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Inflation, Monetary Policy and Monetary Aggregates

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Abstract

Taxonomically speaking, the received theories of the macroeconomy may be said to comprise monetarism, structuralism, Marxism, the post-Keynesian view and the New Consensus Macroeconomics (NCM). However, in the last few decades, the mainstream view has been converging on the NCM, representing a grafting of essentially Keynesian ideas on a framework of rational expectations. Associated with this consensus has been a steady de-emphasis on the role of monetary aggregates in the framing of monetary policy. This paper is devoted to an examination of the role of monetary aggregates in each of the macroeconomic theories listed above. In particular, it contests the prevailing mainstream policy viewpoint (heavily influenced by the NCM) that monetary aggregates have no explanatory power for inflation beyond that contained in the output gap. On the contrary, the empirical fact that several monetary shocks originate on the supply side, coupled with the strong possibility of monetary shocks affecting output through relative price changes, make out a strong case for the inclusion of monetary aggregates at least as a Second Pillar of monetary policy (in the manner currently done at the European Central Bank). A monetary policy calibrated without reference to monetary aggregates is like Hamlet without the Prince of Denmark.

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I. Introduction

Inflation and unemployment, and the interrelationship between the two, have been the prime preoccupation of macroeconomists throughout the long history of the subject. However, this focus has strengthened after the Great Depression and the writings of Keynes, Pigou, Friedman and others on the relative efficacy of monetary policy vis-à-vis fiscal policy in achieving a balance between these twin objectives. In many countries, the objective of growth has replaced unemployment in the policymakers' preference function (though, of course, the two are very closely correlated), and "growth with (price) stability" has been the popular expression of such a preference function.

In the two decades prior to the global financial crisis, the bulk of the macroeconomics profession seems to have converged on a theoretical consensus, which is usually termed as the *new neoclassical synthesis* or the *new consensus macroeconomics*. We use the latter term and its abbreviation NCM to denote this synthesis in this paper. The theoretical consensus had its reflection in a convergence of policy viewpoints on two cardinal tenets, viz.

i. Monetary policy should be fully committed to a single objective viz. commodity price stabilisation (inflation targeting or IT for short)
ii. A short-term interest should be the main instrument of monetary policy

In addition, parallel to these two cardinal principles, there were a host of other (often implicit) areas of agreement, of which four deserve special mention, viz.

i. Fiscal policy is largely ineffective in controlling inflation, which should be the exclusive concern of the monetary authority
ii. Asset price stabilisation is full of risks and the monetary authorities should practice a "hands-off" policy in asset markets (Jackson Hole consensus)
iii. Money is endogenous to the system, i.e., it is determined (except for some noise or shocks) in the money market once the interest rate is fixed by the monetary authorities.
iv. Money has no independent impact on the macro-economy apart from its impact through the interest rate.

To put these issues in perspective, it might be a good idea to review the significant determinants of inflation according to the four prominent theories of the macroeconomy viz. monetarism, the NCM, structuralism and the post-Keynesian view, along with their monetary policy implications. In particular, **we examine the role of monetary aggregates in the determination of inflation, which has important implications for monetary policy.**

II. Alternative Theories of Inflation: The Monetarist P* Model

The P* model is a simple variant of the classical quantity theory and uses as a starting point the famous equation

$$MV = PY \tag{1}$$

where P is the aggregate price level, Y is real GDP, V is the velocity of money circulation and M is a measure of money supply.

Let Y* be the potential level of real GDP[1] and V* the equilibrium velocity. Further, M is usually taken as a measure of *broad* money supply (M3 in India). We can now define an equilibrium level of P (say P*) as a function of Y*, V* and M (t).

$$P^*(t) = \frac{M(t)V^*}{Y^*} \tag{2}$$

The money supply M (t) is assumed exogenous to the model (2) and $P^*(t)$ represents a moving equilibrium since it changes as M (t) evolves. M (t) is governed by the money multiplier equation

$$M(t) = kH(t) \tag{3}$$

where k is the money multiplier (assumed constant in the short run), and H is high-power money[2].

H is defined by

$$H = (eFR + NDA) \tag{4}$$

In (4) $FR, e\ and\ NDA$ respectively represent the foreign reserves, the exchange rate (units of domestic currency per one unit of foreign currency), and net domestic assets of the central bank.[3]

Converting equations (1) and (2) into logarithmic form and letting lower case letters denote the logarithms of the corresponding quantities, we get

$$p(t) + y(t) = m(t) + v(t) \tag{1'}$$
$$p^* + y^* = m(t) + v^* \tag{2'}$$

Taking the difference of (1') and (2'), we get

$$(p(t) - p^*) = (v(t) - v^*) - (y(t) - y^*) \tag{5}$$

It is important to bear in mind that the most natural use of the model is to predict *short-term* inflation[4]. The left-hand side of (5) represents the inflation pressure at any given point of time. If $p(t) > p^*$ i.e. the actual price exceeds the equilibrium level, then prices are expected to fall continuously till the equilibrium price is attained. This will happen from equation (5) if the velocity gap $(v(t) - v^*)$ is positive and/or the output gap $(y(t) - y^*)$ is negative. The opposite process operates when $p(t) < p^*$. This leads to the following model for changes in inflation level $\Delta\pi(t)$ (see Hallman et al. (1991), Nachane and Lakshmi (2002) etc.).

$$\Delta\pi(t) = \alpha_0 + \alpha_1\big(v(t-1) - v^*(t-1)\big) + \alpha_2\big(y(t-1) - y^*(t-1)\big) + \textstyle\sum_{j=1}^{q} \Delta\pi(t-j) + \epsilon(t) \quad \ldots(6)$$

with $\alpha_1 < 0\ and\ \alpha_2 > 0$

The above model embeds both the monetarist and the Phillips curve views of inflation. If in (6), $\alpha_1 = 0$, the acceleration in inflation depends only on the output gap $\big(y(t-1) - y^*(t-1)\big)$ and the model can be taken to represent the Phillips curve. In this so-called *output-gap model.* If the actual output $y(t-1)$ is greater than its potential value $y^*(t-1)$, then inflation accelerates, and inflation decelerates if the output gap is negative. On the other hand, if both these parameters are non-zero and $\alpha_1 + \alpha_2 = 0$ then the model (6) reduces to

$$\Delta\pi(t) = \alpha_0 + \alpha_1\{v(t-1) - v^*(t-1) - y(t-1) + y^*(t-1)\} + \sum_{j=1}^{q} \Delta\pi(t-j) + \epsilon(t)$$

Or

$$\Delta\pi(t) = \alpha_0 + \alpha_1\{p(t-1) - m(t-1) - v^*(t-1) + y^*(t-1)\} + \sum_{j=1}^{q} \Delta\pi(t-j) + \epsilon(t) \quad \dots (7)$$

This may be considered as a monetarist model showing that increases in money supply $m(t-1)$ lead to an acceleration of inflation since $\alpha_1 < 0$

If further $\alpha_1 = \alpha_2 = 0$ then the model only carries a purely inertial effect of inflation, while if both these parameters are non-zero, then the model comes closer in spirit to the NCM model (discussed below).

While the model seems overly simple, it can be quite useful as a rough and ready guide for forecasting inflation in the *short run*. It can be used for monetary policy purposes if the LM curve shows a stable *short-run* relationship between the policy interest rate (repo rate in India) and a measure of the money supply.

III. The New Consensus Macroeconomic (NCM) Model

The NCM theory is currently the framework, which possibly commands the widest acceptance among macroeconomists and policymakers. It essentially represents a somewhat eclectic compromise between the new classical school (Lucas (1972), Sargent (1980) etc.) and the neo-Keynesian view (Mankiw (2000), Phelps (1967), Taylor (2004) etc.) -- a compromise based on securing the micro-foundations of Keynesian sticky prices and wages with optimisation under rational expectations. **Even though the NCM is often presented as a single body of thought, it embraces a broad spectrum of views ranging from those with a strong belief in the real business cycle theory and strictly rational expectations at one extreme to those who tend to place greater emphasis on New Keynesian type of market rigidities.** But most of its adherents claim allegiance to three key precepts –the Rational Expectations Hypothesis (REH), the Efficient Markets Hypothesis (EMH)) and a monetary policy rule (a Taylor-type rule).

The essentials of the NCM approach may be visualized from the closed-economy model put forth by Clarida et al (1999, p.1665 and p.1695) and extended to the open economy case by Angeriz and Arestis (2007) 5. We focus on the closed economy version which is described in terms of the following basic three equations system:

$$[y(t) - y^*(t)] = \lambda[y(t-1) - y^*(t-1)] + E_t[y(t+1) - y^*(t+1)] - \gamma r(t) + u_1(t) \quad (8)$$

$$\pi(t) = \beta[E_t(\pi(t+1))] + \alpha[y(t) - y^*(t)] + \eta[\pi(t-1) - \pi^*] + u_2(t) \quad (9)$$

$$i(t) = r(t) + \theta[\pi(t-1) - \pi^*] + \lambda[y(t-1) - y^*(t-1)] + \rho E_t\pi(t+1) + u_3(t) \quad (10)$$

In the above system, y(t) is the real GDP at time t, $y^*(t)$ is potential real GDP at time t, π(t) denotes inflation, i(t) and r(t) the nominal and equilibrium real interest rates, π^* the target inflation rate, $u_i(t), i = 1,2,3$ are stochastic shocks at time t, *and* $E_t(.)$ denotes expectations of a variable formed at time t.

Equation (8) is the aggregate demand equation (IS curve) and postulates that the output gap (actual GDP minus potential GDP) depends on (i) its own past value (ii) its expected future value and (iii) the real rate of interest. This equation derives from the inter-temporal optimisation of lifetime expected utility subject to a budget constraint (see Blanchard and Fisher (1989)).

Next, we have the vertical Phillips curve (9) with inflation determined by (i) the current output gap and (ii) future *expected* inflation. Equation (10) is a monetary policy rule specifying the *nominal* interest rate as a function of (i) expected inflation (ii) deviation of past inflation from the "inflation target" (iii) past output gap, and (iv) the *equilibrium real rate of interest*. **This is not a behavioural equation.**

While the above reduced-form model does capture several predominant features of the NCM, most practitioners in the NCM tradition would not adopt this model for actual policy purposes, as from their point of view, it lacked credible micro-foundations. They would prefer instead to work with a full-scale DSGE (dynamic stochastic general equilibrium) formulation.

From the viewpoint of the determinants of inflation, equation (9) in the above model is crucial. It brings out the key role played by inflation expectations of the future price level. The output gap and an inertial effect (past inflation memory) are the other influencing factors. **Of course, some analysts think that making inflation depend upon inflation expectations is almost like 'pulling oneself up through one's own bootstraps'.**

IV. Three Heterodox Views of Inflation

There are three important heterodox alternatives to the mainstream monetarist and NCM views of inflation: the Marxists, the structuralists, and the post-Keynesians. According to the Marxist and structuralist views, the source of inflation is a conflict over the distribution of national product between labour and capital.[6]

The Marxist model posits that inflation arises from a rise in exogenous money supply directly affecting aggregate effective demand (see Rowthorn (1977)). In this view, inflation increases the share of profits by eroding the real purchasing power of workers, the latter being unable to exercise sufficient leeway with the capitalist governments to secure full wage indexation. In the Marxist view, the so-called non-accelerating inflation rate of unemployment (NAIRU) is not a full-employment rate (as in Friedman (1968) and Phelps (1967)) but simply reflects the effects of excess labour demand on the bargaining power of workers (see Bowles (1985) and Pollin (1999)).

The structuralist view originated in Latin America with the seminal contributions of Noyola (1956)[7] and Sunkel (1958). It mainly takes its context as a typical LDC faced with a balance of payments constraint and heavily dependent on capital imports and imports of primary commodities like oil, metals and minerals from the rest of the world. The skewed pattern of land ownership is also a typical feature of the economy.

In the structuralist approach, inflation is an endemic feature emanating from a structural distributive conflict between the big landowning class and the mass of urban industrial workers and landless agricultural workers. Terms of trade shocks provide a trigger to the inflation process, which then perpetuates itself due to four factors (i) the unfavourable terms of trade raise the price of imports (ii) food prices rise because of the inelasticity of food supply arising from unequal land holdings (Cardoso (1981))(iii) foreign exchange constraints in the face of essential capital imports force a devaluation of the domestic currency and (iv) finally, in the face of unabated inflation, governments are compelled to initiate indexation and cash-support programs to quell labour unrest, which induces a hysteresis in the inflationary process (see Simonsen (1970), Pazos (1972), Lopes (1986)[8]).

An exact definition of post-Keynesianism may not be readily forthcoming – this being a matter of considerable debate (see e.g. Hamouda and Harcourt (1988), Davidson (2003-04), Kerr (2005) etc.). Gerrard's (1995) assessment of post-Keynesianism as a "diverse and continuing research effort, characterised at times more by its fragmentation and internal division than by any unity of purpose" (quoted in McDaniel (2012), p. 43) seems quite to the point, and taking this cue, we do not go into a detailed discussion of each separate strand of post-Keynesianism, but focus on the common themes shared by the group as a whole, especially as they bear on the phenomenon of inflation.

The post-Keynesian explanation of inflation is centred on the following six principles:

i. Unemployment is determined in the product market, not the labour market and is caused by the deficiency of effective demand
ii. Involuntary unemployment is not the result of labour market imperfections
iii. Herd behaviour of investors is characteristic of a modern capitalist economy
iv. Money is not exogenously fixed by the monetary authorities but is endogenously arising from the demand for credit by investors
v. Fiscal policy can be effective and *Ricardian equivalence* may not be valid
vi. Distributive conflicts between workers, capitalists, and/or rentiers are the critical determinant of inflation (see Kalecki (1943, 1954), Kaldor (1955-56), Robinson (1972))

There are several post-Keynesian models aimed at encapsulating the above features (see e.g. Hein (2014), Palley (1996), Lavoie (2014) etc.). These models share several common features with the structuralist models, but the focus is more on the distributive conflict between capitalists and workers. The agricultural sector is not explicitly considered as in the structuralist model, though this extension would not be challenging to incorporate. Thus, the post-Keynesian model is essentially a one-sector two-class model.

