**Covid 19 Stimulus Package and Fiscal-Monetary Policy Linkages:
Empirical Evidence from India**

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Abstract

Against the backdrop of covid pandemic, there is a growing concern about the tendency of segregating the monetary and fiscal policy while assessing the financing of deficits on economic growth outcomes. This paper analyses the economic stimulus packages announced by the national government in the context of India and identify the plausible fiscal and monetary policy co-ordination. The shrinking fiscal space due to revenue uncertainties has led to a theoretical plausibility of a re-emergence of finite monetization of deficits in India. However, the empirical evidence confirms no direct monetization of deficit.

1. Introduction

There is a growing concern about the tendency of segregating the monetary and fiscal policy while assessing the macroeconomic impact of deficits on economic growth outcomes. Against the backdrop of covid19 pandemic, this paper attempts to analyse the economic stimulus packages in India and analyses the plausible linkages between the fiscal and monetary policy co-ordination. The significance of institutional linkages between fiscal and monetary authorities can be traced back to 'Unpleasant Monetary Arithmetic' (UMA) of Sargent and Wallace (1981). The 'Unpleasant Monetary Arithmetic' revealed that fiscal policymaker (where fiscal authority has the 'first mover advantage, and the monetary policy follows) dominates in the financing decision of deficits. If the bond financing of deficits becomes sooner or later unsustainable, the Central Bank has to step in and generate the monetary seigniorage revenues to monetize the deficits eventually. Under this fiscal dominance hypothesis, the attempts by the central bank to keep inflation low through inflation targeting cannot last and must ultimately give into higher inflation in the longer run. Under UMA, inflation today or inflation tomorrow is the only plausible macro policy option and therefore it is referred to as the 'unpleasant monetarist arithmetic'.

Does the macroeconomic scenario of UMA better for growth outcomes rather than central bank independence? The situation of central bank independence and inflation targeting with no fiscal policy dominance is referred to as 'Unpleasant Fiscal Arithmetic' (UFA). The Unpleasant Fiscal Arithmetic thus visualizes to reverse the order of adjustment, assumed in UMA, and to transfer the first mover advantage from fiscal agencies to the Central Bank authorities. By introducing strict fiscal policy rules, it obliges fiscal agencies to adjust to the anti-inflationary policy of the independent

Central Bank and thus *Unpleasant Monetary Arithmetic* turns into *Unpleasant Fiscal Arithmetic* (Winckler, et al., 1998).

A recent treatment of the Sargent-Wallace argument of fiscal-monetary policy linkages is the "fiscal theory of the price level", (FTPL), pioneered by Leeper (1991), Sims (1994), Woodford (1994) and Cochrane, J H (1998). This fiscalist literature argues that the price level is independent of monetary policy but dependent strictly on fiscal policy; price level indeterminacy problems can be solved by having the central bank peg the nominal interest rate at a level consistent with the central bank's desired inflation rate, rather than by controlling the growth rate of the (base) money supply (Sims, 1994 and Woodford, M , 1994).

These theoretical debates find relevance in contemporary macro policy transition in India from discretion to rules. The fiscal policy institutions have moved away from discretionary fiscal stance towards fiscal rules - the efficacy of fiscal authorities to keep the deficits within the numerical threshold level of deficits normalized to GDP (Andrea Schaechter et al., 2012). Recently, the monetary policy authorities have begun the policy rules to 'inflation targeting' and 'central bank independence' in India (for details, Urjit Patel Committee recommendations, Reserve Bank of India, 2014 and the 'new monetary framework', signed between Government of India and Reserve Bank of India, February 2015). This new dimension of the rule-based monetary policy stance in India has spurred from Taylor's rule (Taylor and Williams, 2010).

The contemporary macroeconomic policy transition from discretion to rules gives rise to one pertinent question: does monetary rule require a fiscal rule? Such monetary-fiscal linkages are treated in the literature (for instance, Sargent and Wallace, 1981) through analyzing the macroeconomic channels through which deficits affect monetary policy stance[i]. Unfortunately, over the years, the coordination between fiscal and monetary policy has been weakening and the policy debates have confined to just numeric values of deficits –the 'levels' of deficit to 3 percent of GDP- in attempting such linkages.

