

An Analysis of the Sustainability of India's Fiscal Deficit

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Abstract— Public debt is always a significant consideration and has direct implications while taking fiscal policy decisions. It is a prevalent part of the Indian economy and has an innate influence on the national income as it has a magnitude of around 50 percent of the total Indian GDP. High fiscal deficits due to unadvised government spending, public tax evasion and slowing economic growth among other causes often lead to high public debts having the potential to hinder the growth of an economy. This threat compels governments to ensure financial sustainability through fiscal correction and consolidation and design and adhere to institutional mechanisms maintaining prudent fiscal policy. In the Indian context, it is becoming increasingly important to define an optimal level of sustainable public debt and formulate policy decisions to not breach it since the persistence of debt raises the risk of government insolvency during economic slowdowns. This study finds that the aggregate public debt must be curbed at 40 percent for a developing country like India using workable Debt Management Strategies. The trajectory followed by the increase in Indian public debt appears to be in sustainable limits as shown by several indicators.

Index Terms— Public debt, fiscal deficit, fiscal sustainability, crude oil, Debt Management.

I. INTRODUCTION

Public Debt is an essential component of the finances of a government and is often an important consideration and used as a tool while deciding an appropriate fiscal policy as it directly affects the expenses borne by the government in the upcoming years. The need for a government to borrow or raise funds arises when its aggregate revenue receipts are insufficient to pay off the incurred expenditure. The obligations that a government bears, particularly those obligations in which the government promises to pay a certain amount to the holders of a security on some future date are collectively called public debt or public borrowings. Public debt also refers to a government's total liabilities such as the amount of non-refundable loans and unpaid interest upon them and any other liabilities taken by the government to cover its annual budgetary deficits.

Public debt can be classified into two types- internal and external debt. External public debt refers to the portion of government debt borrowed from foreign lenders including commercial banks, governments, and other international financial institutions. Conversely, internal public debt refers to the part of public debt owed to lenders within the country. The level of public debt and the degree of change in it over a

time period has an intricate connection to financial policy decisions. In India, public debt currently stands at more than 50 percent of the GDP. While there are certain countries in the world where the debt-to-GDP ratio even crosses 200 percent (for instance Japan having a 240 percent debt-to-GDP ratio in 2017), it is not the absolute magnitude of the debt that is significant but how sustainable it is.

Sustainability of public debt is a critical measure of the general economic health and well-being of a nation. It indicates whether the unpaid government debt and its expected trajectory are in line with the earnings and spending (revenue and expenditure) of a government. This in turn is interpreted by many as determining whether a government is solvent or not. The study finds that for fiscal sustainability to be achieved for the Indian government, the Debt/GDP ratio must be stabilized at around 40 percent using Debt Management Strategies. The study also finds, as presented in the forthcoming analysis, that India is treating its public debt appropriately and might achieve the 40 percent benchmark if it continues to make similar progress.

II. LITERATUREREVIEW

A. Overview

[3] was among the first works to outline a model regarding the sustainability of debt by stating that a debt was only sustainable if the growth rate of the borrowing person's or entity's income was greater than the rate at which interest was being paid on the loan. [4] suggests that a policy could be termed sustainable if it kept the ratio of the net worth of the public sector to its output constant. Conversely, [5] proposed two conditions required to be true for the achievement of sustainability- a) the ratio of public debt and GNP must return to the original level after some time passes, and b) the discounted value at the current time of primary deficits to GNP must equal the negative of the Debt/GDP ratio. Conversely, [7] argues that 'sustainability' has been used repeatedly in literature but holds different meanings and implications as per the situation.

As listed in [8], governments often borrow and incur public debt to finance capital expenditures, increase economic growth, pay off BOP deficits and stabilize an economy.[9] introduced a more reasonable method of evaluating public debt as relative to the GDP of a country instead of utilizing absolute values.[11] highlights countries borrow to even out their borrowing over the medium and long term and keep their interest costs low. [7] assessed the sustainability of India's Union government's finances and concluded that the

optimal level of Debt-to-GDP ratio is 50 percent for the central government and must be reduced from 1996-97 level of 54 percent. According to analysis conducted by [12], the Indian government's public debt is at a manageable and sustainable level and is likely to remain stable over the medium to long term.