V. Money Supply and Inflation

A. The NCM View: A Model of Inflation without Monetary Aggregates

We have so far discussed the main theoretical approaches to inflation. Let us see precisely the role of money supply and liquidity[9] (as determinants of inflation) in each of these approaches. The post-Keynesians view money as endogenous, merely reacting to developments in the real economy. Then, it ceases to be a causal factor in inflation. Similarly, the Marxists and structuralists, while they do regard money as exogenous, assign the prime causal role to real supply-side factors (such as wages, bargaining power, distributive conflicts, terms of trade shocks etc.), in determining inflation, with money supply simply underwriting the developments on the real side.

As is well-known, the monetarists view money as the primary or even the only cause of inflation. However, in some of the less strict versions, it is conceded that this role (of money supply) may be mainly long-run, and in the short-run, the effects of money supply may be split between real output and inflation.

It is doubtful whether monetarism, structuralism or post-Keynesianism in their pristine form command much allegiance from the bulk of academics, who have now thrown their weight increasingly behind the NCM viewpoint. According to the NCM, the rate of interest is the key instrument for monetary policy. However, its value should be determined by the monetary authorities via some rule of the type (10) above, in which the *nominal* interest rate (usually the repo rate or in some countries the bank rate) is some function of (i) expected inflation (ii) deviation of past inflation from the "inflation target" (ii) past output gap and the *equilibrium real rate of interest*.

While the NCM does claim adherence of an academic majority, policymakers have to be more circumspect and adopt a more nuanced view, taking into account a variety of theoretical viewpoints. Of course, no central bank to date has adopted a monetary policy rule *in toto*. However, given that the MPCs comprise largely of academics in most countries, the NCM theory supplies the guideposts for monetary policy. Hence the output gap and the deviation of actual inflation from its target value (set by the government or the central bank) figure prominently in MCP deliberations, but other considerations are also raised.

The role of wages which as we have seen figures prominently in the structuralist and post-Keynesian views is often prominent in MPC deliberations, especially in EMEs (see Agénor and Hoffmaister (1997), Mohanty and Klau (2007) etc.). The exchange rate, while not explicitly figuring in the monetary policy rule (10) of the NCM, is an important determinant of inflation in this model (see (9)). Hence actual policy has to keep an active lookout on exchange rate volatility and balance of payments equilibria. Relative prices were earlier regarded as irrelevant for determining the general level of prices and inflation. However, there is increasing recognition of relative price changes in EMEs where such changes usually appear via frequent changes in administrative prices especially of food, oil, electricity, coal, fertilisers etc. Such relative price changes, especially if they are large, can act as major supply shocks and affect both output and prices (see Fischer (1981) and Ball and Mankiw (1995)).

However, money supply per se rarely figures as an explicit concern in MPC meetings (with the notable exception of the European Central Bank), nor does the budget deficit. Both are a direct outcome of an implicit allegiance to the NCM. In the NCM framework, once the nominal interest rate is fixed, the money supply responds passively settling at a level determined by the LM curve (see e,g, Patra and Kapur (2010)). The very fact that the LM curve nowhere figures in the NCM model indicates the secondary role assigned to money supply. As per the prevailing thinking on monetary policy (almost everywhere), policy operations are conducted by setting the interest rate. Around the year 2000, the FRB in the U.S. stopped publishing money-growth targets in their policy announcements. So far as the ECB is concerned Pillar 2 comprises a detailed analysis of monetary and credit developments, and an attempt is made to exploit the long-run link between money and prices but only to serve as a cross-check of the policy implications from the economic analysis of Pillar 1. In India, no explicit targets are set for any measure of money supply or liquidity, but liquidity management is an important adjunct to interest rate policy. Thus, one may say that the role of monetary aggregates is now usually secondary in monetary policy determination.

While technically, a link is established between interest and output, it is still a bit of a black box. Which interest rate is relevant? There was a strong difference between Hawtrey and Keynes, with the former emphasising short term interest rate and the latter the long term. Empirical studies are inconclusive. Leaving aside the issue, let us examine the question as to whether there is a role for monetary aggregates in explaining/predicting inflation beyond that accounted for by the interest rate.

The theoretical explanation of why monetary aggregates play an insignificant role in the NCM is provided by Woodford (2007). Solving the NCM model comprising equations (8) to (13) above, he demonstrates how inflation is determined in this model by the inflation target of the central bank coupled with the expected future discrepancies between the natural rate of interest and an intercept adjustment of the central bank's reaction function (a term capturing the shift in the central bank's views regarding the economy's equilibrium real rate of interest) (see Woodford (2006, p.8-10). He, therefore, maintains that the model implies a determinate inflation rate and a determinate path for the price level (once initial prices are given). But what this shows is that within the NCM model, there is no indeterminacy regarding inflation and the price level. From this, one cannot conclude that monetary aggregates do not matter in reality without reference to empirical data. **It is highly conceivable that a model including monetary aggregates in addition to the NCM equations could describe empirical reality more accurately than a model without these aggregates because the latter model failed to capture some vital aspect of the effects of these aggregates on the IS curve.**

There are several reasons why monetary aggregates could still have some influence on the economy and we briefly discuss these below.

B. The Neutrality of Money

If, as maintained, in the NCM, one can have a perfectly consistent theoretical explanation of inflation without reference to money supply, does this mean that the NCM and Friedman's monetarism are irreconcilable? As shown convincingly by Nelson (2003), the NCM (at least the faction within it that is closer to the real business cycle school) is consistent with the quantity theory of money. This point is affirmed by several other proponents of the NCM view such as Woodford (2007), Taylor (1992), Hubbard (2002) etc. This *neutrality of money* proposition essentially precludes the possibility that money supply shocks will have *real* effects through relative price changes. However, the neutrality of money essentially arises from the assumption made in both theories that the demand and supply of goods and services depend only on the relative prices structure rather than the absolute price level or aggregate demand is independent of the level of money supply.

But attempts at empirical testing of the neutrality proposition such as those of Bils and Klenow (2002), Balke and Wynne (2007), Anzuini et al. (2013), Pasten et al. (2018) show that monetary policy shocks do affect relative prices and thereby aggregate demand.

Several alternative theoretical explanations can be advanced for the perceived non-neutrality of monetary policy shocks. One long-standing explanation is the *nominal misperceptions model* of Lucas (1972), in which firms and consumers cannot distinguish between aggregate and relative price shocks. Hercowitz (1982) demonstrates how, under this assumption, monetary policy shocks could cause a relative price distortion with some prices changing more than others (but all prices moving in the same direction).

The second group of models in this genre are the *sticky prices models* of Dixit-Stiglitz (1977) and Calvo (1983). Both types of price-setting behaviour can lead to *strategic complementarities or real price rigidities.* The Dixit- Stiglitz model of monopolistic competition with consumer preference for product variety can produce *quasi kinked demand curves,* while the Calvo model postulates a staggered price-setting framework. In combination with firm-specific factors of production, such models are capable of generating relative price dispersion and hence output responses to money supply shocks.

Similar relative price dispersion and output response can be found in models of incomplete information (see Sims (2003), Woodford (2001), Mankiw and Reis (2002) etc.) wherein information collection and processing is costly, and hence some firms find it optimal to proceed based on incomplete information. Other sources of real price rigidities suggested in the literature are (i) countercyclical behaviour of the mark-up of firms (see Pindyck et al. (1998), Rotemberg and Woodford (1991), Hall (1991) etc.) (ii) *thick market externalities* under which purchasing inputs and selling products is easier in booms as compared to slumps (see Diamond (1982), Romer (1993), Akerlof and Yellen (1987) etc.) and (iii) credit market imperfections (Stiglitz and Greenwald (2003), Bernanke and Gertler (1989) etc.[10]

The upshot of the above discussion is that a monetary aggregate measure has a legitimate claim as an additional argument in the IS equation (8).

C. The Real Balance Effect

One of the oldest arguments in the relationship between monetary policy and aggregate demand revolves around the *real balance effect* viz. the impact on consumption and aggregate demand due to an increment in real financial wealth occurring with an increase in the monetary base. However, this argument, though theoretically sound, lacks empirical support. Most empirical studies (see Ireland (2001), Woodford (2003, Chapter 2) etc.) deny any quantitative significance to this effect. Friedman (1972) had categorically stated that "I never have believed that the real balance effect is of much empirical significance". As Nelson (2003) emphasises, the important role of monetary aggregates arises not from wealth effects (i.e., real balance effects) but from substitution effects between money and other assets.

D. Monetary Aggregates and Bank Loan Supply

One great advantage claimed for monetary policy being steered by interest rates rather than monetary targets is that in the former framework *money demand shocks* are automatically accommodated. But even within such a framework, monetary aggregates could still claim some relevance (as monetary policy indicators) if *not all monetary shocks are, in fact, demand shocks.* Monetary shocks originating on the supply side can be important in economies (such as India) where the bulk of money supply is constituted of commercial bank liabilities. Bank behaviour with regard to their liabilities can be volatile depending on their capital base, their risk appetite, their desired net interest margins as well as the state of the macroeconomy. An alteration in these parameters can act as a money supply shock, which can affect personal consumption, business investment and more generally shift the IS curve (8) (see Goodhart (2007)). Under a curtailment of loan supply, companies may fail to cover their credit obligations leading to default and aborting investment plans (see Dell'Ariccia et al. (2005)). Additionally, in their panel data study, Nier and Zicchino (2006) indicate the empirical possibility that bank loan supply can be pro-cyclical and thereby aggravate macroeconomic fluctuations.

The underplaying of monetary aggregates in monetary policy (or their total disappearance as in the case of the FRB) means a certain lack of focus on banks' balance sheets. In the presence of the LM curve, the liabilities side of the banks' balance sheets is immediately brought into the picture. From this, it becomes easier for the central bank to draw direct inferences about bank credit and bank capital. The issue becomes critical in countries (e.g., India) where most banks are publicly owned, NPAs are high and the government has to frequently resort to bank recapitalisation (see Friedman (2003)). An extensive literature has indicated a strong link between bank capital levels and bank loan supply (see van den Heuvel (2002), Gambacorta and Mistrulli (2004), Berger et al. (2016), Kick et al. (2020) etc.). **In the final analysis, bank borrowers are influenced both by the availability and cost of credit. The process of money creation is the process of credit creation. This is obvious when the central bank monetises credit to the government.**

E. Monetary Base Expansion and the ZLB

Monetary base expansion can be the only policy instrument left to the monetary authority in exceptional circumstances. During the recent global financial crisis, interest rates approached the zero lower bound in several countries. By December 2008, the federal funds rate in the U.S. had attained the zero lower bound (ZLB) being in the range of 0 to 0.25%. But the financial crisis was in full swing, with the real sector now contracting and unemployment climbing up. With the scope for further interest rate reductions at an end, unconventional monetary policy measures had to be tried, directly targeting the cost and availability of external finance to banks, households and non-financial companies (see Bernanke (2009), Eggerston & Woodford (2004) etc.). This can be done by influencing real interest rates (see Smaghi (2009)), and one way to do this is by operating on market expectations – the so-called *forward guidance* under which the central bank can resort to a commitment to maintain the policy rate at the ZLB for a sufficiently long period (see Dotsey (2016)). But such forward guidance cannot be credible unless backed by a large portfolio of securities at the central bank. Thus, the central bank needs to expand its balance sheet by purchasing government and private securities from the market – a process commonly dubbed as quantitative easing (QE). **Though money supply may be partly endogenous because the money multiplier depends on borrowers' propensity, the central bank can largely have its own way because of its capacity to create reserve money. 'Quantitative easing' emphasises the role of money supply in the economy. The need for it can arise under various circumstances.**

F. Liquidity Channel of Monetary Policy

In recent years, especially after the initiation of QE in the U.S. and several other countries, there has been considerable discussion about a new channel of monetary policy viz. the liquidity channel (see Joyce and Spaltro (2014), Rodnyansky and Darmouni (2017), Chakraborty et al. (2019) etc.). QE and the resultant changes in reserve money lead to considerable excess reserves with commercial banks, resulting in an increased propensity to grant loans on the part of banks. These loans could either be business loans or loans for housing or other consumer durables. Of course, if credit demand is generally low as in the downturn, most of the reserves will find their way into government securities. But this "liquidity overflow" unleashed by QE has the potentiality to spill over into inflation once the economy is on the recovery path – inflation which may not be easy to control as the central bank may be reluctant to reverse the interest rates cycle in a significant way, especially in an environment where the markets had become accustomed to a low interest regime for a very long time. Besides, as highlighted by the Bank for International Settlements (BIS) in its 83rd Annual Report, the huge growth in bank reserves brought about by QE in the U.S. and other advanced economies was driving overnight-lending rates to near-zero, making it hard for central banks everywhere to resume using conventional monetary policy. This poses the possibility of a "third party risk" to other nations of a permanent dependency on QE. **As emphasised earlier, what is relevant is that the quantity of money or credit plays a distinct role.**

G. Monetary Aggregates as Indicators

The single interest rate based monetary policy currently espoused by most central banks overlooks an important aspect of monetary policy transmission (first outlined by Friedman and Meiselman (1963) and elaborated subsequently by McCallum (2000), Svensson (2001) etc.), viz. that monetary policy operates through a broad range of interest rates and asset prices. The single interest rate target would be justified if all other interest rates and asset prices moved in tandem with the short-term interest rate at least in the short run. But this assumption is not borne out by the evidence in most countries. In practice, money supply changes do affect the interest rate spreads and the spreads between the short-term rate and equity yields. This happens because of imperfect substitutability between short-term government bonds and longer-term bonds as well as equity yields. This means that the so-called *Operation Twist* (initiated by the Fed in September 2011), with the explicit purpose of increasing the average maturity of the banks' treasury portfolio could achieve some success in lowering long-term interest rates, thereby stimulating business investment and consumer spending and hence affecting aggregate demand. Thus, these kinds of switch operations can have macroeconomic effects, distinct from the effects of changes in the policy rate.

But another important consequence of the role played by a spectrum of interest rates in affecting inflation is that monetary aggregates do have explanatory power for inflation *given the output gap.* This explanatory power is cached in the typical LM curve because the demand for money is assumed to depend only on a short-term interest rate. It is brought out very clearly in monetarist models where the demand for money depends on a spectrum of interest rates (see Friedman and Schwartz (1982, p. 39-40), Laidler (1982, p.113) etc.).[11] For policy purposes, this observation is very relevant. Since monetary aggregates are easier to observe than a wide variety of interest rates that affect aggregate demand, a monetary conditions indicator based on monetary aggregates may be as informative and easier (and quicker) to construct than one based on a spectrum of interest rates. Thus, a model using money as a proxy for the yield structure can enhance the value of money to monetary policy (see Nelson (2003)).