Apparently there has been a widening acceptance that numeric Fiscal Rules are associated with greater fiscal discipline (Alesina and Perotti, 1995).

Against the backdrop of covid 19 pandemic, the paper attempts to examine the economic stimulus packages and the scope of fiscal-monetary policy linkages to tackle the pandemic. The paper is organized into four sections. Section 2 analyses the fiscal and monetary stimulus packages announced in India. Section 3 deals with the new fiscal rules and plausible measurements of monetization of deficits. Section 4 provides an illustration of monetization of deficits. Section 5 concludes and suggests policy options.

2. Fiscal and Monetary Stimulus in India to tackle covid 19

Extraordinary times require extraordinary policy responses. In India, the lockdown was announced by invoking the National Disaster Management Act, 2005. The "lockdown strategy" per se is neither good nor bad to control the corona virus pandemic. Constitutionally, public health is a state subject. However, the Schedule 7 (entries 28 and 81) deal with inter-State migration and quarantine. The intergovernmental framework is thus crucial in dealing with the pandemic through policy co-ordination and fiscal transfers, especially when States are doing the heavy lifting to control the pandemic, despite their constrained fiscal space (Harikrishnan and Chakraborty, 2020). Ideally the fiscal decentralisation at the local level – the principle of subsidiarity – would have been the effective policy mechanism, meaning the decision making processes in crisis at a level of government closest to the people. But in India, the covid policy response has been highly centralized.

Against the backdrop of macroeconomic uncertainty in the time of covid19 pandemic, the Budget 2021-22, has provided a "significant" fiscal deficit number - which went upto 9.5 per cent in FY21. Simultaneously, commencing a fiscal consolidation path to execute an "excessive deficit procedure" in the Union Budget 2012-22 to bring down the excess deficit of 9.5 per cent of GDP in FY 21 to 4.5 per cent by FY26 became inevitable. The fiscal consolidation through expenditure compression rather than increased tax

buoyancy affects the quality of fiscal consolidation. From that perspective, allowing the fiscal deficit to rise above the threshold level of 3 per cent of GDP, without significant expenditure compression, is welcome. However, the anatomy of the determinants of borrowings - decomposed by revenue uncertainties, economic stimulus-related spending, the narrowing of denominator GDP, lowering of rates of interest etc - would be interesting to understand with precision which components has exactly contributed to the aggregate level of high deficits. The cleaning up of deficit incurred through off-budget liabilities through public sector undertakings is still a matter of concern. Such borrowings do not figure in the concept of fiscal deficit. However, Union Budget 2021-22 has not introduced the deficit termed as "Public Sector Borrowing Requirement (PSBR) integrating the borrowings incurred through public sector enterprises. The details of extra borrowings are kept in an Annexure in the Union budget document. The fiscal-monetary pandemic packages announced in India is given in Table 1.

Table 1: The Fiscal-Monetary Economic Pandemic Package in India

Components		Amount (in Crores)
Measures announced by RBI 1. Measures to infuse liquidity into the system 2. Reduced the interest rates		8,01,603
March 27th Package – including PMGKY (Prime Minister's Garib Kalyan Yojna, scheme for betterment of the poor) 1. Welfare spending for pensioners 2. Direct cash transfers for women 3. Food security 4. Tax concessions 5. **Financial security**		1,92,800
	Total	**9,94,03**
Post May 12th Announcements		
Tranche 1 – Liquidity infusion to sectors 1.Liquidity infusion to a.Medium and Small Enterprises (MSMEs),		5,94,550

b.Non-banking financial corporations (NBFCs), c. microfinance institutions (MFIs) and d.Power 'distribution companies' (DISCOM) 2.Employment Provident Fund /Tax reliefs		

Tranche 2 – For farmers and Migrants
 	
   1. **Concessional credit to farmers**
   2. **Affordable housing for migrants**
   3. **Emergency working capital for farmers**
   4. **Credit to street vendors –micro loans**
		3,10,000