B. Importance

Public Debt is an essential component of the finances of a government and is often an important consideration and used as a tool while deciding an appropriate fiscal policy as it directly affects the expenses borne by the government in the upcoming years. This results as the procedure of raising debt and paying it off has a direct implication on the financial system, aggregate demand, money supply and sectoral spending in an economy. Being a developing country, India has to exhaust all potential sources for gathering necessary financial resources to implement sufficient development programs for the people and economy. Public debt is one of the biggest sources of mobilizing surplus savings and financial resources in an economy to address the fiscal deficit faced by the governments of several countries, especially ones that are still developing. For this reason and because the public debt portfolio of a country is the biggest in the country, it is accepted that there is a need for proficient management of public debt in a country. Recently, apprehensions about the financial sustainability of India have aggravated as a result of the high level of public debt, high fiscal and revenue deficits, slowing economic growth and unfavorable balance of trade among others.

Despite the attempts made by the Indian government to attract foreign investment and liquidate some of its holdings, it has not been able to achieve a low enough fiscal deficit yet. Moreover, high fiscal deficits often lead to high public debt severely impairing the growth of a country. This has compelled governments around the world to recognize the significance of fiscal sustainability as a crucial prerequisite for attaining financial and monetary stability. The optimal targets of financial debt are reached through fiscal correction and designing mechanisms and protocols to ensure judicious fiscal policy.

Since the persistence of government debt significantly increases the risk of government default, identifying and setting an optimal level of government debt in India is an urgent issue that must be addressed soon. Evaluating the estimated long-term relation between government debt and fiscal deficit is important while assessing if the fiscal policies enacted by the Central government are sustainable. The current study seeks to evaluate the growth in Indian government debt and its sustainability in context of the recent fiscal deterioration and give suggestions for judicious financial management policies.

C. Objectives

This research has three main objectives which have been fulfilled through this study- firstly, to analyze the public debt profile of the Union Government of India; secondly, to investigate, identify and analyze trends in various deficit indicators; lastly, to analyze the sustainability of Indian government debt.

III. METHODOLOGY

A. Overview

This study largely follows the methodology used in general literature on public debt sustainability and employs standard tools and technique. The study identifies and analyzes trends in government debt and deficit indicators to study the financial sustainability of the Indian central government for a twenty-seven year time period from 1990 to 2017. The data used for the purpose of this study have been predominantly obtained from the yearly reports of Public Finance Statistics of Government of India, Finance Accounts of the Central government. Data from RBI- State Finances and Budget Documents of Government of India- were also utilized. Percentages, arithmetic means, ratios, charts and compounded annual growth rates are used to analyze trends of public expenditures and graphs were extrapolated for future projections.

B. Public Debt Profile of the Central Government

Government liabilities are generally classified as "debt contracted against the Consolidated Fund of India and liabilities in the Public Account called Other Liabilities." Public debt is further classified into internal and external debt. External public debt refers to the portion of government debt borrowed from foreign lenders including commercial banks, governments, and other international financial institutions. Conversely, internal public debt refers to the part of public debt owed to lenders within the country.

Internal debt is constituted of marketable debt and non-marketable debt. Dated securities and Treasury bills issued through auctions make up marketable debt. Conversely, non-marketable internal debt consists of intermediate Treasury bills issued to State governments and certain Central Banks, special securities issued to National Small Savings Fund (NSSF) and international financial organizations, etc. Other Liabilities include those on account of Provident Funds, Reserve Funds and Deposits and Other Accounts.

The amount of total liabilities reported by the Indian government is usually adjusted to better showcase its outstanding debt obligations. Table 1.1 given below better exhibits the total public debt and its components for the time period starting from 1990 to 2017. As visible in the table, internal liabilities constitute the principal component of Indian public debt. It forms an estimated 95 percent of the total debt and is further growing at an aggressive pace of 13 percent compounded annually, increasing from Rs 283033 crores in 1991 to Rs 7390754 in 2017, an aggregate increase of twenty six times over the same period.