There is also another possible role (as a monetary policy indicator) for monetary aggregates. The announcement of monetary targets could have a significant signalling effect by providing *forward guidance* to financial and commercial markets on the likely future monetary policy stance (see Meyer (2001)). However, *forward guidance* can be a double-edged weapon. By affecting the short-term and long-term market sentiments of foreign investors, which are extremely sensitive to monetary target announcements, it can aggravate capital flows volatility. For EMEs, this can imply increased exchange rate volatility with adverse consequences for their exports.

VI. Conclusion

There are several conclusions following from our detailed analysis.

1. In contrast to the current orthodoxy, which maintains that money has no explanatory power for inflation beyond that contained in the output gap, we find that monetary aggregates can convey important information about future aggregate demand.
2. Even though the NCM model is not in conflict with the monetarist model, the former ignores one vital aspect of the latter, viz. that aggregate demand is affected by a spectrum of yields, and monetary aggregates can be a readily available proxy for these yields.
3. The NCM model supposes that money supply shocks are essentially from the demand side and automatically accommodated. This ignores the fact that shocks to money can also occur from the supply side owing to the actions of commercial banks that impact their loan supply.
4. Monetary base control can be the only instrument available to a central bank in the eventuality of short-term rates approaching the ZLB.
5. Money supply shocks can affect aggregate demand through relative price distortions.
6. Monetary aggregates can serve as an additional communication tool for central banks via *forward guidance.*
7. **Availability matters as much as cost, as far as credit is concerned.**

In the final analysis, monetary policy without money is like Hamlet without the Prince of Denmark.

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Notes

[1] There are a number of methods for the calculation of potential GDP Y* such as the *phase-average trend method, Henderson moving average, Hodrick-Prescott filter, Baxter-King filter, Beveridge-Nelson decomposition etc.* (see Ladiray et al (2003), Nachane and Dubey (2011) etc.). The calculation of the equilibrium velocity V* depends on whether it is *stationary, difference stationary, trend-stationary or trend-stationary with or without structural breaks* (see Hoeller and Poret (1991), Nachane and Lakshmi (2002), Pallardo and Esteve (2000) etc.)

[2] The money multiplier and high-power money are usually defined by $k = \left(\frac{c+1}{b+c}\right)$ and $H = C + R$ where C is currency with the public, R the reserves with the banking system, c is the ratio of currency to total deposits and b is the ratio of bank reserves to total deposits. We use an equivalent but slightly different definition of H in the text.

[3] NDAs are comprised of central bank credit to the government, to commercial banks and to the commercial sector.

[4] In *the long run*, p is expected to converge on p^*.

[5] Angeriz and Arestis (2007) present the model with a strong critical thrust.

[6] This view is also taken by one leading strand of post-Keynesianism viz. that based on Kalecki's (1943) two-class model.

[7] The article by Noyola is in Spanish. We have relied heavily on Danby (2005) to interpret his position.

[8] Two of these works are in Spanish and we rely on Vernengo (2007) to get a gist of their contents.

[9] The two concepts are similar but not identical. The RBI defines 4 measures of money supply (M1 to M4) and 3 measures of liquidity (L1 to L3). M1, for example includes currency with the public plus demand deposits with banks and other deposits with the RBI, whereas M3 additionally includes time deposits of the banking system. The 3 liquidity measures are defined as (i) M3 plus postal deposits (L1) (ii) L1 plus liabilities of financial institutions (L2) and (iii) L2 plus public deposits with NBFCs (L3).

[10] A detailed discussion of these models is given in Nachane (2018), p. 89-93

[11] An empirically manageable baseline demand for money function embodying these considerations may use a single long-term rate on securities as capturing the expected future short-rates (see Brunner (1983), p.50)).

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The Practice of Flexible Inflation Targeting in India – A Preliminary Assessment

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Abstract

This paper examines how the new flexible inflation targeting framework has worked in practice in India, five years after it was introduced. The policy decisions taken by the Reserve Bank of India are analysed on four fronts — the trajectory of inflation, the inflation forecasting record, the voting behaviour of the monetary policy committee, and the ability to keep the weighted average call money rate within the policy corridor. These four themes represent the formal nominal anchor, the intermediate target, the central bank response function and the operating target of monetary policy. Each is a building block of the flexible inflation targeting framework. The paper then offers some suggestions on the road ahead for monetary policy practice in India, both given the experience of the past five years as well as the Covid-19 shock to the Indian economy.

JEL: E43, E52, E58,

Keywords: Flexible Inflation Targeting, Inflation Forecasting, Monetary Policy Committee

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I. Introduction

> *"A central bank's success depends on the quality of its decisions"*
> *— Report of the Expert Committee to Revise and Strengthen the Monetary Policy Framework*

India formally embraced flexible inflation targeting five years ago. The Reserve Bank of India Act was amended in May 2016 to change the monetary policy framework on a firm legal footing. Two other important milestones flanked this regime shift. The Indian government signed a monetary policy agreement with the central bank in February 2015. The main highlight of the agreement was that the Reserve Bank of India was expected to maintain consumer price inflation at 4 percent, with a band of +/- 2 percent. The six-member monetary policy committee held its first meeting in October 2016, with three members from the Reserve Bank of India and three independent experts appointed by the government jointly deciding the policy rate.

This marked the third major shift in the Indian monetary policy framework since 1980 — from credit planning to monetary targeting with feedback to the multiple indicators approach to flexible inflation targeting (Adil and Rajadhyaksha, 2021). The shift to flexible inflation targeting has been accompanied by rich debates about its relevance to a developing country such as India, the choice of headline inflation as the nominal anchor despite a heavy weightage to food items in the consumer price index, the nature of Indian inflation dynamics and the time-varying nature of threshold inflation (Mohanty et al., 2011; RBI, 2014; Patnaik and Pandey, 2020; Dholakia, 2020).

Any assessment of a monetary policy framework should ideally be done over an entire business cycle from beginning to end, covering expansions as well as downturns. A central bank with a formal inflation targeting mandate should be able to maintain average inflation near the target over the business cycle, while maintaining the flexibility to respond to growth deviations in the short run (RBI, 2014). Most studies on the length of the Indian business cycle (Pandey et al., 2017; Behera and Sharma, 2019; for example) estimate it at over five years. However, the record of these past five years can only provide an initial assessment of inflation targeting because this period also saw the Indian economy deal with three major exogenous shocks, viz. demonetisation, the transition to the new goods and services tax, and the Covid-19 pandemic.

This paper focuses on the practice of flexible inflation targeting over the past five years rather than the underlying conceptual concerns – *or on the art rather than the science*. In other words, it examines the RBI's track record based on the building blocks of the inflation targeting regime itself. The paper is arranged around four themes — the behaviour of consumer price inflation, the robustness of inflation forecasts by the Reserve Bank of India, how the monetary policy committee responded to macroeconomic data, and liquidity management in the money market. These four themes cover the nominal anchor, the intermediate policy target, the central bank response function and the operating policy target respectively. The paper then offers some pointers on the road ahead, given the operational record of the flexible inflation targeting regime over the past five years, as well as the unique challenges that have emerged from the macroeconomic shock following the Covid-19 pandemic.

II. The Flexible Inflation Targeting Framework in India

New Zealand was the first country to formally accept inflation targeting in February 1990. A few other countries followed over the next decade, yet economists were for long not confident whether the new monetary policy framework was a fad or a trend (Bernanke and Mishkin, 1997). The answer became clear as the years went by. Thirty-seven central banks had an identifiable inflation target by the time India moved to the new monetary policy framework in 2016 (Jahan, 2017).

Inflation targeting has its roots in the new consensus macroeconomics that emerged in the 1990s. The theoretical structure rests on the basic New Keynesian model with three equations (RBI, 2014). The first equation is the New Keynesian Philips Curve that provides the supply block of the model, where inflation is a function of the output gap, inflation expectations and cost shocks. The second equation deals with the demand side through a dynamic IS equation which shows that real economic activity is negatively correlated with the real interest rate. The third equation is the central bank response function to the inflation gap and the output gap, with the Taylor Rule to set the nominal interest rate being the most popular representation.

The optimal policy for a central bank is to minimise a quadratic loss function that consists of the deviation of actual inflation from its target rate, and the output gap between the actual growth rate and potential growth. The loss function can be written as follows (Woodford, 2004).

$$E_{t_0} \sum_{t=t_0}^{\infty} \beta^{t-t_0} [(\pi_t - \pi_{t-1})^2 + \lambda (x_t - x^*)^2]$$

Where (x_t-x^*) denotes the output gap, $(\pi_t - \pi_{t-1})$ denotes the inflation gap and λ is a weight. In such a system, a pure inflation targeting central bank keeps $\lambda = 0$. A central bank with a flexible inflation targeting mandate keeps $\lambda > 0$, which means it responds both to the inflation gap as well as the output gap. A flexible inflation targeting central bank thus commits to keep inflation at a particular level over the medium term (through either a point target or a given range), while maintaining the flexibility to respond to temporary shocks to output.

The three-equation New Keynesian model provides the theoretical bedrock of flexible inflation targeting. However, this simple model is inadequate for the actual conduct of monetary policy. The Reserve Bank of India has, over the past five years, used a Quarterly Projection Model, which provides the analytical edifice for the conduct of flexible inflation targeting in India (RBI, 2016).

Aggregate demand in the economy is seen through the prism of the non-agricultural (NA) output gap, which is explained by the past NA output gap, expectations of the future NA output gap, global demand, credit conditions, the real lending rate and the real exchange rate. Monetary transmission features via an equation on bank lending tightening conditions. This appears because the Indian financial system is dominated by banks. Lending conditions not only affect the output gap but are also affected by it. The Philips Curve for core inflation is influenced by factors such as the domestic output gap, expected inflation, past inflation, and the gap between headline and core. Food prices are assumed to influence core inflation via the expectations channel.

Inflation expectations are dependent on past and future inflations and the credibility of the central bank to deal with price pressures in the economy. Central bank credibility is only built gradually over time. Also, it is assumed that credibility changes in a non-linear fashion, which means that monetary policy has to be aggressive to achieve initial disinflation. Policy responses can be milder once credibility is built up.

The RBI model parts ways with other central bank forecasting models by having a separate equation for food inflation, given the high weight of food in the Indian CPI. Food inflation in the short run is driven by three shocks -- monsoons, minimum support prices, vegetable prices. There is another separate equation for energy prices as well and considers two types of energy prices -- market prices and administered prices. Market prices are determined by global entry prices and movements in the exchange rate.

There is a monetary policy function built around the inflation forecast. This reaction function contains both core inflation and headline inflation, so the RBI can look at only core, only headline or some combination of the two while deciding its policy response. The transmission from policy rates to the interest rates for private borrowing is modelled as dependent on the term structure of interest rates as well as the term premium. The exchange rate depends on exchange rate expectations, domestic nominal interest rates, global nominal interest rates and a country risk premium.

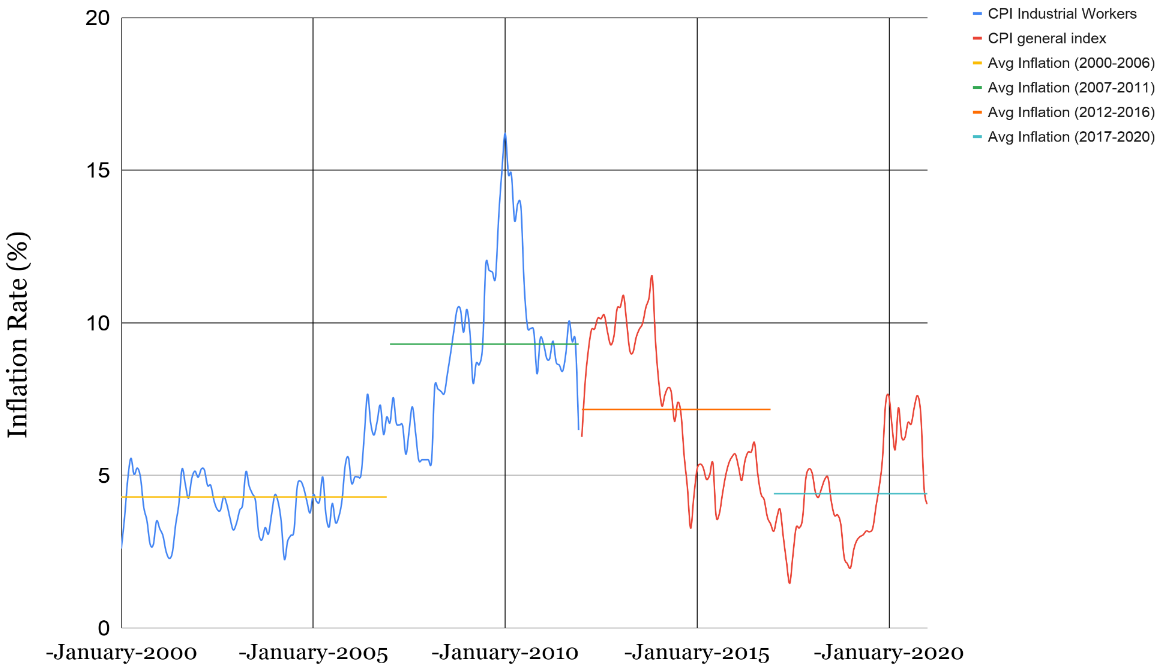
This model provides a useful backdrop for the next section, which reviews the performance of flexible inflation targeting in India in terms of the nominal anchor of monetary policy.

III. The Indian Inflation Experience

There are three stylised facts about the Indian inflation experience since 2016. First, average inflation has come down in this period (see chart 1). It has averaged 4.4% since 2016, or very close to the midpoint of the formal inflation target given to the Reserve Bank of India. However, this may not be fully explained by a shift in the monetary policy framework alone. Econometric evidence from the first phase of the disinflation that began in 2014 suggests that around half the reduction in price pressures come from lower adaptive inflation expectations because of the recent inflation trajectory, another 20 percent of the disinflation came from the moderation in the discretionary component of minimum support prices (MSPs) for food, while 33 percent of the change is explained by lower forward-looking rational inflation expectations as a result of the shift to flexible inflation targeting (Chinoy et al., 2016).