Tranche 3 – Agriculture and Allied
   1. **Agriculture infrastructure and farm gate**
   2. **fisheries**
   3. **Animal husbandry**
   4. **Micro food enterprises**
		1,50,000

Tranche(s) 4 and 5
   1. **Increase in allocations for employment guarantee programme**
   2. **Funding for social and industrial infrastructure**
		48,100

	Total	**11,02,650**
	Total Package	**20,97,053**
Extension of PMGKY (via PM's announcement on June 30th) **To extend free ration (food grains and pulses) to poor , upto November 2020**		**90,000**

Source: Harikrishnan S (2020)

As the Reserve Bank of India puts it upfront, these are extraordinary times, and we need to respond with "whatever it takes" to deal with the pandemic. Over the past few days, our hope for systematically "flattening the curve" by containing the COVID-19 pandemic and a quick recovery to V-shaped or U-shaped growth is waning[ii]. Evidence is increasingly pointing towards the situation worsening to a dual crisis — a public health crisis and a macroeconomic crisis — like never before. The IMF projections substantiate that the drag of the pandemic on global growth could be to the extent of -3%. This is a major revision in the global growth rate over a very short period of time. The IMF highlighted that "the Great Lockdown is the worst economic disruption since Great Depression, and far worse than the global financial crisis," and its estimates suggest that *"the cumulative loss to global GDP over 2020 and 2021 from the effects of the COVID19 pandemic would be around $9 trillion, greater than the economies of Japan and Germany combined[iii]"*.

How have the central banks responded to this crisis? This is evidently uncharted territory for the central banks — how to deal with "life versus livelihood" issues. The pandemic economics of central banks is twofold. One is the focus on measures that relate to instantaneous economic "firefighting": for instance, how to ensure liquidity infusion into the system to stabilize the market reactions. The second is the long-term policy imperatives. As this crisis is of an unprecedented scale, it calls for unprecedented policy responses.

In India, the great lockdown was announced by the Prime Minister on March 25th, 2020. Subsequently, an economic package was announced in an iterative manner. To put things in perspective, in India, an agreement on a "new monetary framework" was signed between the Government of India and the RBI in February 2016, by which the single objective of our monetary policy is "price stability", based on inflation-targeting rules (Chakraborty and Harikrishnan S , 2020). This policy transition from the discretion of the RBI governor to a rule-based monetary policy has constrained the central bank to react with ease to the economic growth slowdown and other economic uncertainties. Yet another point to be considered is the central bank's independence — "operational independence" — after the constitution of a Monetary Policy Committee (MPC) in India. The role of the RBI governor in taking crucial monetary policy decisions has been taken over by the MPC, based on their voting. As per Section 45ZL of the Reserve Bank of India Act, 1934, the RBI shall publish, on the fourteenth day after every meeting of the MPC, the minutes of the proceedings of the meeting which shall include the resolution adopted in the meeting, the vote of each MPC member, and the decisions regarding the policy rates, whether to increase, decrease, or maintain the status quo rates.

Let us unpack the COVID policy response by the RBI. On May 22, 2020, on the basis of an urgent offline meeting of the MPC — before their regular meeting — the RBI responded to the COVID pandemic by reducing the repo rate under the liquidity adjustment facility (LAF) by 40 basis points, to 4.0%, with immediate effect[iv]. This was a further reduction from the 4.40% announced in March 2020 (the repo rate is the rate at which banks borrow funds from the Reserve Bank against eligible collateral).

The reverse repo rate is the rate at which banks park their surplus funds with the RBI under the liquidity adjustment facility (LAF). The reverse repo rate under the LAF stands reduced to 3.35% from 3.75%. These rates were introduced in June 2000. Since then, the repo rate has remained the reference rate for signaling the monetary policy stance. The Cash Reserve Ratio (CRR) is cut by 100 bps. The Marginal Standing Facility (MSF) rate (overnight borrowing facility from the central bank for further liquidity) and the Bank Rate stand reduced to 4.25% from 4.65%. The MPC also decided to continue with the "accommodative stance" and their decisions are taken with the objective of achieving the medium-term target for consumer price index (CPI) inflation of 4% within a band of +/- 2 %.