Conversely, external debt records a comparatively mild growth over the same period. Majority of the external debt is from agencies like the IDA, IBRD, ADB, etc with the remaining portion being borrowed from bilateral agencies. Furthermore, no amount whatsoever has been borrowed from international capital markets. The full sum of the external debt held is long-term and most of it is borrowed at fixed interest rates and denominated in Indian rupees (INR) eliminating the risk of interest rate and exchange rate fluctuations. However, with a tiny share of the total public

debt being external it is not as huge a concern.

The ongoing increasing trend in public debt for India is a result of the requirement of building appropriate infrastructural facilities over time. The current increase is

occurring at a compounded annual rate of 13 percent as depicted in Fig. 1. The aggregate public debt is expected to exceed the figure of Rs 10000000 crores by 2020 as seen in the polynomial projection in Fig. 2.

Table 1 Public Debt Split-up (Rs Crore)

Year	Internal Liabilities	Percentage of Public Debt	External Liabilities	Percentage of Public Debt	Total Public Debt
1990-91	283033	89.98	31525	10.02	314558
1994-95	487682	90.54	50929	9.46	538611
1999-00	962952	94.28	58437	5.72	1021389
2000-01	1102596	94.36	65945	5.64	1168541
2001-02	1294863	94.76	71546	5.24	1366409
2002-03	1499589	96.18	59612	3.82	1559201
2003-04	1690554	97.34	46124	2.66	1736678
2004-05	1933544	96.95	60887	3.05	1994431
2005-06	2165902	95.83	94243	4.17	2260145
2006-07	2435880	95.95	102716	4.05	2538596
2007-08	2725394	96.05	112031	3.95	2837425
2008-09	3036132	96.11	123046	3.89	3159178
2009-10	3395877	96.20	134083	3.80	3529960
2010-11	3781135	96.00	157639	4.00	3938774
2011-12	4347164	96.23	170088	3.77	4517252
2012-13	4893303	96.50	177289	3.50	5070592
2013-14	5485600	96.74	184581	3.26	5670181
2014-15	6084568	96.91	194286	3.09	6278854
2015-16	6669531	97.01	205460	2.99	6874991
2016-17	7390754	97.11	220078	2.89	7610832
CAGR	0.12		0.07		0.12
Average		95.55		4.45	

Source: Public Finance Statistics, Government of India

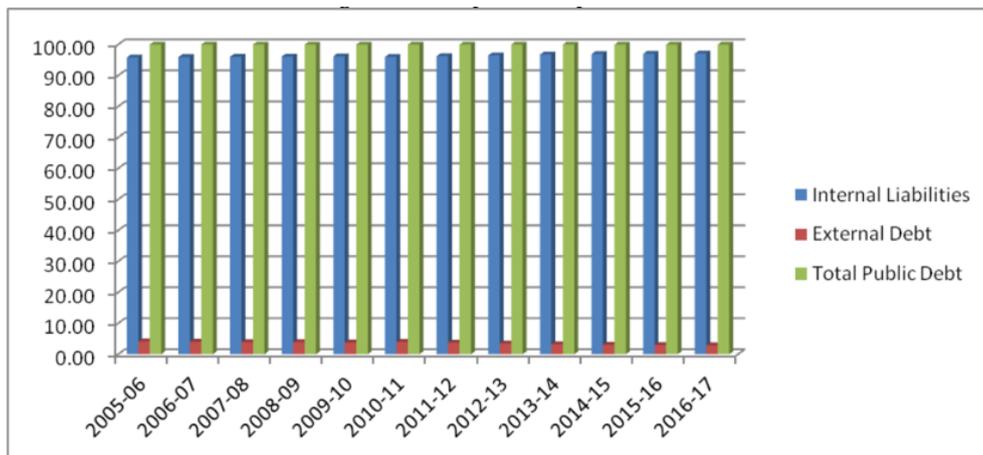


Fig. 1 Composition of Public Debt (Source: Public Finance Statistics, Government of India)