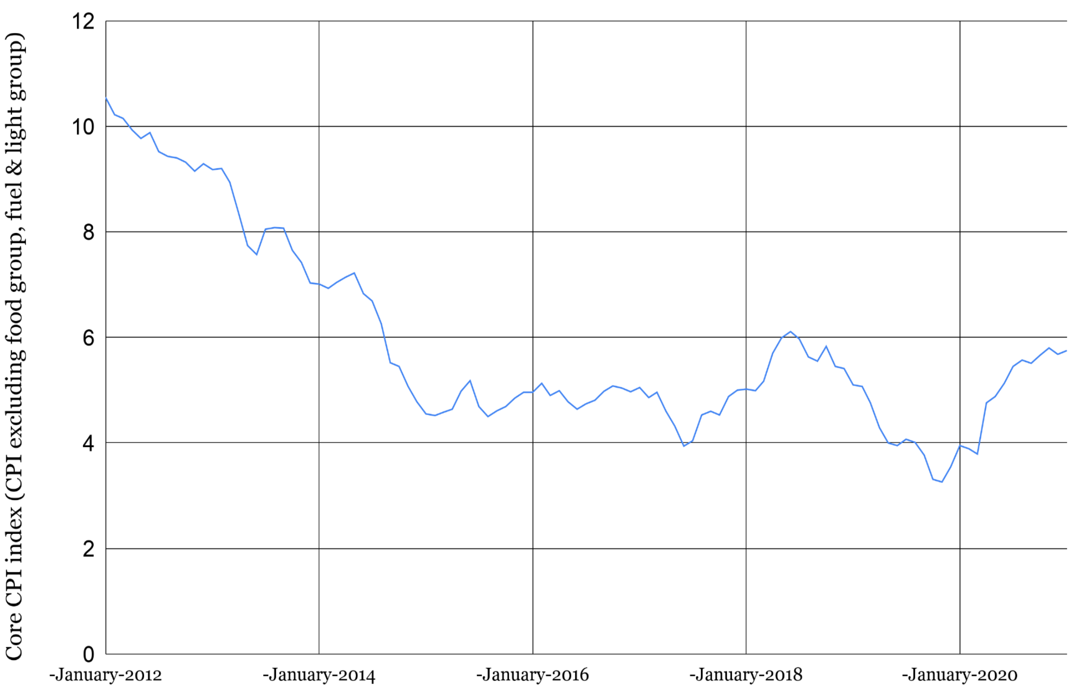
Second, a look at the trend in core inflation suggests that price pressures have eased in the Indian economy even when volatile energy and food prices are taken out of consideration (see chart 2). Third, the inflation gap between India and comparable Asian countries has also narrowed in recent years, as India became less of an inflation outlier compared to the situation before 2014 (chart 3). The decline in inflation in India is not an isolated event. It should be seen together with several other structural changes in the Indian economy, including lower trend growth as well as the decline in the domestic investment rate, which cannot be directly explained by the flexible inflation targeting framework (RBI Bulletin, March 2021).

Chart 1: Inflation Periodisation (2000-2020)



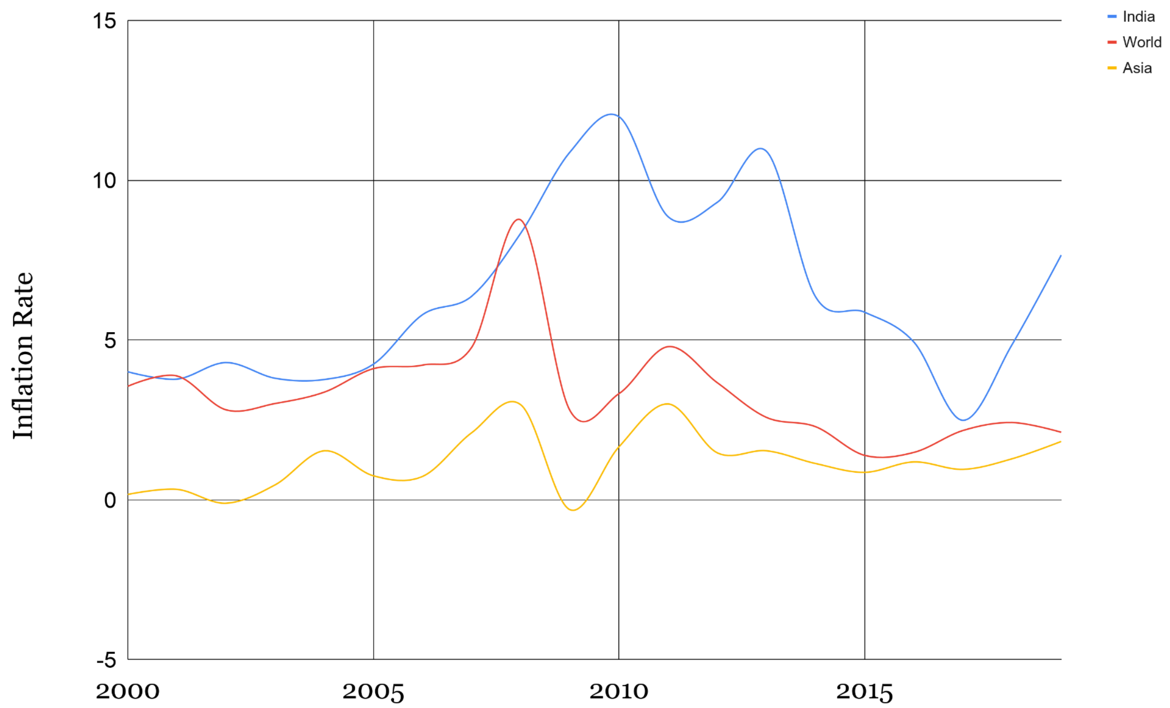
Source: Author's Analysis; Data: India Data Hub

Chart 2: Core CPI Inflation (2012-2020)



Source: Author's Analysis; Data: CMIE

Chart 3: Inflation Rate - Asia, India and the World (2000-2020)



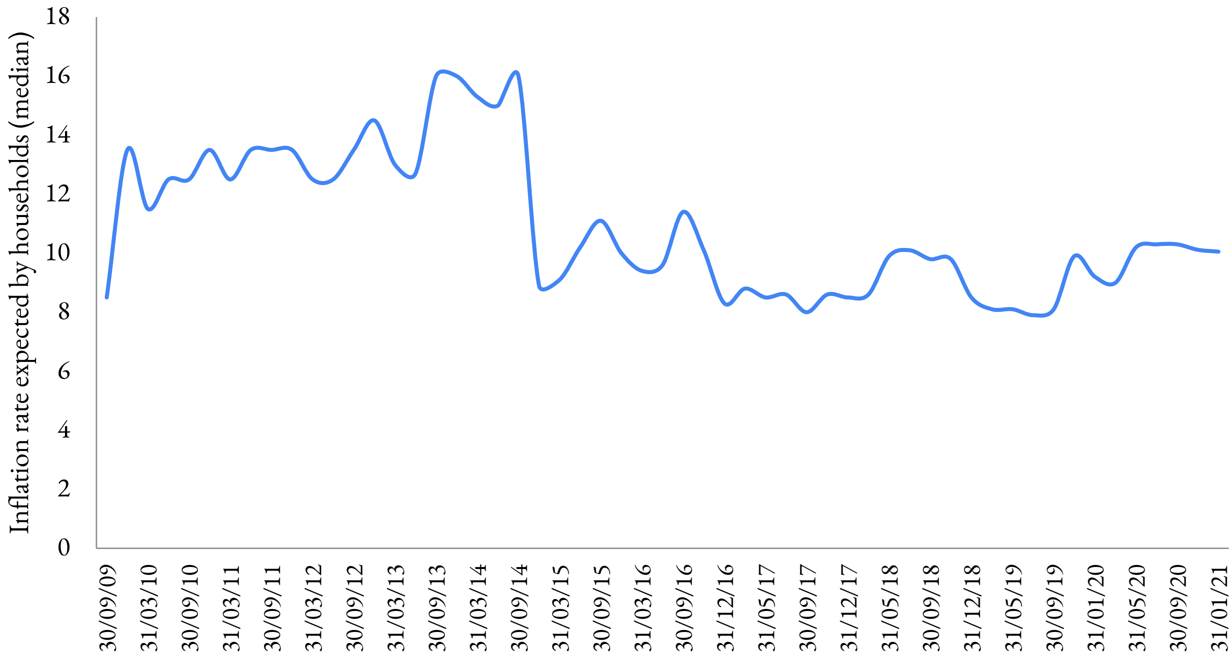
Source: Author's Analysis; Data: IMF
Note: For Asia inflation, the authors took an average of the inflation rate of the top 10 Asian economies (11, including India), weighted by their GDP.

The recent disinflation has been accompanied by a few important changes in the underlying dynamics of Indian inflation. Two changes are particularly important. The first one is inflation persistence, or how soon inflation comes close to target after a temporary shock, has significantly come down in recent years (Marques, 2004; Dholakia and Kadiyala, 2018; Kocenda and Varga, 2017; Beechay and Osterholm, 2018). It means that the central bank has to impose fewer costs on the real economy to get inflation back towards the target (Mishkin, 2007).

The second important change in Indian inflation dynamics is that headline inflation now seems to converge to core inflation, rather than the other way (Chinoy and Jain, 2018). The experience of the 2007-12 period shows that food price shocks quickly spilt over into generalised inflation. In other words, core inflation moved to meet headline inflation whenever there was a temporary divergence between the two. The evidence of the past few years suggests that the process of convergence has now changed, as headline inflation moves to meet core inflation.

Both these changes in the underlying dynamics of Indian inflation have a common thread running through them — lower and perhaps better anchored inflation expectations (see chart 4). They are now less likely to drift higher in response to temporary food or fuel shocks. Indian inflation expectations are adaptive rather than rational (Sharma and Bicchal, 2018), so the recent evidence suggests that the gradual disinflation since 2014 has made agents less likely to change their inflation expectations because of temporary shocks to food or fuel prices.

Chart 4: 12-month Ahead Inflation Rate Expected by Households (Median of Responses)



Source: Author's Analysis; Data: India Data Hub; RBI Inflation Expectations Survey

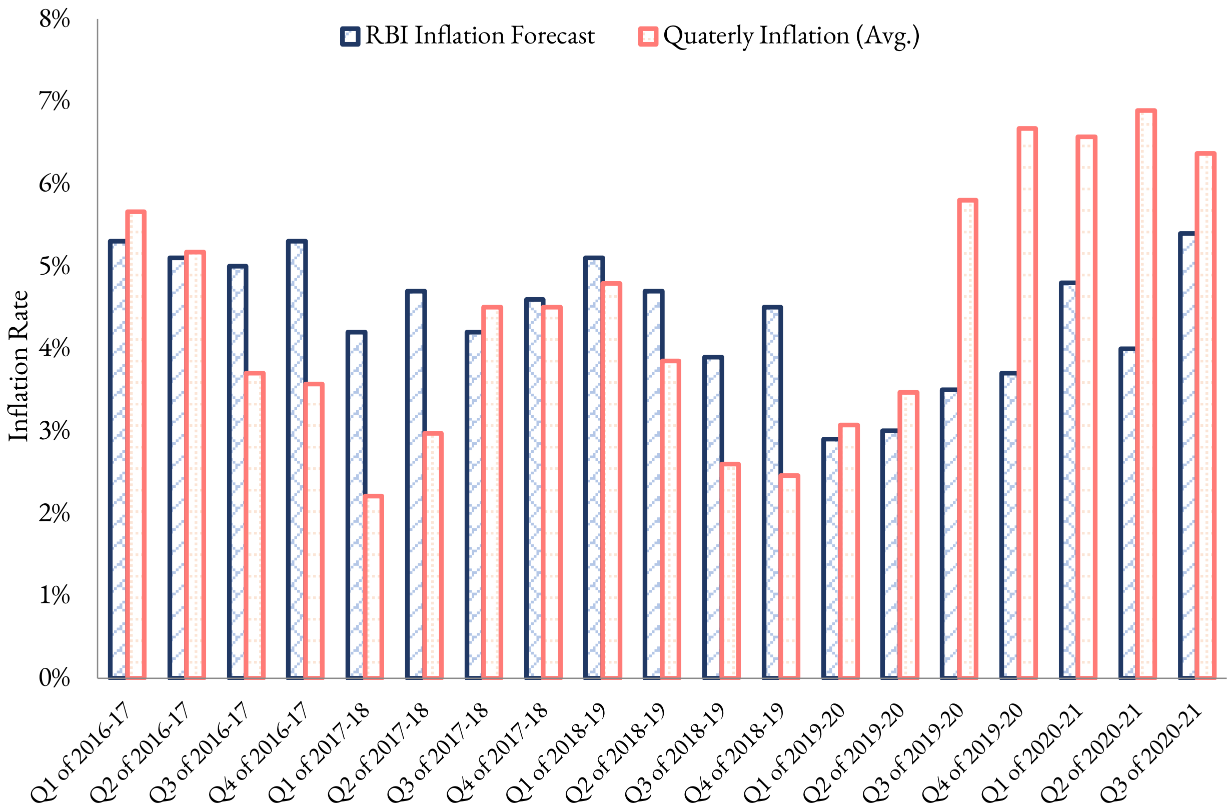
IV. The Inflation Forecast

The formal target of monetary policy is the inflation target given to the central bank by the government. It acts as an anchor around which private sector expectations are supposed to consolidate in the medium term. However, the actual path of inflation in any economy can diverge from the inflation target for a range of reasons. The central bank needs an inflation forecast to act as an intermediate target in the short term to simplify its central task (Svensson, 1997). Also, given the long and variable lags of monetary policy, the central bank has to choose an interest rate today with future rather than current inflation in mind.

Inflation targeting thus becomes inflation forecast targeting in practice. The central bank's inflation forecast is based on its quantitative model described in section 2 of this paper. How has the Reserve Bank of India done in terms of its ability to forecast inflation in the past five years? The amended Reserve Bank of India Act directs the Indian central bank to provide inflation forecasts of 6-18 months in the bi-annual Monetary Policy Report. The data from these reports have been used for the analysis below.