The RBI has responded to the COVID crisis by infusing liquidity into the system, to the tune of ₹5.66 lakh crore in May 2020 (up to May 20) from ₹4.75 lakh crore in April 2020. Within the liquidity package, 1,20,474 crore was injected through Open Market Operation (OMO) purchases and 87,891 crore through three Targeted Long-Term Repo Operation (TLTRO) auctions and one TLTRO 2.0 auction. In order to distribute liquidity more evenly across the yield curve, the Reserve Bank conducted one "operation twist" auction involving the simultaneous sale and purchase of government securities for 10,000 crore each on April 27, 2020.

In addition to infusing liquidity, the "regulatory easing" measures were announced to (i) promote credit flows to the retail sector and MSMEs and real estate developers; (ii) extend the regulatory benefits under the special liquidity facility for mutual funds (SLF-

MF) SLF-MF scheme to all banks; (iv) extension of the loan moratorium and support for working capital financing until the end of August; (v) credit support to the exporters and importers; (vi) extension of the tenor of the small business refinancing facilities; and (vii) increase the state's Ways and Means Advance (WMA) by 60% (compared to 30% earlier) to monetize the deficit. How effective these measures have been is anybody's guess. Even after bringing the rates (for borrowing) down to almost unprecedented levels, there was a huge increase in the funds parked by commercial banks in the RBI's reverse repo account — which went up from Rs 3 lakhs crores on March 27th to Rs 8.4 lakhs crores by the end of April (Harikrishnan S, 2020). With unemployment rates going through the roof, needless to say, there has been a phenomenal crash in demand. In such a scenario, focusing almost solely on liquidity measures serves only to plaster over the problem.

How this crisis will permanently shift the economic structures depends on the epidemiology of the virus and the nature and severity of the economic shocks. In this uncertain environment, how countries emerge from the effects of the pandemic depends largely on the effectiveness of the policies they design now. Monetary policy needs to play a proactive stabilizing role in this scenario. However, the announcements so far were mainly targeted at reducing the policy rates and infusion of liquidity. Pumping money into banks and NBFCs without adequate fiscal measures to boost demand runs the risk of increasing bad loans. In fact, CRISIL has already predicted a rise of banking sector NPAs to 11.5% by March of next year. As Joseph Stiglitz points out,

"today's excess liquidity may carry a high social cost (Chakraborty and Harikrishnan S , 2020). Beyond the usual fears about debt and inflation, there is also good reason to worry that the excess cash in banks will be funneled toward financial speculation." And he warns that this could lead to a "climate of increased (economic) uncertainty" and end up "discouraging both consumption and the investment needed to drive the recovery."

 This could lead us into a "liquidity trap" with a huge increase in the supply of money and not much for it by businesses and households. Whether we are headed in this direction, only time will tell, but it does make one wonder whether, without demand being stimulated, these policies are enough to create a ripple. The Fiscal Rules have taken the deficit financing rules as granted and deal with only numerical targets of deficits. However, excessive use of any financing mode of deficits has macroeconomic repercussions and cannot be tackled by focusing on the fiscal rules alone.

3. New Fiscal Rules and Measuring Monetised Deficits

Against the backdrop of macroeceonomic uncertainity whch is hard to measure, it is pertinent to discuss the appropriate concept of public deficit, and the optimal financing patterns of the public deficit with special emphasis on seigniorage. This section deals with the measurement issues related to the public deficit; and in turn interprets data on the trends and financing patterns of public deficits in India.

It is argued that unless a correct indicator of deficit is adopted, there is a possibility of miscalculation of pre-emption of resources by the government and thus the assessment of the fiscal policy and its impact on macro economy (Boskin, 1988). This evolution towards a series of *purpose-specific* deficit measures worldwide, as a prelude to Fiscal Rules , from the conventional approach of *single measure* of budget deficit

resulted in construction of primary deficit, fiscal deficit, monetized deficit and revenue deficit (for details, four pioneering surveys on the measurement of *purpose-specific* budgetary deficits by Blinder and Solow (1974), Heller, et al (1986), Blejer and Chu (1988) and Blejer and Cheasty (1993); and Pattnaik et al , 1999 for details on India-specific measurement issues of deficit).