D. Deficit Indicators

Deficit indicators give an indication of the financial health of a government. Table 2, on the other hand, presents a comparison of various deficit indicators over the past eleven fiscal years. Negative (-) sign in deficit indicators are an indication of a surplus in Table 2. Of these indicators, the most significant is revenue deficit which is measured as the difference between revenue receipts and expenditure. The aggregate difference between receipts and expenditure-including both revenue and capital- forms the fiscal deficit.

As fiscal deficits are incurred throughout the years, they accumulate and form up public debt of an economy. Problems occur when this public debt attains an unsustainable magnitude.

Primary deficit is calculated by subtracting interest payments from fiscal deficit and refers to the extent of debt utilized by the government for meeting current and revenue expenditure. As governments are limited in their ability to grow revenue in proportion with growth in expenditure, they often need to borrow to fund their fiscal deficit. An increasing government debt ratio indicates that public wealth is being

spend ineffectively by the government on unproductive operations.

All the four deficit indicators are at favorable levels as per the benchmarks specified in the Debt Management Strategy Document and Status Paper published by the government. The trend of the most significant indicators such as the Gross Fiscal Deficit and Revenue Deficit are easily lower than the pre-defined limits and dropped further in the previous year reinforcing the financial health of government debt. Moreover, the surplus of the primary and budgetary ratios also underscore the strength of financial health.

Table 2 Deficit Indicators India as percentage of GDP

Year	Gross Fiscal Deficits	Gross Primary Deficit	Revenue Deficit	Budgetary Deficit
2006-07	3.45	-0.19	1.94	0.63
2007-08	2.54	0.88	1.05	-0.01
2008-09	5.99	-2.57	4.50	-2.70
2009-10	6.46	-3.17	5.23	0.17
2010-11	4.80	-1.79	3.24	-0.18
2011-12	5.91	-2.78	4.52	-1.27
2012-13	4.93	-1.78	3.66	-0.02
2013-14	4.46	-1.14	3.17	0.10
2014-15	4.10	0.80	2.86	-0.28
2015-16	3.90	-0.71	2.80	-0.30
2016-17	3.50	-0.67	2.05	0.14

Source: Public Finance Statistics, Government of India

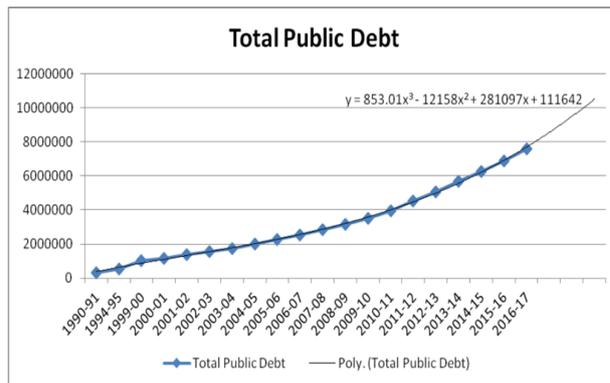


Figure 2 Public Debt (Source: Public Finance Statistics, Government of India)

C. Components of Internal Liabilities

The internal debt of the Indian government is mainly made up of fixed duration and fixed interest rate market borrowings, i.e. dated securities and treasury bills. While treasury bills are released to fulfill the short-term financial requirements of the government, dated securities are utilized to attract long-term finance for undertaking capital projects and financing the fiscal deficit. All marketable debt, however, be it treasury bills or dated securities, is released through auctions as specified in quarterly and bi-annual auction calendars. The process of issuing market loans itself incorporates considering the objective that the cost of debt raised is low and principles of risk management are adhered to.