Chart 5 shows the inflation forecast[2] of the Reserve Bank of India compared to the actual average monthly inflation in those quarters. We have assumed that the inflation forecast can be considered correct if it is within 25 basis points of the actual inflation in that period. There have been only three quarters in which the Reserve Bank of India has correctly forecast inflation since Q1 of 2016-17.

Chart 5: RBI Inflation Forecast vs Quarterly Average Inflation



Source: Author's Analysis; Data: RBI Monetary Policy Reports

The forecasting errors can be arranged into two broad periods. The first period was between Q3 2016-17 to Q1 2019-20, when the RBI overestimated inflation pressures. The second period was from Q2 2019-20 to Q3 2021-22, when the RBI underestimated inflation. These patterns broadly hold even if the error margin is increased to 50 basis points. The forecasting errors are important in a monetary policy regime in which the central bank inflation forecast is the intermediate policy target, and especially so when the forecasting errors are bunched together over several quarters. Inflation forecasting errors can lead to policy errors as well, though not necessarily so. What inflation forecasting errors mean for the actual interest rate decisions of the monetary policy committee also depends on similar estimates of the output gap, as well as the relative weights given to the inflation gap and the output gap in a Taylor Rule-style central bank response function. Also, the RBI inflation forecasts released in the bi-annual Monetary Policy Reports seem to assume that the repo rate is unchanged over the forecast period, while it may endogenously change in response to an inflation surprise (Mahambare, 2021).

V. The MPC decisions

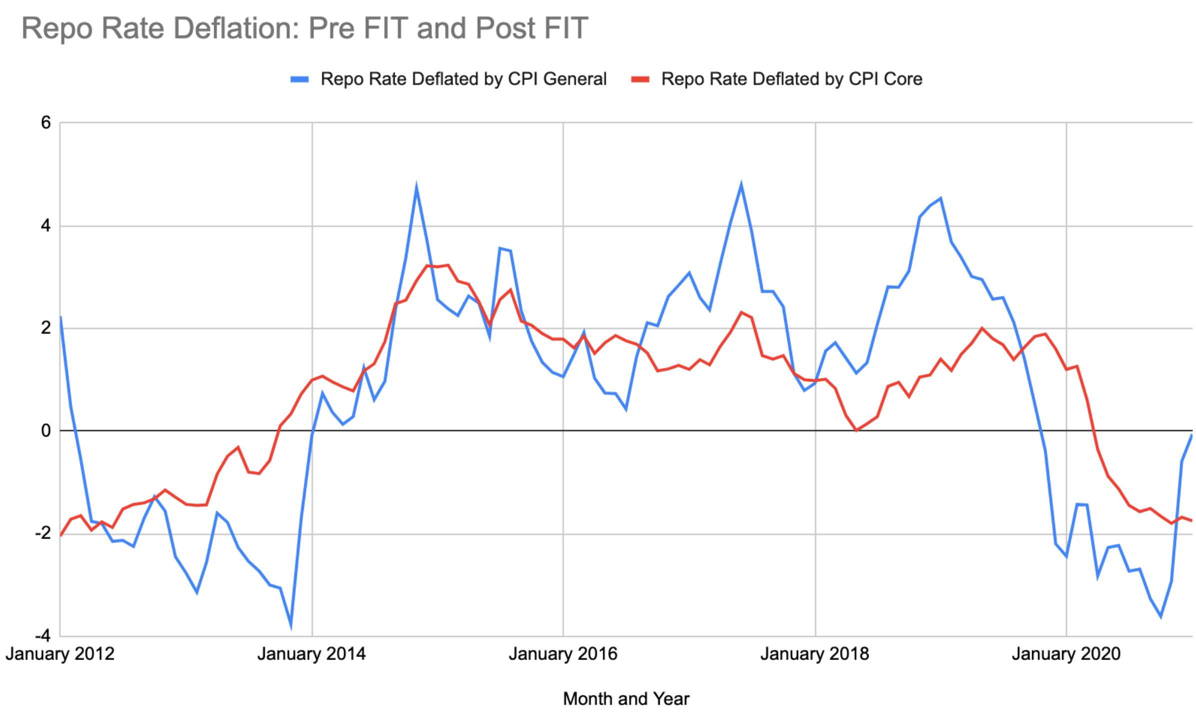
The crux of the flexible inflation targeting framework is the actual decision making by the six-member monetary policy committee. A flexible inflation targeting central bank should ideally respond to both the inflation as well as output. In its report published in 2014, the Expert Committee to Revise and Strengthen the Monetary Policy Framework mentioned a "rule of thumb" Taylor Rule that had the same coefficient to the inflation gap and the output gap. The RBI's Quarterly Projection Model (QPM) to conduct policy adds further nuance to this. It has a central bank response function that takes into account both headline and core inflation (Benes et al., 2017).

The evidence of policy decisions under the flexible inflation targeting regime suggests that the RBI has not been an "inflation nutter". It has responded to the output gap while setting interest rates, and monetary policy did not become more hawkish after introducing flexible inflation targeting (Eichengreen et al., 2020). This is especially evident after the pandemic struck when the Indian central bank did not raise interest rates even though inflation was above 6 percent for eight consecutive months after March 2020. It looked past high inflation to focus on the output gap.

Another resonant question is whether the RBI has become more hawkish after it shifted to flexible inflation targeting. The QPM assumes that the monetary policy response has to be more aggressive in the early stages of disinflation, till the stock of central bank credibility is built up (Benes et al., 2017). This is especially true when inflation expectations are backward looking rather than forward looking. Chart 6 shows the repo rate deflated by the inflation rate since Q4 2016-17. The Indian central bank has maintained a positive real policy rate, compared to the negative real policy rate before that. However, real interest rates slipped below zero in the post-pandemic period.

Table 1 lists the MPC voting decisions from October 2016 till December 2020. In 18 out of the 26 meetings, the MPC cut the policy rate eight times, hiked in two times, and maintained status quo 16 times. Most of the rate cuts were after February 2019, first in response to the economic slowdown followed by the pandemic. Also, 16 decisions were taken by consensus, while there were ten others with at least one dissenting vote against the majority opinion. Such a mix of consensus versus non-consensus decisions is in line with international experience from other MPCs (Dua, 2020).

Chart 6: Repo Rate Deflated by CPI



Source: Author's Calculations: Data: Database of Indian Economy, RBI; CMIE

Table 1: Monetary Policy Committee Voting Pattern

S. No.	Date	Decision	Consensus?
1	October 3-4, 2016	Cut	Yes
2	December 6-7, 2016	Hold	Yes
3	February 7-8, 2017	Hold	Yes
4	April 5-6, 2017	Hold	Yes
5	June 6-7, 2017	Hold	No
6	August 1-2, 2017	Hold	No
7	October 3-4, 2017	Hold	No
8	December 5-7, 2017	Hold	No
9	February 6-7, 2018	Hold	No
10	April 4-5, 2018	Hold	No
11	June 4-6, 2018	Hike	Yes
12	July 30 - August 1, 2018	Hike	No
13	October 3-5, 2018	Hold	No
14	December 3-5, 2018	Hold	Yes
15	February 5-7, 2019	Cut	No
16	April 2-4, 2019	Cut	No
17	June 3-6, 2019	Cut	Yes
18	August 5-7, 2019	Cut	Yes
19	October 1-4, 2019	Cut	Yes
20	December 3-5, 2019	Hold	Yes
21	February 4-6, 2020	Hold	Yes
22	March 24-27, 2020	Cut	Yes
23	May 20-22, 2020	Cut	Yes
24	Aug 4-6, 2020	Hold	Yes
25	Oct 7-9, 2020	Hold	Yes
26	Dec 2-4, 2020	Hold	Yes

VI. The policy corridor

Monetary policy needs an operating framework through which the central bank keeps market interest rates aligned with the decisions of the MPC. The operating framework of Indian monetary policy is built on three pillars — the weighted average call money rate (WACR) is the operating target, a policy corridor on two sides of the repo rate provides the broader liquidity management framework and the transmission mechanism ensures that the interest rate decisions of the MPC influence the actual borrowing costs, and thus decisions, of economic agents.

How successful has the RBI been in keeping the WACR within the Marginal Standing Facility rate at the upper end of the policy corridor and the reverse repo rate at its lower end? The repo rate is in the middle of the policy corridor.

Table 2 shows the record of monetary marksmanship over three periods. We have considered the post-pandemic months after March 2020 as a separate category because of the unconventional monetary measures taken by the RBI after the steepest ever decline in quarterly economic growth in India.

Table 2: The Policy Corridor

Regime*	Outside Corridor		Inside Corridor			Total
	>MSF	<Reverse Repo	<Repo	Equal to Repo	> Repo	
Pre FIT	53	83	742	31	656	1565
FIT - Pandemic	63	129	855	11	129	1187
Post Pandemic	31	64	190	0	31	316
Overall	**147**	**276**	**1787**	**42**	**816**	**3068**

**Pre-FIT period: October 2011 - October 2016; FIT-Pandemic: October 2016- March 2020; Post Pandemic: April 2020- December 2020*

Source: Author's Calculations: Data: Database of Indian Economy, RBI

There are two trends worth highlighting in the data. First, monetary marksmanship has deteriorated over the three periods of time. Second, the WACR has gone below the reverse repo rate far more than above the MSF rate. One possible explanation for the more frequent breaches in the operating framework is that the policy corridor was reduced from 100 basis points to 50 basis points in 2016, which means that monetary marksmanship was made more precise. The second is that the two periods after 2016 were marked with two important exogenous shocks that led to a surge in interbank liquidity, viz. demonetisation in November 2016 and the pandemic after March 2020.

The third pillar of the operating structure is the transmission mechanism. The RBI has made two important changes in its practice since 2019. It has improved monetary transmission by compulsorily linking bank lending rates to the repo rate, an external benchmark (Dua, 2020). The Indian central bank has also begun to actively manage the entire yield curve for government bonds, in a bid to compress term premiums. These two changes are too recent to offer any lessons for the medium term.

VII. The Road Ahead

The experience of the first five years of flexible inflation targeting has been encouraging enough for the government to maintain the same inflation target for another five years. However, there are some important lessons for the future on the practice of inflation targeting. In this section, we focus on five such issues that need attention.

(a) Indian monetary policy is now anchored to the annual rate of increase in the consumer price index (CPI). Does the index adequately reflect the underlying price pressures in the economy? The weights in the consumer price index (CPI) have been decided on the basis of the consumer expenditure surveys conducted by the NSSO in 2011. This is not only dated but also not aligned with the national accounts for the same year, which show that food accounts for 32 percent of consumer spending rather than the 46 percent in the CPI. That number will be even lower in 2021, as incomes have increased.

In fact, India is an outlier in terms of the weight given to food in its CPI (Balasubramanian et al., 2021). A recalibrated CPI is needed, given that CPI inflation is the nominal anchor of monetary policy. Also, lower food weights in the CPI will reduce the occasional divergences between headline and core inflation, which muddle monetary policy decisions.

(b) The inflation forecast is the intermediate policy target for the MPC. Our analysis earlier in this paper showed that the RBI has not been able to anticipate the inflation trajectory over the short term very well. Sustained forecasting errors could mean that monetary policy ends up either too easy or too tight, given an output gap.

It is not clear to what extent the voting decisions by the individual members of the MPC — and especially the three outside members — are dependent on the RBI's inflation forecasts as against their own private assessments. To the extent that the latter plays a part, there is a good case for the published MPC minutes to reflect the inflation forecasts of individual members. The dot plots that the members of the US Federal Open Market Committee use to convey their individual assessments of future interest rates could also be an alternative.

(c) The monetary policy agreement signed by the RBI with the government defines the policy rate as "the rate for repo transactions". The operating procedure of monetary policy is to keep overnight interest rates in the policy corridor between the Marginal Standing Facility and the reverse repo rate. The repo rate lies between the two. However, the MPC has no say on either the MSF or the reverse repo rate. They are set by the RBI.

On the two occasions over the past ten years, the RBI has decided to widen the policy corridor in response to a macroeconomic shock — after the taper tantrum in July 2013 and after the pandemic in March 2020. Such widening of the policy corridor is not unexpected during times of volatility in the money market, but it highlights the concern that the MPC has only a limited say in one of the most important operational parts of monetary policy, viz the width of the interest rate policy corridor. Thus, there is a case for the MPC to have decision-making powers over at least the reverse repo rate.

(d) Most major economies in the world have seen a significant deterioration in public finances since the onset of the pandemic. India has been no exception. This is bound to have implications for the conduct of monetary policy till the fiscal deficit is reduced. The finance minister has indicated that the fiscal deficit of the Union government is not likely to come below 4.5 percent of GDP till the end of fiscal year 2025-26 (Budget Speech, 2021-2022). One of the assumptions made by the Urjit Patel committee report of 2014 is that the "Central Government needs to ensure that its fiscal deficit as a ratio to GDP is brought down to 3.0 percent by 2016-17". Meeting the 4 percent inflation target when the fiscal deficit is far from its FRBM target may be challenging.

Another challenge for the RBI is that it has had to aggressively conduct open market operations to manage bond yields, as well as engage in active yield curve management through activities such as Operations Twists. These are designed to compress term premiums in the Indian bond market. It is perhaps still premature to say that Indian monetary policy is once again facing the problem of fiscal dominance, but the need to accommodate large tranches of government borrowing while keeping bond yields low can test the flexible inflation targeting framework, especially when there are negative inflation shocks.

VIII. Conclusion

The first five years of flexible inflation targeting in India have been encouraging. The decline in average consumer price inflation during this period — and especially before the onset of the pandemic in early 2020 — may not be totally explained by the new monetary policy framework (Mohan and Ray, 2020). Other factors that affect inflation include fiscal policy, moderate increase in minimum support prices of food, lower global commodity prices, and exogenous shocks such as demonetisation, which affected aggregate demand. However, there are also important changes in the underlying inflation dynamics that can be more directly ascribed to monetary policy, and especially the better anchoring of inflation expectations.

The experience of the past five years also provides learnings on the conduct of monetary policy in the coming years. The most immediate challenge is also how the RBI will use its flexible inflation target mandate when it also has to accommodate a large government borrowing programme.

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Notes

[1] The authors thank Arjun Jayadev for comments on an earlier draft of this paper.

[2] RBI Monetary Policy Reports are released in April and October of any given year. We look at the April report for Q1 and Q2 forecasts and October report for Q3 and Q4 forecasts in that year.