As for the coverage, the ideal concept of deficit to study the macroeconomic impact is the *Public Sector Borrowing Requirement (PSBR)*. In other words, ideally, any measurement of the deficit should consider the deficit of the public sector as a whole instead of a sectoral deficit of different public sector entities. But problem lies in covering the public sector as a whole for a comprehensive measurement of public sector deficit because there are more exhaustive lists of government entities and there are intra-public sector transactions for which data is not readily available. Unless, into a public sector transactions are netted out, estimation of public sector deficit may suffer from the problem of double counting leading to the overestimation of the deficit. Thus, any measurement of government deficit should be defined by a public sector of given coverage, the intersectoral linkage within the public sector has to be delineated and a time horizon should be specified to assess the impact of fiscal deficit (Blejer and Cheasty: 1993).

Apart from the above-discussed Public Sector Borrowing Requirement (PSBR), various concepts of the deficit and their use as indicators to evaluate the budgetary performance of the government are recent phenomena in India. This evolution is also a result of the contemporaneous paradigm shift to a series of purpose-specific deficit measures worldwide, from the conventional approach of a single measure of the budget deficit.

The generation of purpose-specific deficits has the huge relevance of facilitating the analysis of the impacts of fiscal policy stance on macroeconomic activity. However,

the formulation of numerical bound and fiscal rules has shrunk the possibility of maturing such debates of macroeconomic impacts of fiscal stance, and the debates have confined to the numerical fiscal rules.

Traditionally (up to the late '80s), the concept of the *budget deficit* was in prominence in India and containing of the *budget deficit* was the prime objective of fiscal management. *Budget deficit* or the overall deficit of the central government is that part of the deficit that was covered by 91 days Treasury bills and withdrawal of cash balances with RBI. As the *budget deficit* is the borrowing from the central bank, it increases reserve money into the system and could fuel inflation and destabilize the monetary system. Thus, the emphasis was given to reduce the volume of the *budget deficit*. As RBI holds dated government securities, which also increases the volume of reserve money into the system, the *budget deficit* could only give a partial picture of the total increase in the reserve money. To capture the exact impact of deficits in the creation of reserve money, Chakraborty Committee (RBI: 1985) recommended the concept of monetised deficit. The monetized deficit is the increase of net RBI credit to the central government.[1]

The traditional measure of the *budget deficit* and its expanded form, the *monetised deficit*, excludes part of the resource gap of the government, which is financed through borrowing outside RBI. Thus, in recent years, the emphasis has been given to contain the *fiscal deficit*, which is the net borrowing requirement of the Government.   Conventional measurement of fiscal deficit is defined as the difference between total government receipts (non-debt creating) and the total government expenditure net of repayment of previously incurred debt. In India, the gross fiscal deficit is defined as the excess of the total of revenue expenditure, capital outlay and net lending over revenue receipts and non-debt-creating capital receipts including the proceeds from disinvestment. Thus,

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[1]RBI's holding of *ad hocs*, dated government securities, 91 days Treasury bills and government's currency liabilities constitute the net RBI credit central government, the measure of monetised deficit in India.

Gross Fiscal Deficit = Revenue Expenditure + Capital Outlay +Net Lending - (Revenue Receipts + Non-debt creating Capital Receipts).

Methodological limitations apart, it should be noted that in India, a reliable measure of total public sector deficit, the ideal measurement of deficit to capture the macroeconomic impacts, is not constructed due to paucity of data on intra-public sector transactions and the data at subnational (local) government. Therefore, the second best alternative measure of the deficit which can capture the macroeconomic impacts in India is the gross fiscal deficit.

Along with fiscal deficit, other important deficit indicators introduced to assess the budgetary performance of the government are *primary deficit* and *revenue deficit*. In India, the primary deficit is an indicator to assess the impact of current year's discretionary fiscal action on the indebtedness of the government. *Primary Deficit = Fiscal Deficit - Interest payments*.