Table 3: Internal Liabilities (RsCrores)

Year	Internal Debt				Other Liabilities				Total Internal Liabilities
	Market Loans	Ways and means from RBI	Special Securities	Total Internal Debt	Small Savings	Provident Fund	Miscellaneous	Other Liabilities Total	
1999-00	673520	40734	-	714254	29592	36814	181932	248338	962952
2000-01	758880	44818	-	803698	5462	41724	251712	298898	1102596
2006-07	1406275	138700	-	1544975	468010	71440	351455	890905	2435880
2007-08	1634549	165102	-	1799651	478290	75330	372123	925743	2725394
2008-09	1756777	263064	-	2019841	470141	83337	462813	1016291	3036132
2009-10	2073646	254693	-	2328339	521194	99433	446911	1067538	3395877
2010-11	2399830	267285	-	2667115	568614	111947	433459	1114020	3781135
2011-12	2822161	394461	14000	3230622	582011	122751	411780	1116542	4347164
2012-13	3293261	450411	20894	3764566	597737	133672	397328	1128737	4893303
2013-14	3758741	461132	20894	4240767	629936	143425	471472	1244833	5485600
2014-15	4238460	516546	20894	4775900	678844	153425	476399	1308668	6084568
2015-16	4711795	545527	20894	5278216	730869	163425	497021	1391315	6669531
2016-17	5312345	569782	20894	5903021	741890	176654	569189	1487733	7390754
CAGR	12.2	15.8	8.3	12.4	19.6	9.1	6.5	10.5	12.0
Average % Share	66.60	7.86	0.49	74.69	12.43	2.70	10.18	25.31	100.00

Source: Public Finance Statistics, Government of India

As seen above, Table 3 showcases the break-up of the diverse constituents of Internal Liabilities and the trend of growth they demonstrate. As visible in the table above, market loans are the most prominent component of Internal Debt and responsible for the majority of growth in the Indian's

government debt portfolio. Market loans form approximately 67 percent of total internal liabilities while internal debt- of which market loans is a part- forms around 75 percent. Both market loans and internal debt grow at an annual compounded rate greater than 12 percent. Conversely, the ways and means from RBI registers a drastic compounded annual growth at the rate of 16 percent. Within

the Other Liabilities head, Small Savings demonstrate the most phenomenal growth in the period studied, but other constituents do not show any significant increase during the same period.

This sizeable growth in both the different sections leads to Internal Liabilities also displaying a steady pace of growth as seen above. However, the growth trajectory of government debt stays largely under pre-defined limits.

D. Debt Sustainability Analysis

While conventional methods of assessing the sustainability of a country's public debt rely on analyzing the primary deficit and interest cost in contrast to the nominal GDP growth rate, there is no agreed level of public debt more than which is considered not sustainable. Often nations having a Debt-to-GDP ratio around or greater than 100 percent are considered to be able to sustain their public debt while others with much lower ratios are considered unsustainable. However, a rising Debt-to-GDP can be considered as progressing towards unsustainability and vice-versa. Within this paper, the indicator based DSA method based on identifying trends in crucial variables and ratios is employed to assess the Indian government debt sustainability.

Table 4: Debt Sustainability Indicators

Year	Nominal GDP Growth (%)	Average Interest Rate (%)	Difference (%)	Interest Payment (Rs Crores)	Revenue Receipts (Rs Crores)	IP/RR (%)
2009-10	15.1	6.1	9.0	213093	572881	37.2
2013-14	14.8	6.3	8.5	344862	907699	38.0
2014-15	10.8	6.6	4.2	402444	1101473	36.5
2015-16	9.9	6.6	3.3	441659	1195025	37.0
2016-17	11.0	6.9	4.1	480714	1374203	35.0

Source: Public Finance Statistics, Status Paper of Government Debt, Government of India

The Average Interest Cost (AIC) is a measure of the interest paid by the government for its debt and is computed by dividing the aggregate interest payments during a year with

the average debt stock. The average debt stock is obtained by calculating the arithmetic mean of the outstanding public debt at the start and end of the year.