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Continuity or Change: Leadership Discourse and Policy Analysis at the Helm of Reserve Bank of India

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Abstract

Understanding the evolution of policy over long horizons is an interesting exercise. While it is possible to look at a policy approach ex-ante, many of the decisions of the policy makers are undertaken in response to an emerging situation and several times, there could be initiatives that seemingly have internal contradictions. Additionally, institutions like the Reserve Bank of India would have approaches institutionalised that shape the policy making and thoughts of the leaders at the helm of affairs. Understanding this process through chronological insights and seeing patterns is an exercise that this paper attempts. The paper looks at the speeches delivered by the Governors (and one Deputy Governor) of the RBI to find a pattern and meaning into the series of policy initiatives that the institution is undertaking. In looking at the patterns, the paper tries to build a narrative of an overarching concern that the leaders might have during their tenure. The paper picks up the speeches delivered by leaders at the helm of RBI from 2004 till 2018 and examines the policy discourse to understand the elements of continuity and change.

Keywords: Monetary Policy Decisions, RBI Governors, Policy Discourse

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I. Introduction

How does one examine the evolution of the policy and regulatory approach of a Central Bank over a period of time? This is an intriguing question. One way to look at the issue is to document chronologically the list of circulars, notifications and policy statements and try and read a pattern into it. By doing so, it would be possible to understand the actions of the policy maker, break up the larger policy stance into actionable parts and superimpose an intellectual logic.

Are there alternative ways of trying to understand the policy narrative, and is it possible to associate some of the initiatives to the leadership at that time? Would we be able to understand how the leadership steered the policy primarily according to their own personalities and orientations? How much of it is guidance from the technical and practical imperatives and whether something could be attributed to the leadership and vision of the Governor. Any of these would have to factor the limitations of implementation. It would also be important to factor in the short and tactical reversals in a larger narrative. It is possible to carry out an exercise to get a deeper insight into the policy making process.

An attempt was made in the past, to understand the evolution of policy with regard to financial inclusion through a series of detailed interviews of the Governors of the Reserve Bank of India (RBI). This was done by examining the events during the terms of the Governors with the intellectual logic being provided them in the long-form interview, where they could look back at the actions and provide a greater logic, with the benefit of hindsight (Sriram, 2018). In this paper, we try to look at how the leadership of the RBI shaped the discourse through a review of the speeches delivered by the Governors during their tenure, largely by reviewing the collection of speeches of recent Governors.

We have the benefit of the speeches being made available in the form of books. Governors YV Reddy, Raghuram G Rajan and Urjit Patel have published the speeches delivered during their tenure in the form of books. The advantage of getting the speeches in the form of a book is that there is a logic and prior classification by the author which gives an indication about the broader thematic context. D Subbarao (Governor during 2008 to 2013) published his memoirs during his stint at the RBI but not his speeches (Subbarao, 2016). However, all the speeches delivered from 1990 onwards by the senior functionaries of RBI are available on the website and we have reviewed Governor Subbarao's speeches from that repository. Urjit Patel's book (2019) is a bit narrow as he did not deliver many speeches and was known to be reticent. However, in addition to him, we have a book of speeches delivered by Deputy Governor Viral Acharya(2020) – whose tenure significantly overlapped with that of Urjit Patel.

It is also possible to do a longer and deeper comparative analysis of the speeches of the Governors at the international level given that a repository of the speeches is available at the Bank for International Settlements[1]. However, for the purpose of this paper, we have restricted the review only to the four books of speeches that were published and dipped into Subbarao's speeches available on the RBI website, largely to fill the chronological gaps.

Reddy: The leader who insulated rather than integrated

Reddy's book (2009) titled "India and the Global Financial Crisis" was published in the aftermath of the 2008 Global Financial Crisis (GFC). However, it does not quite deal with the crisis as such. The book

[1] See for instance, https://www.bis.org/list/cbspeeches/

has a well-balanced set of speeches that look at the role, functions and concerns of a central bank – economic growth and development and locating monetary policy in the rubric; price stability and inflation; financial sector regulation, risks and measures to avoid volatility; changing contours of the function of financial institutions – particularly banking; external sector, foreign exchange, managing capital flows and the difficult topic of global balances between emerging market economies and the evolved markets.

The timeline of Reddy's book was between 2003 and 2008. The concerns of the Governor were on issues of India integrating with the global economy and the insulation that should be made available. It dealt with multiple transitions that were happening in the world where he appeared to be juggling with many balls in the air.

Our commitments to international trade treaties with the World Trade Organisation, required us make our markets available to the international community. We had to do this without causing turmoil or distress to the domestic players. At the same time, the economy was moving towards the market-based principles. This meant an aggressive growth of private sector with reduced significance of public sector enterprises; family businesses turning more professional; a change in the relationship between labour and management; increase in productivity and efficiency leading to growth, but without a concomitant increase in jobs; need for greater regulation to ensure fair competition and the debate on whether our policies are pro-market or pro-business – indicating a structural approach in the former and a crony approach in the latter. There were attempts at consolidation of the banking sector through the reverse merger of development financial institutions with banks, the increasing importance of capital and prudential norms in the banking sector following the Basel recommendations and the concerns of customer service and financial inclusion.

In the run up to this period, the economic administration had also changed. Automatic monetisation was phased out after the agreement between the Union Ministry of Finance and the RBI Governor in 1997 and the move was towards the Fiscal Responsibility and Budgetary Management Act (FRBM).

How did Reddy respond to all these dynamics? The answer could be provided in two words – integration and insulation. His speeches broadly indicated a commitment to the common person which was evident in his speech about the approach of RBI towards microfinance. Here, he recognised the importance of informality inherent in the operations and why this sector had to have light regulation. The approach was to encourage innovation and unshackle the sector from stringent banking norms.

For a regulator who had the dual role of market development and universalisation of formal financial services and at the same time interested in maintaining systemic stability and customer protection, there was a dilemma: Is it okay to allow these institutions to accept deposits, as the poor needed savings services badly? How did that square up with legacy issues in the co-operative sector where there was a general belief that governance norms were not stringent; fit-and-proper norms were compromised because of the essential nature of informality and the principle of mutuality? Were there some warning bells ringing in the co-operative sector? So, was it desirable to have a separate legislation for the inclusive finance sector? Given that these services were offered both in the for-profit format, Reddy had hard choices on the regulatory framework, including on the role of foreign capital, particularly from the private equity players who had significantly high hurdle rates of profits, valuation and stringent time horizons for exit.

Reddy was able to place the debate relating the rural finance in the larger perspective of what he called the four deficits: public investment and credit deficit; infrastructure deficit; market economy deficit and the knowledge deficit. He also asked the difficult question for a central banker – whether farmers needed loans at a lower interest rate, or they needed better access. While the paper on rural credit did not provide the answer, it was effectively answered by the microfinance sector, which had put the need for access above the benefits of a low interest rate.

On both monetary policy and inflation targeting, Reddy was a man unto his own. However, the thought that monetary policy had to be a decision based on widespread consultation was institutionalised during his time. He formed a technical advisory committee that gave inputs to the Governor. Between inflation led growth and control of inflation, it appeared that Reddy's preference was towards the latter – a belief that inflation was a penalty on the poor.

There is a notion that Reddy was a conservative at heart – a reason why we were insulated from the GFC was because of his conservatism which prevented any innovation in the financial markets. His speeches expressed these concerns about derivatives and exotic instruments. This did not mean that he was anti-reform. Reddy's speeches indicated that he was pro-reform, but in an insulated atmosphere. He believed that there was merit in integration with the global markets only after internal strengths were acquired in an insulated environment. Therefore, he was open and encouraging about prudential norms, increasing capital adequacy, making the public sector banks more market-oriented, while there was reluctance on allowing foreign banks to come in. He recognised that the forex markets should be open for retail customers and on the current account, but not on the capital flows.

Reddy's speeches were even more important because he used the speeches as an instrumentality of intervention in the market. This is what he called open mouth operations (rather than open market operations) – influencing the markets through signalling through the speeches.

The last two sections of the book of speeches were possibly a prelude to an impending crisis. They talked about liberalisation of capital account and the global imbalances, an area where Reddy had significant reservations with the government of the day. An area where Reddy preferred insulation rather than integration. History tells us that this approach of insulation was a wise one. There are enough insights in the speeches to understand his justifications.

Subbarao: Managing the crisis and its aftermath

There were multiple initiatives taken up during Subbarao's time. The memoirs "Who Moved my Interest Rate?" provided a well-rounded picture of his tenure covering multiple functions of a leader of the central bank. The book continued an objective he had set for himself when he entered the RBI: demystifying the Central Bank. While the book did a good and well-rounded job of defining the functions and tensions of the central bank, his speeches (not brought out as a book but listed on the RBI website) were overly skewed towards the issues pertaining to the GFC and its management, the question of integration with the global economy and insulation from the crisis. In one sense, Reddy's theoretical questions about integration were starkly visible with international experiences. The independent think tanks and agencies like the International Monetary Fund were revisiting the integration question as well as the regulatory framework that was market-friendly.

While many initiatives were taken when he was the Governor – like financial inclusion which required institutional village visits; the agenda being institutionalised by mandating all banks to submit board approved financial inclusion plans and allocation of all habitations with a population of more than 2,000 to a bank for having a customer touchpoints – these do not find proportionate representation in his discourse. Even the Andhra Pradesh microfinance crisis that created much news barely finds a mention in his speeches. Interestingly all the speeches pertaining to the financial inclusion were largely delivered by KC Chakrabarty, the then Deputy Governor in charge of that portfolio. On issues of monetary policy and inflation, most of the speeches were delivered by another Deputy Governor Subir Gokarn. It is also telling that none of his deputies spoke about the crisis as much as Subbarao during his tenure.

This broadly indicated that the Governor was overly concerned about restoring stability and minimising the impact of the crisis. The personal priority was to emerge out of the crisis with as little damage. That focus also meant that towards the end of his tenure, inflation went out of control. It is but natural that contextually he would have been invited to speak on the GFC during his tenure as that was the issue bothering the world at large, because of the overwhelming nature of the crisis, it was telling that even on occasion where he could have chosen a different topic, Subbarao generally chose to speak about the crisis. Therefore, it is quite interesting that he did not publish a specialised semi-academic book on the crisis but chose to have a more popular, well-rounded book on the governor's office in the form of memoirs.

Rajan: Exuberance and Enthusiasm

Raghuram Rajan's leadership at the Central Bank was unusual in many ways. Unlike his predecessors, who did five-year terms, he had a limited term of three years. Rajan seems to have had a dual approach with regard to his role. One was the classic approach of a central banker: looking at the economy, inflation, banking, capital flows, stability and regulation. The other was to look at how RBI was organised. Both from his actions and his speeches, we find that his canvas was vast. The speeches delivered by Rajan were very unusual from all the speeches delivered by any Governor in the past.

His book "I Do What I Do" has the speeches and is organised into multiple sections. One section broadly covers the outward-facing functions of the RBI: managing inflation, competitiveness in banking, deepening of financial markets; financial inclusion; and the resolution of distress. The section titled "RBI Matters" is inward-facing, where the communication to RBI staff and issues pertaining to the structure and functions of RBI are discussed. But beyond these two broad buckets, the part that made news were the speeches that were clubbed under the head "The Economy and Other Issues". These moved towards a much wider canvas where broader issues of democracy, tolerance and similar issues were picked up, taking the discourse into the remit of a public intellectual. That he delivered a range of speeches that were unusual for a Governor, in itself, became a matter of discussion, and his predecessor Subbarao came to his defence in one of the interviews much later (PTI, 2016).

Rajan's speeches engaged with the economy as a whole. He had particular interest in talking about inflation. He talked about targeting inflation and using the appropriate index for doing so. He was also concerned about how inflation could be managed, and the concept could be effectively communicated to people at large. While the inflation targeting framework was first recommended by the Financial Sector Legislative Reforms Commission (Srikrishna, 2013), it was not acted upon. Rajan was in favour of transitioning monetary policy formulation to a committee system. The Urjit Patel committee on monetary policy was one of the early committees that was set up during Rajan's tenure. The RBI Act was also amended to formalise the Monetary Policy Committee system. By the time the first sitting of the newly constituted monetary policy happened, Rajan had demitted office.

We also find that Rajan had an abiding interest in financial inclusion – during his tenure not only did he appoint the Nachiket Mor Committee that went into great detail on aspects of financial inclusion, but he also implemented many recommendations, including licencing a new set of payments banks and small finance banks. The aggression with which new licences were given and the concomitant ability to take the risk of inviting a large number of new players was not seen in any of the former Governors.

While Rajan's term did lay out a larger vision for the role of the RBI in integrating with the global market and embracing reform domestically to prepare for integration, we could say that he had a greater focus on the reform of the banking system. He initiated governance reforms in public sector banks, firstly by setting up the PJ Nayak Committee and later attempting to implement some of the recommendations. While the credit for starting the reform in the governance of state-owned banks by setting up a Bank Boards Bureau was to go to the union government, the foundation and the intellectual argument was laid by Rajan. The reform road map was both from the perspective of changing the banking system structure, incorporating a large number of new and market friendly players, and the deep reform needed with the legacy players – the public sector banks (and the old private sector banks). To this end, he advocated greater competition in banking. He advocated unshackling public sector banks to face up to the competition.

As a part of the clean-up exercise, Rajan laid a strong foundation for identifying stressed assets, providing for them and eventually tackling the stressed assets. In a speech in 2016, he comprehensively laid his vision for resolving the stress in the banking system – possibly the most comprehensive speech where he identified the sources of distress and the principles of cleaning up with the role of the regulator clearly charted. He also articulated clearly the approach that RBI took during his tenure.

If we were to look at the speeches of Rajan, we would generally find a couple of speeches on each of the functions of RBI and more than half of the speeches dedicated to either the internal management of RBI or aspects beyond the core functioning of RBI. In case of his predecessors, there was a greater engagement on the thematic issues and some deep connection with thoughts on the evolutionary process of the institution. In Rajan's case we found that the institutional thought process – which lent itself into policy analysis was quite divorced from the individual's intellectual moorings.

Urjit Patel: Brevity and Focus

Urjit Patel was unlike any other Governor in how he took to his job. He rarely made public appearances and had very few speeches. Even during the customary press briefing after an event or after the Monetary Policy Committee meeting, he would usually make a brief statement and let the other officials – Deputy Governors and sometimes Executive Directors do most of the talking. He would routinely pass the questions directed at him to a Deputy in charge of the subject matter.