Revenue deficit as a concept has received immense attention in recent years. Boskin (1988) argued that conventional deficit does not measure government dissavings, the latter being reflected in the revenue deficit. *Revenue deficit* is defined as the difference between the revenue earning of the government and revenue / current expenditure government. In the context of the structural adjustment programme, as a policy of demand management, reduction of both fiscal and primary deficit assumed paramount importance. Among the economists, there have been arguments for and against the adoption of these indicators to evaluate the budgetary performance of the government.

The trends in different concepts of deficits in India as a percent of GDP are given in Table 2. The trends in deficits revealed that budget deficit and monetized deficit was controlled intertemporally though the latter has shown a rise in the recent years. The revenue deficit is not yet completely phased out in India. The primary deficit and fiscal

deficit have moved in tandem and have shown a comparatively slight decline in the recent years, as percent of GDP. The fiscal deficit is financed through the issuance of bonds, seigniorage financing, financing through ad-hoc Treasury Bills and external financing. Over the years, Government of India resorted more to internal financing than to external financing, and market borrowing (bond financing of deficits) has emerged as the most important source of financing of fiscal deficit in India. The rationale behind the market borrowing by the Central Government was to create and widen the investor's base for government securities outside the captive market by attractive rates of interest and thereby to reduce government's dependence on monetisation of deficit.

The second institutional reform was imposing fiscal rules on public deficits in India. A fiscal rule imposes a long-lasting constraint on fiscal policy through numerical limits on budgetary aggregates (Kopits and Symansky, 1998). This implies that a domain is set for fiscal policy which cannot be frequently changed and a roadmap is provided by specifying a numerical target that limits a particular budgetary aggregate. The Fiscal Rules aim at correcting distorted incentives and containing pressures to overspend, in particular in good times, so as to ensure fiscal responsibility and debt sustainability (Andrea Schaechter, et al., 2012).

In India, the "golden rule" is invoked for the reduction of revenue deficit to zero or negative levels. A limit on fiscal deficits to 3-5 per cent of GDP was imposed with an emphatic rationale to avoid "crowding out" of private investment. However, many empirical evidences do not suggest 'direct' or 'financial' crowding out in the context of India (Chakraborty, 2002, 2006, 2007, 2012; Chakraborty and Chakraborty, 2008; Goyal, 2004; Vinod, Chakraborty and Karun, 2014) that deficits crowd out private corporate investment, and does not induce rise in interest rates or output gap either. What is missing in the design of numeric fiscal rules is the macroeconomic channel through which the deficits affect the output gap. It is not only the levels of deficit, but also the

financing pattern of deficits that creates macroeconomic consequences. This aspect was surpassed in the debates related to Fiscal Rules and budget management policies.

3.1: The new Fiscal Rules in India

The new Fiscal Responsibility and Budget Management (Amendment) is tabled in the Parliament today. The existing fiscal rules is amended to incorporate the revised threshold of deficit to GDP. This is the third time, FRBM is amended in India. As per the second amendment, the "revenue balance" was eliminated and clauses about "revenue balance" were incorporated in the Financial Bill to move away from the "golden (fiscal) rule" of zero revenue deficits. Though there was a debate regarding the choice of deficit – whether revenue deficit, fiscal deficit or primary deficit to be the "operational deficit parameter" in India - in the FRBM Committee Report with a dissent note from Arvind Subramanian favouring the primary deficit (fiscal deficit minus interest payments) , the Union Budget 2021-22 reiterated that fiscal deficit is still the operational concept of deficit in India. However, primary deficit is useful to understand the current fiscal stance without the legacy of past interest payments .

The enhancement of "budget transparency" with regard to deficit numbers, presented in 2021-22 Union Budget is welcome. The Food Corporation of India's borrowing from the National Small Savings Funds will be stopped to bring in budget transparency. When FY21 fiscal deficit has reached 9.5%, the government envisions to borrow another Rs 80,000 crore in the next two months. For FY22, the fiscal deficit is pegged at 6.8% of GDP. The gross market borrowing will be Rs 12 lakh crore which is 68.9 per cent of total borrowings. The other sources of financing like National Small Savings Fund constitutes around 26 per cent (Table 2).