A decreasing AIC fares well for the stability of public debt and the economy at large. Contrasting the Average Interest Cost with annual growth in the nominal GDP reiterates the sustainable nature of India's Central Government debt. The percent growth rate of the nominal GDP has easily exceeded the rate at which interest is paid on public debt suggesting that the growth in revenue received by the government surpasses the growth in interest payments and the additional revenue generated will act as a cushion in periods of need. This will result in an even lower IP/RR ratio in the upcoming years which will ease the pressure of strict fiscal discipline on the government and allow it to spend elsewhere in the economy. The Indian government's debt portfolio could also be vulnerable to rollover risk, interest rate risks, exchange rate risks and creditor-concentration risks which must be classified, scrutinized and dealt with.

In May 2016, under the leadership of Shri N.K. Singh- a former revenue and expenditure secretary a committee was formed to review the Fiscal Responsibility and Budget Management (FRBM) Act. After careful thought and deliberation, few vital recommendations were proposed by the committee:

1. Revoke the prevailing FRBM Act, 2003 and FRBM Act, 2004 and formulate a new Debt and Fiscal Responsibility (DFR) Act which treated debt as the main criteria for evaluating the effectiveness of fiscal policy.
2. Setting a judicious medium-term maximum limit for the Central government at 60 percent of the GDP to be targeted by 2023 which will be achieved by systematically reducing the fiscal and revenue deficits each year till 2023.
3. Specifying a trajectory for the fiscal deficit to GDP ratio: 3 percent in FY18-20; 2.8 percent in FY21; 2.6 percent in FY22 and 2.5 percent in FY23.

Table 5: Projections for Fiscal Deficit, Cost, ATM Borrowing and Repayment

Year	GDP Growth (%)	GFD/GDP (%)	Weighted Average Cost (%)	Average Time to Maturity (years)	Gross Borrowings (Rs Crores)	Repayments (Rs Crores)	Net Market Borrowings (Rs Crores)
2014-15	10.78	4.1	8.09	10.20	592000	138795	543205
2015-16	8.71	3.9	8.09	10.50	585000	144375	440625
2016-17	10.95	3.5	7.99	10.65	583045	174846	408199
2017-18	11.75	3.2	7.9	10.74	580000	156774	423226
2018-19	12.30	3.0	7.79	11.21	665076	243478	421598
2019-20	12.30	3.0	7.69	12.03	727672	250000	477672

Source: Public Finance Statistics, Status Paper of Government Debt, Government of India

Table 6: Debt Sustainability Indicators

Year	Market Debt/GDP (%)	Total Public Debt/GDP (%)	Interest Market Borrowings /GDP (%)	Interest on Gross Borrowings /GDP (%)
2015-16	31.89	41.74	2.58	3.20
2016-17	31.05	40.43	2.39	3.18
2017-18	30.50	39.20	2.29	3.10
2018-19	30.24	38.40	2.27	3.61
2019-20	30.06	36.25	2.28	3.80

Source: Public Finance Statistics, Status Paper of Government Debt, Government of India

As seen in Table 6, the debt sustainability indicators are progressing as per expectations outlined in the recommendations and the targets formed by the committee. Despite increased government spending in the recent years, the Debt-to-GDP ratio's trend will likely continue in the next couple of years. The Debt-to-GDP approximations till financial year 2019-20, as witnessed in the Medium Term Fiscal Policy Statement 2017-18, emphasize the central government's dedication to ensure an appropriate debt course. The Debt-to-GDP ratio has already started making significant progress towards the 40 percent target specified in the NK Singh Report. On similar lines, both the GFD-to-GDP ratio and RD-to-GDP ratio have demonstrated significant reduction towards the target levels specified in the report. The Indian government has also been diligently adhering to the objectives and guidelines specified in the Debt Management Strategy (DMS) to ensure that it borrows debt only at a low cost over the medium-to-long term from the market. All these factors combine to make a favorable debt portfolio for the central government of India.