However, Urjit Patel was known for two aspects – the implementation of his own report on the Monetary Policy Framework through the Monetary Policy Committee and also for trying to clean up the banking system. In this regard, he continued the work of Rajan with greater gusto. We did not find much of an articulation on other matters. His book "Overdraft: Saving the Indian Saver" is not exactly a collection of his speeches but draws from all the speeches during his tenure and a bit beyond. The book essentially made a point about what was wrong with the banking system and how it was intertwined with interests beyond both banks and the regulator.

His tenure looked like a valiant fight at cleaning up the banking system. He had identified 9 'R's: Recognise the reality; Record; Report; Recovery and then Resolution; Reinforced Resolution; Recapitalisation; Reset and Ringfence; and Reform. While there were some speeches about agricultural credit, loan waivers and policies for a financialised world, his focus was completely and narrowly on the clean-up of the banks. We have not found such a single-minded focus from a Governor in his utterances both during and after his tenure.

There were other pressures on Patel during his tenure – he had to preside over a controversial demonetisation exercise in the early part of his tenure and part with a substantial part of the reserves of the RBI as dividend to the government during the later part of his career. Both events put tremendous pressure on his image and his credibility to stand up to the autonomy of the RBI. However, he eventually resigned on the issue of resolution of bad loans.

It would be too simplistic to reduce his resignation too narrowly and attributing it to differences on issues pertaining to resolution of bad loans. The bad loans as an issue had to be elevated to a larger intellectual level of argument. While Patel did not provide that argument explicitly in the book, it was provided by Viral Acharya, his Deputy Governor, whose tenure significantly overlapped with Patel. Acharya argued that Fiscal Dominance trumped the financial sector. While making the argument of trying to restore financial stability, he made this point about the exit of Patel: *"Nevertheless, attempts to alter the governance structure of the RBI to institutionalise such outcomes in future would have meant crossing the Rubicon and had to be foiled. As a result, the RBI lost its Governor on the altar of financial stability"* (Acharya, 2020, pp. xxviii).

Viral Acharya: Articulating the unsaid

The tenure of Viral Acharya, Deputy Governor in charge of monetary policy, significantly overlapped with Governor Patel. Acharya published a book of his speeches, "Quest for Restoring Financial Stability in India" where he articulated many issues with which the RBI was engaged. Interestingly, no other Deputy Governor published their speeches. Acharya, like his Governor Urjit Patel, resigned before his tenure was over. It was a matter of sheer coincidence that the books of Patel and Acharya hit the markets on the same day. The reason why we indicated that Acharya was articulating the unsaid was to highlight the intellectual contribution of Acharya to the discourse as an integral part of the team at the RBI. It is evident in his acknowledgements in the book as well as in a controversial (and famous) AD Shroff Memorial Lecture where he had argued for the autonomy of the Central bank and concluded: "*Governments that do not respect a central bank's independence will sooner or later incur the wrath of the financial markets, ignite economic fire and come to rue the day they undermined an important regulatory institution* (pp.295)" (Acharya, 2020). In this particular speech, Acharya acknowledged Patel for inputs and credited Patel with the very idea of the speech. Therefore, it is important to look at Acharya's speeches in tandem with those of Patel.

Acharya's book discusses issues pertaining to the external sector, the monetary policy and its transmission, and the Central Bank's autonomy. However, the most compulsive arguments in eight of the seventeen speeches collected in the volume related to banking and in particular, they were about resolving the NPA framework.

During the tenure of Patel and Acharya, they picked up the baton from Rajan, who had laid the larger argument and framework for reform of the banking system. They focused on one significant sticky issue of NPAs and a framework for resolution in the banking system. The larger objective was in insulating the banking system from the fiscal ill effects. That they chose to do this using something as mundane as NPAs was interesting. However, this was a vital part that looked like an internal management reform, but that reform could not happen unless there were some systemic changes about the resolution mechanism – particularly pertaining to the bankruptcy code. A stringent implementation of the norms would put the banks under the Prompt Corrective Action framework freezing incremental lending, thereby insulating the banks from what is now famously termed as "phone banking".

Putting the stressed corporations through the bankruptcy code and preventing ex-ante promoters from the bidding process addressed the more significant issue of cronyism; and setting up a "bad bank" would clean up the balance sheets of the host banks and give a focus to the resolution of the stressed assets. This would naturally lead to questions of (a) autonomy of the state-owned banks; (b) governance reform through fit-and-proper boards, and (c) adequate capitalisation based on merit, forcing the State to either disinvest or find resources to be compliant with the internationally determined capital norms. So, the evangelical approach to stressed asset resolution possibly anticipated a much larger impact.

All the eight speeches delivered by Acharya are broadly on this theme: looking at resolving the stressed assets, restoring the health of public sector banks, creating a public credit registry, and talking about prompt corrective action. The speeches not only contain a good diagnosis of what is wrong with the Indian financial system and in particular, banking, but also has a robust framework for resolving these.

That there was a larger plan operating in this alternative route to the banking sector, and financial sector reform is evident in both Patel's presentation (2019) and in Acharya's preface to his book (2020), where they argue the creep of fiscal matters into the commercial banking and how it affects the overall ecosystem when the Chinese walls between the fiscal and monetary issues are broken down. Acharya's Preface about Fiscal Dominance gives a theoretical argument in the larger scenario of the political economy why getting an autonomous and commercially oriented – market-facing banking system and an autonomous central bank is increasingly difficult in the context of the fiscal situation which is largely under stress.

In conclusion

If we were to look at the journey of policy making at the central bank, from Reddy to Patel, we find the discourse getting more inward-looking and narrow. Reddy's leadership mostly articulated and laid out the issues and challenges at hand. His leadership was all about preparing for the eventuality – that eventuality could be the GFC as it happened, or if not, preparing for the eventuality of globalisation and opening up. Reddy's long experience in the government and the fact that he saw the balance of payments crisis first hand – possibly gave a certain amount of cautiousness. Therefore, Reddy's regime, hawkish as it was described then, prepared a solid ground for the eventual response that Subbarao could provide from a relative position of strength. In Subbarao's public discourse, we see that there is somewhat a sense of specialisation by the Governor in largely articulating the crisis and response. While the leadership provided by Subbarao also significantly focussed on financial inclusion and reform, his intellectual articulation was taken up by the crisis. The other agenda of monetary policy, inflation was largely being articulated by the Deputy Governor Gokarn and on inclusion by Deputy Governor Chakrabarty.

Rajan provided a significant change, and his brief tenure was marked by multiple initiatives. Unlike in all other regimes, one would find a lot of dynamism in the central bank and also an element of cautious risk-taking. His book of speeches is also equally diverse. While Rajan was not aggressive on reform and integration into the global economy but was happy to move towards that objective cautiously – largely on the foundation laid by Reddy and the consolidation of Subbarao, his appetite for risk and experimentation internally was quite good. In order to achieve his objectives, Rajan also saw the reason for internal reform and re-organisation. Having had the legacy of heading a committee on financial sector reform, Rajan was also keen to implement several of his recommendations and saw banking and financial institutions as integral to his reform agenda. His speeches tried to locate RBI on a much larger canvas and he pushed the frontiers.

It appears that Patel picked one agenda from Rajan, which was about the reform of the banking sector, by addressing one significant issue of stressed assets and used that as a lever for larger reforms. He, like Subbarao, allowed his Deputy Governor Viral Acharya to do most of the articulation both on reform and monetary policy.

We look at institutions and institutional history as a continuum. Systems, procedure and hierarchy ensure continuity and provide institutional memory. However, we also see some breaks in the pattern, a different articulation and worldview that comes out of the same institution when the leadership changes. Each leader defines the role they out to perform and chooses the priorities. Each leader also chooses a medium to communicate messages to the world at large. When we look at the institution from this perspective, we realise that it has not been a continuum after all.

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Radically Networked Societies: The case of the farmers' protests in India

Prateek Waghre*

Abstract

This paper analyses India's ongoing farmer protests movement through the lens of the Radically Networked Societies (RNS) framework. Building on prior RNS-based case studies, the paper contends that this movement is marked by a combination of allied and opposing RNS groups. These RNS groups are characterised by the existence of overlapping identities operating across a mix of existing and instantaneous networks coalescing around their respective common causes of opposing the three farm laws enacted by the Union government and opposing this opposition itself. The ensuing interactions result in amplifying and sustaining adjacent and opposite RNS groups. The paper concludes that the hitherto weak bonds underlying spontaneous networked movements will be supported by hardening ties based on political identities that also transcend international boundaries. This can result in sharper responses by states which may be tempered by international pressure or scrutiny in the short term. Alternatively, an increasing number of protest movements for extended periods could lead to a flattening of responses and waning levels of attention.

Keywords: Networked Movements, Protests, Counter-Mobilisation

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I. Introduction

The period since 2009 is referred to as 'the age of global mass protests' with protest movements occurring at a 'frequency, scope and size' that are historically unprecedented (Brannen, Haig, and Schmidt 2020). Between 2009 and 2019, the number of recorded anti-government protests increased at an annual average of 11.5% (ibid). Rising internet penetration combined with the availability of communication tools such as social networks, encrypted messaging services, and collaboration suites have aided in facilitating mass mobilisation with lower friction than previous decades/phases that also witnessed a surge in mass protests.

Access to these tools has altered the traditional mobilisation versus counter-mobilisation dynamics as real-time communication/coordination unconstrained by distances have drastically reduced the time to mobilise (Pai and Kotasthane 2016) through interaction over spontaneously formed networks. As a result, states that operate hierarchically have started to adapt their responses to digitally networked movements (Tufekci 2014).

This paper analyses events and public discourse surrounding mobilisation and counter-mobilisation efforts instead of seeking to study the relative merits or demerits of the three farm laws themselves. Part II introduces the concept of Radically Networked Societies (RNS), which provides a framework to analyse networked movements as groups of individuals mobilising for an immediate cause, sharing a common identity that mobilise by coordinating using networks. Part III provides a background of the discourse surrounding the farmer protests in India in response to three farm laws enacted by GoI in September 2020. Part IV applies the RNS framework to the ongoing farmer protests in India. It explores three overlapping identity groups, a combination of three groupings of existing and spontaneous networks and their role in shaping the movement.

Part V considers counter-mobilisation actions, categorised as actions taken directly by the state and efforts to shape narratives. It also identifies a counter-RNS based on an existing, predominantly online network that is supportive of most state action. Part VI explores the interaction of these identified RNS groups both among adjacent and allied RNS as well as opposing RNS. It contends that these simultaneously mobilising and expanding groups also played a part in amplifying/sustaining the opposing groups. It concludes that political identity-based networks develop more robust bonds with time and will be a feature of political discourse across shifting and transient immediate causes. Part VII lists the implications of the perennial existence of hybrid RNS on the ability to mobilise, nature of state responses. It also concludes that with many of these networks transcending borders, states' expectations to manage such movements as internal matters will conflict with greater international scrutiny.

It relies primarily on journalistic sources for two reasons. First, for the specific purpose of studying the nature of discourse, journalistic resources proved sufficient. Secondly, since the writing of this paper was contemporaneous with the events discussed, there was a paucity of academic sources that aligned with its objectives. The reliance on journalistic sources and public discourse introduces the risk that some unreported or underreported aspects may not be represented in the paper.

II. Radically Networked Societies framework

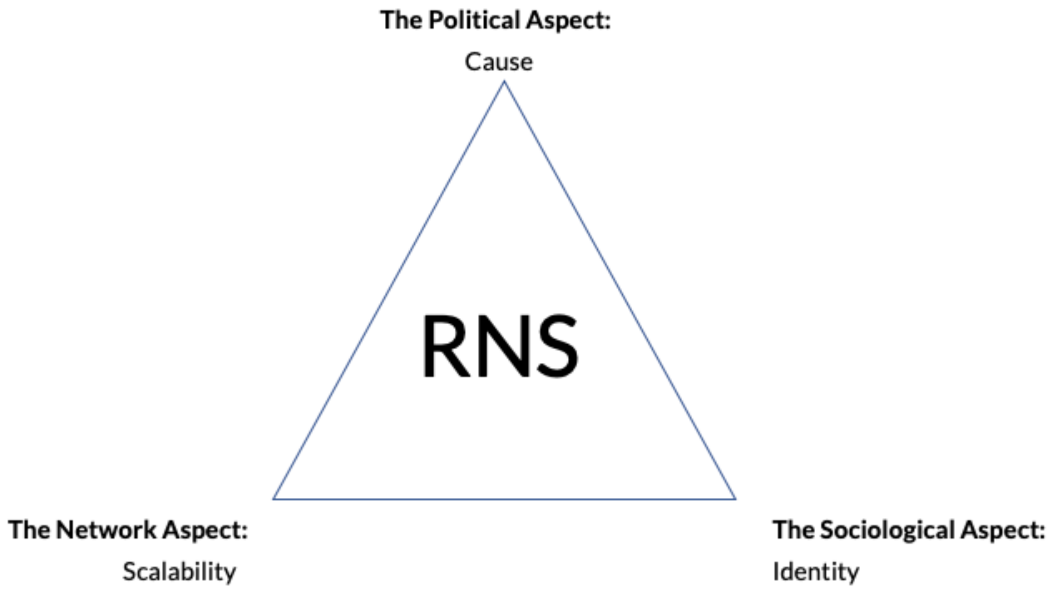
Radically Networked Societies (RNS) are defined as 'a web of connected individuals possessing an identity (real or imagined) and motivated by a 'common immediate cause' (Pai and Kotasthane 2016).

RNS' scale of operation is the defining feature. The nature of communication used to support mobilisation can result in broader reach and circumvention/evasion of traditional counter-mobilisation responses (Kewalramani and Seth 2020). Note that 'radical' refers to the networks' depth and is not a descriptor of the mobilisation/protests themselves. i.e., 'radical elements'.

RNS movements have the following common traits (ibid):

- Political Aspect: Mobilisation occurs around a common immediate cause, which serves as a rallying point and protects the sociological aspect.
- Sociological Aspect: Participants within an RNS share a common identity (real or imagined). For internal solidarity to be maintained, they go through socialisation processes such as internalising common facts/myths.
- Network Aspect: The pace and scale of mobilisation is a crucial aspect of an RNS. The political and sociological factors are dependent on the depth of the network. Here, the internet as a medium in general, and the use of social networks, encrypted messaging services, collaboration suites, etc. specifically have had a profound effect on the way that mobilisation occurs.

