patterns of India's key external debt indicators.

It can be observed that most of the debt indicators are not much volatile except those associated with external debt, concessional debt and short-term debt. The trend of volatilities indicates that India may continue to take the financial loans in future to enhance its infrastructure, investments and productivity for the short-term and long-term goals of the country. Although, the situation does not seem bad as the volatility's patterns are not much deviated from their respective levels which is under control for almost all the major key debt indicators.

The volatilities of external debts burden for top-5 world's economies are also calculated by using (1), and have been exhibited by Figure 5. It is clearly shown that the external debts of USA, China, Germany and Japan are more volatile than that of India. However, these patterns are quite random by nature

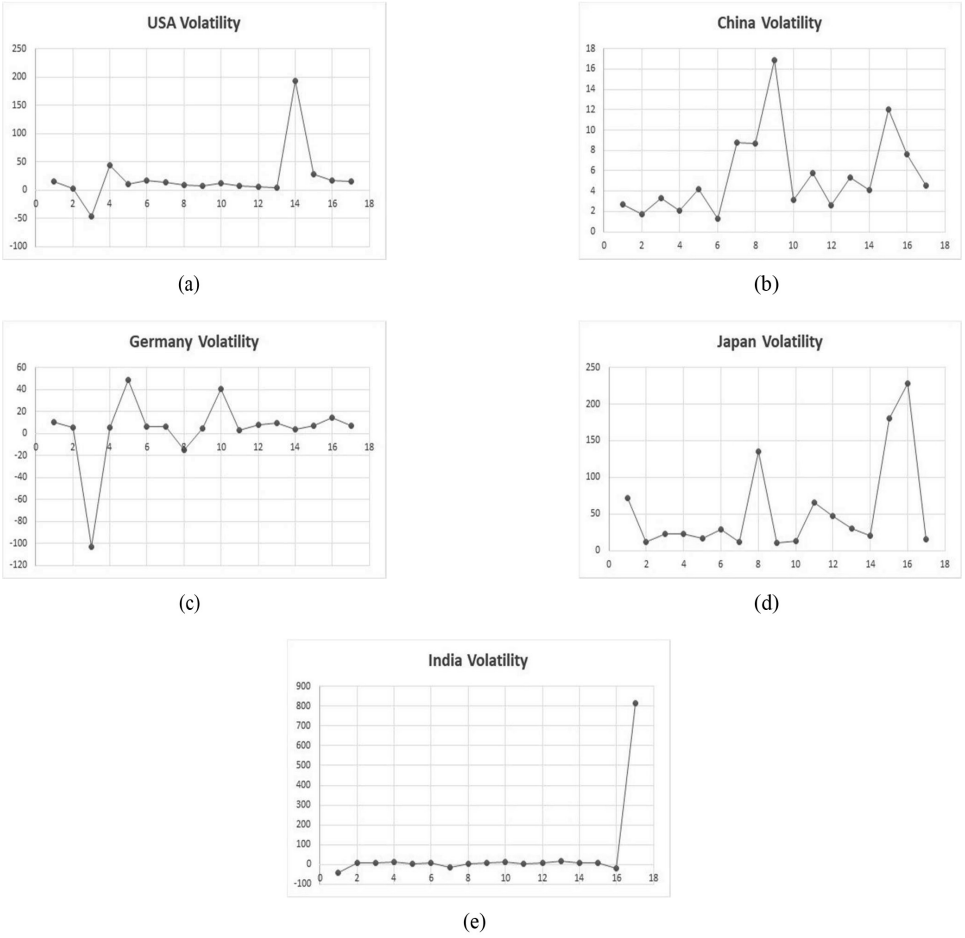


Figure 5: Volatility patterns of external debts burden on top-5 economies of the world.

and their values are very much affected by the random component ϵ_t . Figure 5 may be interpreted as; India is doing good in terms of its loan repayments and is making balance between its debt burden and the fiscal policies related to development and investments.

3. CONCLUSION AND DISCUSSION

This paper explains the current debt scenario of India through a historical data on the major indicators of external debt. The different graphs on the major key indicators explained well in terms of their economics and statistical aspects. This article also calculated the estimates of volatilities of the key indicators and demonstrated the plots. The external debt of India is being compared with those of some major economies of the world and it finds that India's situation is not much vulnerable in terms of its debt burden.

On the basis of this analysis, one may rate India among the most balanced economies when it is compared with the world's top-5. Definitely, India is under debt and this situation may continue to prevail in future too. The repayment strategy and a good investment plan may increase India's productivity to a large scale which ultimately can balance out the debt situation in future. Despite its debt burden, India sustains its position among the top most economies of the world and is expected to maintain it provided the government opens its door for the top investors and attracts the leading companies by enhancing the infrastructures to earn a good profit from them. For India, this is also suggested to maintain its level of volatility of external debt to away from an economic crisis situation in future.

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Appendix

Time series data on the key indicators of India's external debt

Year (end March)	*External Debt (US $ billion)*	*Ratio of External Debt to GDP*	*Debt Service Ratio*	*Ratio of Foreign Reserves to Total Debt*	*Ratio of Concessional Debt to Total Debt*	*Ratio of Short-term Debt to Foreign Exchange Reserves*	*Ratio of Short-term Debt (original maturity) to total debt*
1991	83.8	28.3	35.3	7.0	45.9	146.5	10.2
1996	93.7	26.6	26.2	23.1	44.7	23.2	5.4
2001	101.3	22.1	16.6	41.7	35.4	8.6	3.6
2006	139.1	17.1	10.1	109.0	28.4	12.9	14.0
2007	172.4	17.7	4.7	115.6	23.0	14.1	16.3
2008	224.4	18.3	4.8	138.0	19.7	14.8	20.4
2009	224.5	20.7	4.4	112.2	18.7	17.2	19.3
2010	260.9	18.5	5.8	106.9	16.8	18.8	20.1
2011	317.9	18.6	4.4	95.9	14.9	21.3	20.4
2012	360.8	21.1	6.0	81.6	13.3	26.6	21.7
2013	409.4	22.4	5.9	71.3	11.1	33.1	23.6
2014	446.2	23.9	5.9	68.2	10.4	30.1	20.5
2015	474.7	23.8	7.6	72.0	8.8	25.0	18.0
2016	484.8	23.4	8.8	74.3	9.0	23.2	17.2
2017	471.0	19.8	8.3	78.5	9.4	23.8	18.7
2018	529.3	20.1	7.5	80.2	9.1	24.1	19.3
2019	543.1	19.9	6.4	76.0	8.7	26.3	20.0
2020	558.3	20.9	6.5	85.6	8.8	22.4	19.1
2021	573.4	21.1	8.2	100.6	9.0	17.5	17.6
2022	619.0	20.0	5.2	98.1	8.3	20.0	19.7
20231	635.3	18.6	6.7	92.5	7.6	21.7	20.1

1 Provisional data by end-September