In the Union Budget, creating fiscal space for continuous support to ongoing series of economic stimulus packages was a matter of concern. In the regime of revenue

uncertainties, the ambitious asset monetization programme announced in the Union Budget to generate revenue proceeds need a supporting regulatory framework. In the Union Budget 2021-22. the economic stimulus is announced not as a macroeconomic stimulus to revive the demand by providing huge cash transfers or Universal Basic Income (UBI). The concern was that if the people's propensity of save is greater than spending in the time of pandemic, dropping "helicopter money" or "UBI" in the hands of people cannot lead to required demand stimulation. The statistics shows that the precautionary savings by the private sector is on the rise in the time of pandemic. Instead of massive cash transfers, the Union Budget has provided "targeted" economic stimulus, especially to capital infrastructure and public health sector. The total size of the budget for FY21 has increased to Rs 34.50 lakh crore. In FY22, total expenditure is pegged at Rs 35 lakh crore.

The emphasis on capital infrastructure spending for economic revival by increasing the capital expenditure for FY2021-22 by 34.5% to Rs 5.5 lakh crore, is welcome. The estimates of capital expenditure for the FY21 has been increased to Rs 4.39 lakh crore, as against the budgeted Rs 4.12 lakh crore. However, as per cent of GDP, the capital expenditure to GDP is still below 2 per cent. The financing details of the other capital infrastructure projects announced in the budget through PPP models need further clarity.

Table 2. Levels of Deficits in India

	2019-20	2020-21	2020-21	2021-22
	Actuals	Budget Estimates	Revised Estimates	Budget Estimates
Fiscal Deficit	933651	796337	1848655	1506812
	(4.6)	(3.5)	(9.5)	(6.8)
Revenue	666545	609219	1455989	1140576

Deficit	(3.3)	(2.7)	(7.5)	(5.1)
Effective Revenue Deficit	480904	402719	1225613	921464
	(2.4)	(1.8)	(6.3)	(4.1)
Primary Deficit	321581	88134	1155755	697111
	(1.6)	(0.4)	(5.9)	(3.1)

Note: Figures in parentheses denote as percentage to GDP

Source: Government of India (2021), Union Budget 2021-22 document

Table 3. Sources of Financing Fiscal Deficit in India (Rs crores)

	2019-20		2020-21		2020-21		2021-22	
	Actual	% of Total	Budget Estimates	% of Total	Revised Estimates	% of Total	Budget Estimates	
Debt Deficit (Net)								
Market Borrowings (G-Sec + T Bills)	624089	66.84	535870	67.29	1273788	68.9	967708	
Securities against Small Savings	240000	25.71	240000	30.14	480574	26	391927	
State Provident Funds	11635	1.25	18000	2.26	18000	0.97	20000	
Other Receipts (Internal Debt and Public Account)	44273	4.74	50848	6.39	39129	2.12	54280	
External Debt	8682	0.93	4622	0.58	54522	2.95	1514	
Draw Down of Cash Balance	4971	0.53	(-)53003	(-)6.66	(-)17358	(-)0.94	71383	
Grand Total	**933651**	**100**	**796337**	**100**	**1848655**	**100**	**1506812**	

Source: Government of India (2021), Union Budget 2021-22 documents

4. Estimating the Monetization of Deficits

Sargent and Wallace (1981) and Bruno and Fischer (1990) noted that there might be both high and low inflation equilibrium when government finances the deficit through seigniorage. The dual equilibria – a reflection of Laffer curve – imply that an economy may be stuck in high inflation equilibrium when, with same fiscal deficit as percent of GDP, it could be at a lower inflation rate. The Seigniorage Laffer curve phenomenon depicts the non-linear relationship between revenue from money creation (μ_t) and the inflation rate (π_t). Easterly et al. (1994) noted that econometric estimation of the following quadratic equation statistically confirms the seigniorage Laffer curve.

$$S_{rev} = \alpha + \beta_1 \pi_t + \beta_2 \pi^2_t + v_t \tag{1}$$

where S_{rev} is seigniorage (fiscal and monetary in separate model specifications) and π_t is the rate of inflation. The fiscal seigniorage and monetary seigniorage Laffer curve is estimated through separate equations.