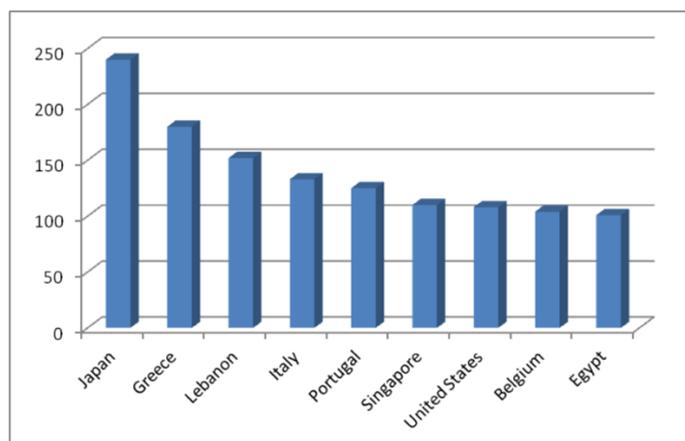


Figure 3: Countries with the Highest Public Debt/GDP 2017 (percentage)

Source: www.statistica.com/statistics

IV. CONCLUSION

Over the period of time considered in this study, the aggregate value of public debt held by the government of India showcased a steady growth of 13 percent compounded annually. Of this aggregate, internal liabilities in the form of debt owed to internal lenders comprised the main part accounting for as much as 95.55 percent of the total public

debt held by the government of India. This drastic increase in internal liabilities is a result of the conventional reliance on internal debt, most of which is raised using market loans. This high proportion of internal liabilities highly reduces the Indian government's reliance on foreign debt opting for which would otherwise have depreciated the Indian rupee due to the regular interest payments.

Internal debts form up around 75 percent of total internal liabilities while the share of market loans is around 67 percent of internal liabilities. Both of these accounts have witnessed a compounded annual growth at a rate little above approximately 12 percent. Furthermore, around 94 percent of total debt of the Indian government at the end of March 2017 was denominated in the Indian rupee reducing several risks associated with exchange rate fluctuations.

As a proportion of the GDP, external debt formed up a minor 2.7 percent as of March 2017. The government of India is now planning to finance a greater amount of the fiscal deficit using dated market securities so that it bears only the systematic risk of roll over. An added advantage that the government holds is that the majority of public debt in India is issued at fixed interest rates with only about 1.2 percent comprised of a floating rate as of March 2017. This shields the government's debt portfolio from modifications caused by interest rate fluctuations and provides certainty about future interest payments to policymakers while planning the budget.

The study finds that for fiscal sustainability to be achieved for the Indian government, the Debt/GDP ratio must be stabilized at around 40 percent using Debt Management Strategies since there is an inverse relationship between debt and economic growth beyond that point. The study also finds that India is treating its public debt appropriately and might achieve the 40 percent benchmark if it continues to make similar progress.

Both the debt sustainability indicators- Interest Payments to Revenue Receipts or Average Interest Cost- indicate that India's public debt is sustainable. In 2016-17, the Interest Payments to Revenue Receipts (IP/RR ratio) fell to 35 percent from approximately 52 percent in the early 2000s. Furthermore, in 2016-17 the Average Interest Cost (AIC) decreased to 6.9 percent from around 8.1 percent in the early 2000s. The reducing trend of both these indicators indicates that India is making positive progress in reducing the strain that interest payments put on the budget. Moreover, the fact that the AIC is stable and considerably lower than the growth rate of the nominal GDP signifies that India is in a

comfortable position regarding its public debt.

The Debt-to-GDP ratio has already started making significant progress towards the 40 percent target specified in the NK Singh Report. On similar lines, both the GFD-to-GDP ratio and RD-to-GDP ratio have demonstrated significant reduction towards the target levels specified in the report. The Indian government has also been diligently adhering to the objectives and guidelines specified in the Debt Management Strategy (DMS) to ensure that it borrows debt only at a low cost over the medium-to-long term from the market. It is also important for the government to stick to its plan: undertake steps to strengthen revenue collection process in light of GST and stimulate growth using supply-side policies to overcome the liquidity crunch in the economy and maintain fiscal discipline.

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