The monetary seigniorage is estimated using two data sets; high frequency data (monthly) for the period ex-post to global financial crisis and also using the annual data. However the high frequency data estimation of fiscal seigniorage is not possible as the data on public expenditure on interest payments is not available on monthly basis. One way to tackle this problem partially is to deduct the bond market operations data from the fiscal deficit. The analysis is thwarted here too as the high frequency data on bond financing of deficit is not available, though fiscal deficit could be available for the recent decade on monthly basis.

Using error correction mechanism, the plausibility of monetary seigniorage Laffer curve estimated using the high frequency data, for India is reported in Table 4. The estimation revealed that monetary seigniorage Laffer curve exists in the context of India, ex-post to global financial crisis period. The squared coefficient is negative and significant, which depicted that the seigniorage revenue creation initially rises and

eventually falls with the rise in the rate of inflation, the estimates (π and Π^2) are significant (Table 4).

Table 4: Monetization of Deficits :
ECM Illustrative Estimates

	Coefficient	T
A	-0.094	-0.653 [0.516]
Π	1.078	1.638 [0.108]
Π²	-0.095*	-1.739 [0.088]
Ecm	-0.645***	-11.545 [0.000]
R-squared	0.435	

Notes: figures in the parentheses denote probability
Source: (Basic data), RBI (various years)

Theoretically, the coefficient of Π2 provides a seigniorage-maximising inflation rate, which provides the plausible inflation rate where the seigniorage Laffer curve peaks. This model can be extended by incorporating the relevant control variables and the policy dummy, these results are partial and illustrative.

The seigniorage estimates also showed the squared term is significant and negative. These preliminary estimates have policy implications on the current mode of financing public deficits in India, with bond financing as the predominant method. It is interesting to recall heterodox economists' emphasis to seigniorage finance of deficits for public deficits, as they believe it is in technical terms "free lunch", if the economy has not attained the full employment levels (for details, Rakshit, 2005, 2010). If we take recourse to the original arguments for monetary-fiscal linkages, bond financing of

deficits can be flawed even under a fiscal dominance regime. Does bond financing - the dominant source of financing the deficit in India - has an empirical upper bound? If so, does it imply when the rate of interest on government bonds exceed the growth rate of the economy, we need to monetize eventually the deficits through generating seigniorage? The fiscal stance, however, would not be unsustainable soon in India, as the present structure of deficit financing has a negligible share of external financing of debt, and the composition of debt is more of long term maturities. Still, the assumption that the monetary regime has no influence on the conduct of fiscal policy need a revisit, especially when the economic growth rate (g) is plummeting and the rates of interest (r) have shown no signs for a significant downward trend in recent years in India. This concern is not because of any straightjacket unsustainability condition of r>g impending for India, but the monetary policy stance contains relevance for the term structure of interest rates (the relationship between short and long-term rates of interest) and has a catalytic role in promoting economic growth.

6. Conclusion

Against the backdrop of covid pandemic, monetization of deficits is to take into consideration the institutional and policy changes which has direct bearing on government's net monetary finance requirement. Despite the concerted policy changes undertaken by the Government of India and the Central Bank to contain the monetized deficit in India, the monetary seigniorage is not yet on the decline. Though the net RBI credit to the government – the monetized deficit - has been controlled through fiscal-monetary policy co-ordination, the net foreign exchange reserve is on the rise. Further, the shift in the financing pattern of deficits from seigniorage to bond financing which has occurred prior to the deregulation of interest rate regime in India has implications for the fiscal seigniorage. In the context of lack of fiscal space from revenue uncertainties, a relook into the new fiscal rules has become imminent and the financing pattern of fiscal deficit. Our illustrative estimates suggested a possibility of a fiscal

seigniorage in India. These estimations are partial and illustrative. The lack of fiscal space can affect the expenditure requirements in the time of pandemic and in turn it would affect the sustained economic recovery. The policy implication of our analysis is to explore the seigniorage financing in finite period to finance the spurt in spending due to covid pandemic, with clear excessive deficit procedure to bring the deficit to prior equilibrium in the long run.

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