Figure 1. Illustration of an RNS



Source: Liberty & Security in Radically Networked Societies

Such mobilisations, when they first occur, may also lack formal/informal organisational structures/decision-making processes ('adhocracy') and a defined leader/set of leaders ('horizontalism') (Tufekci 2017). These qualities protect such movements from disruption through coercion or co-option of their leadership. However, they simultaneously introduce weaknesses such as the possibility of a 'tactical freeze' marked by the inability to shift tactics and repeatedly arrive at a consensus required for multi-step processes such as negotiations (ibid).

By limiting itself to an 'immediate cause,' the framework positions it for utility in understanding short-term mobilising and counter-mobilising efforts rather than long-term collective action.

The framework lays significant emphasis on the role of the internet within the network aspect and does not engage explicitly with factors such as invitation (Schussman and Soule 2005) to protest, organisational membership (Anderson 2020) and strong ties (Schradie 2018) in protest participation.

As currently defined, the framework considers the sociological aspect primarily through the lens of identity. Prior work has stressed the role of a single identity in participation. There is room to expand its scope to consider the role of intersectional identity (Fisher, Dow, and Ray 2017). Future work should also seek to broaden the sociological aspect to explore factors beyond identity.

This paper aims to analyse the mobilisation in response to the Union Government enacting the three farm laws and the resulting counter-mobilisation between November 2020, and March 2021, through the RNS framework's lens.

III. Background

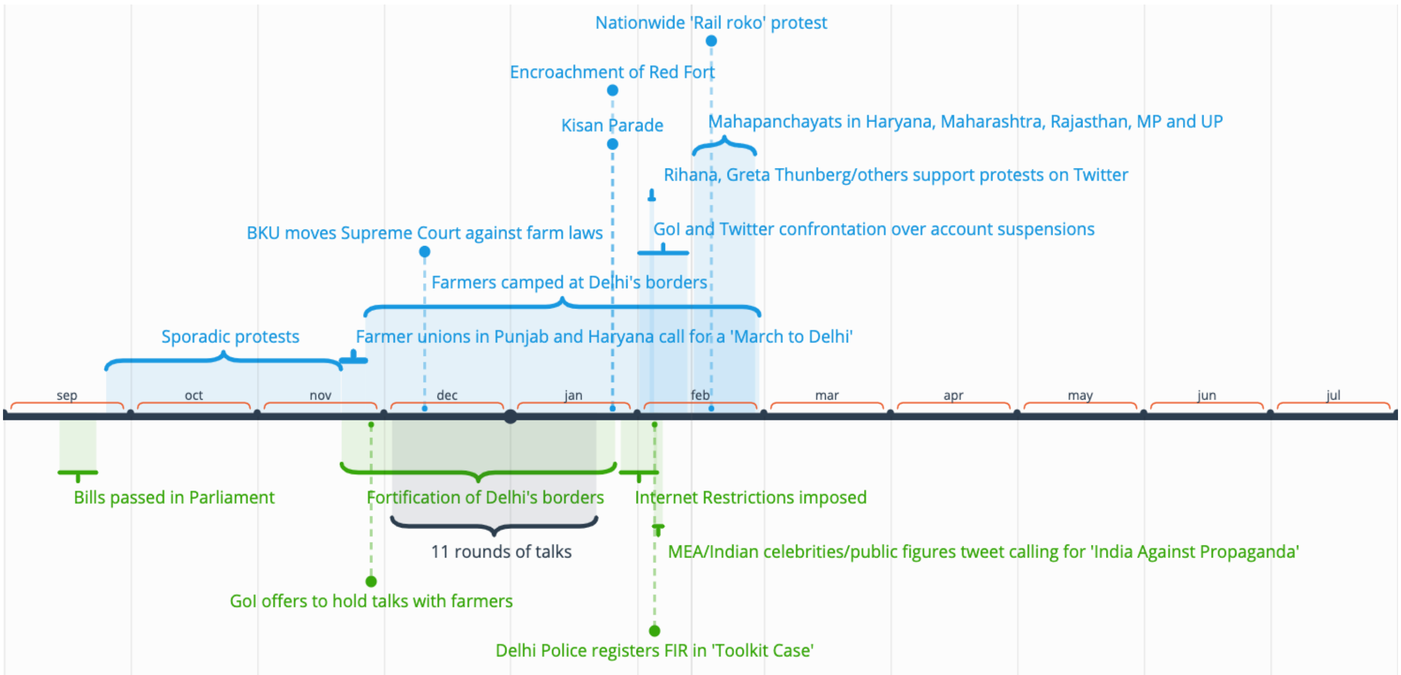
A critical analysis of the three laws at the centre of protests is outside the scope of this paper since it does not aim to explore the relative merits and demerits of the laws themselves. Nevertheless, the context surrounding their enactment is relevant to the various reactions their passage has brought forth.

The salient features of each of these laws are (PRS Legislative Research 2020):

- *The Farmers' Produce Trade and Commerce (Promotion and Facilitation) Act, 2020* will allow 'intra-state and inter-state trade of farmers' produce outside the physical premises of Agriculture Produce Marketing Committee (APMC) markets' (ibid)
- *The Farmers (Empowerment and Protection) Agreement of Price Assurance and Farm Services Act 2020* will facilitate contract farming through an agreement between a farmer and sponsor (buyer) along with instituting a three-tier dispute settlement mechanism (ibid).
- *The Essential Commodities (Amendment) Act 2020* amends the existing Essential Commodities Act to limit the powers of the Union government to regulate storage only under extraordinary circumstances (ibid).

In June 2020, the Union government promulgated three ordinances with the stated benefits of empowering farmers, a transference of risk from farmers to sponsors, attracting private sector investments to enhance supply chains, and other benefits (PIB India 2020). Reactions to the ordinances were swift and polarised, in the form of protests (The Hindu Special Correspondent 2020), criticism (Jakhar 2020) and support (Patnaik and Roy 2020). In September 2020, the ordinances were replaced by corresponding bills that were tabled and passed in Parliament under contentious circumstances (Nair 2020). Protests ensued in different parts of the country (Times of India 2020). They intensified in late November, especially after calls for a march to Delhi were supported by over 470 farm outfits (Express News Service 2020). Farmers from states around Delhi (Punjab, Haryana, Madhya Pradesh, Rajasthan and Uttar Pradesh) would march towards Delhi. In contrast, those in other states would hold protests at state and district levels (ibid). While the intensification period does coincide with harvest season for Kharif crops, initial statements by protesting farmers indicated that they were prepared for durations ranging from two (Mohammad Ghazali 2020) to six months (Singh 2020).

Figure 2. Timeline from September 2020 until March 2021



Source: Compiled by author.

Note: Blue indicates events where mobilising groups were participants; green indicates actions taken by or in support of counter-mobilising groups/GoI/state governments.

With the protests crossing the 100-day mark (Express Web Desk 2021) in early March, some key developments were the build-up on police and paramilitary forces on highways leading to Delhi (Niharika Sharma 2021); eleven rounds of talks between representatives of farmer unions and GoI between early December and late January made limited progress with the latter offering to withdraw on penalties for stubble burning and the Electricity Amendment Bill (A. Sharma 2020) as well as agreeing to suspend implementation of the laws for 18 months, (Vishwa Mohan and Kamal 2021) [whether it could actually do this was questioned] (Arpan Chaturvedi 2021)] none of which were accepted by farmer unions; after initially denying permission, a Kisan Gantantra Parade (Nikita Sharma 2021) on designated routes was allowed, however, the day was marred by clashes, violence, fatalities and the storming of the red fort (Amit Chaturvedi 2021); subsequently additional deployment of security forces was accompanied by internet restrictions. While the outbreak of violence was a significant setback, the movement has since recovered (Iftikhar 2021) with several 'Mahapanchayats' across Punjab, Haryana, Uttar Pradesh, (Tribune News Service 2021), Madhya Pradesh and West Bengal, with plans for more in Karnataka and Odisha (FPJ Web Desk 2021).

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In early February, Rihanna, Greta Thunberg and many international figures drew attention to the farmer protests in India. India's Ministry of External Affairs (MEA) reacted by labelling this propaganda (BBC News 2021), and this was followed by several Indian celebrities posting content on Twitter calling for unity and delivering the message 'India Against Propaganda' (Times of India 2021). Thunberg also initially tweeted out and then deleted a link to a shared Google Docs file containing a 'toolkit' (Pandey 2021) which sparked off the 'toolkit' investigation to identify and punish India-based collaborators of the document. This event consumed several news cycles throughout the month.

Criticisms of various forms have followed the laws in their journey from ordinances to acts. These are:

1. Introduction the bills as ordinances while the Union Parliament was not in session.
2. The passage of the bills in Parliament with inadequate discussions in less than ten days.
3. Ignoring opposition demands in the Rajya Sabha for sending the bills to a select committee and a tallied vote in favour of a vote by voice.
4. Perception amongst farmers that the laws will result in an erosion of state-backed benefits and security leading to a concentration of power in the hands of private industry
5. Contention that the bills represented an overreach by the Union government for legislation that should have been in the domain of state governments.

Thus, the demands of the protesting farmer groups included a repeal of the three laws; legal safeguards that minimum support prices would not be withdrawn and maintained at levels recommended by the Swaminathan Panel Report; withdrawal of the Electricity (Amendment) Bill (FPJ Web Desk 2020). Other demands were reducing diesel prices, an end to fines and prison sentences for stubble burning (ibid). Additional demands pertaining to the release of political prisoners have also been made (Mahaprashasta 2020). Meanwhile, the Union government has remained steadfast in its claim over the question of authority to legislate on these subjects and made the case that the laws will lead to beneficial outcomes. It has also characterised any opposition to the laws across a spectrum ranging from ill-informed, motivated to outright malicious, even stating in the Parliament that specific flaws with the bills have not been raised (ANI 2021b). Supporters of the reforms have likened them to '90s era liberalisation' efforts.

These fundamental disagreements over the legitimacy of the laws, the means employed to ensure their passage, their stated benefits versus anticipated outcomes have resulted in a series of mobilisation and counter-mobilisation efforts to further each sides objectives and narratives. In turn, these efforts have had the dual effects of supporting adjacent groups and galvanising opposing groups. Subsequent sections of the paper will explore these dynamics.

IV. The movement through the RNS framework

The mobilisation in opposition to the three farm laws took the form of overlapping RNS composed of different identities (real or imagined) and networks. These different identities were not always distinct from one another. Each of these RNS interacted within themselves and influenced other RNS that were a part of the same movement.

The traits, according to the RNS framework were:

o *Political Aspect/ Immediate Cause:* Opposition to the Union government enacting the three farm laws is the *immediate* and overarching cause for the movement. There are two broad categories the nature of opposition can be classified into, resulting in causes within the overarching immediate cause. First, opposition to the content of the laws or the forecasted outcomes, with the latter playing a more prominent role, e.g., weakening governmental support for farmers, withdrawal of sops such as minimum support prices (MSPs), dismantling APMCs, thereby strengthening private corporations resulting in bargaining power imbalances. The second category is how the bills were enacted. There is scope to further identify sub-causes within this. Based on how the bills were passed in Parliament under controversial circumstances, limited discussions and refusals to refer the bills to committees. Further, the opposition was also based on the perception that GoI did not make the necessary efforts to bring stakeholders such as farmer unions and state governments on board. Groups/individuals mobilising based on the second cause may have supported the intentions behind reforms themselves but were not in favour of the means used to push them through.

o *Sociological Aspect/Identity:* Three broad identity groups (real or imagined) can be identified based on prevalent public discourse. First, an agrarian/farmer lifestyle identity that is rooted in 'new agrarian politics', past farmer agitations (Bentall and Corbridge 1996) and the idea of the farmer as 'annadata' (provider). This pertains to a phenomenon that is often referred to in the press as 'Bharat versus India'. Its manifestation specific to this movement was visible in a documentary film about the protests where an interviewee farmer expressed opposition to 'Digital India' (The Lallantop 2020) while voicing his frustration with the government. Multiple references have also been made to participants having the required patience (NH Political Bureau 2020) for a long struggle because of their farming background (Financial Times 2021). This identity group includes farmers and farming-adjacent occupations, e.g., labourers, and 'arthiyas'. It is further supported by an assumed adversarial relationship between 'small farmers' and 'large corporations'.

Multiple identity types also overlapped across the group. Both religious and caste-based identities played a role in the mobilisation among participants from Sikh and Jat communities (Anand 2020). Notably, the Dalit community, which is heavily represented among farm labourers, has also mobilised in favour of the protests (PTI 2021c). Further, the intensity of the protests in their nascent stages in Punjab and Haryana also lent a regional identity going back to the 'green revolution' where farmers of these states were credited with providing food for the rest of the country (Frayer 2021). While present throughout the movement, gender-based identities were in focus sporadically - in the early stages (Bakshi 2020) and around International Women's Day (PTI 2021d).

Second, their progeny, who may no longer be directly involved in farming as an occupation, was also a visible identity group through the protests. This group transcended international borders as many members of the Indian diaspora also mobilised over the internet, relying heavily on social media platforms. There was also a basis in religious and regional identities as Sikh and Punjabi communities played an active role. An illustrative example of this was the observed trend among Sikh/Punjabi origin entertainers of posting content aligning themselves with the protests in the aftermath of singer Rihanna's tweet calling attention to the movement (Mishra et al. 2021). Note that progeny still in farming and farming-adjacent professions would be constituents of the first identity group.

The third identity relates to individuals/groups/entities who self-identify as 'Liberal'. This label is often attributed/misattributed in contemporary discourse. However, in this paper, the term is not meant as a complementary or pejorative descriptor. It aims to capture a broad identity-type that classifies its own political identity as favouring individual rights and social justice in opposition to what it considers state support for majoritarianism, exclusion, chauvinism, and discrimination. This identity group broadened the support base for the movement. At first, limited to India and those outside India with an active interest in Indian affairs, it then expanded to a more global audience, significantly aided by a series of tweets from Rihanna, Greta Thunberg, and others.

o *Network Aspect/Scalability:* The network aspect of the movement can be considered based on three groupings:

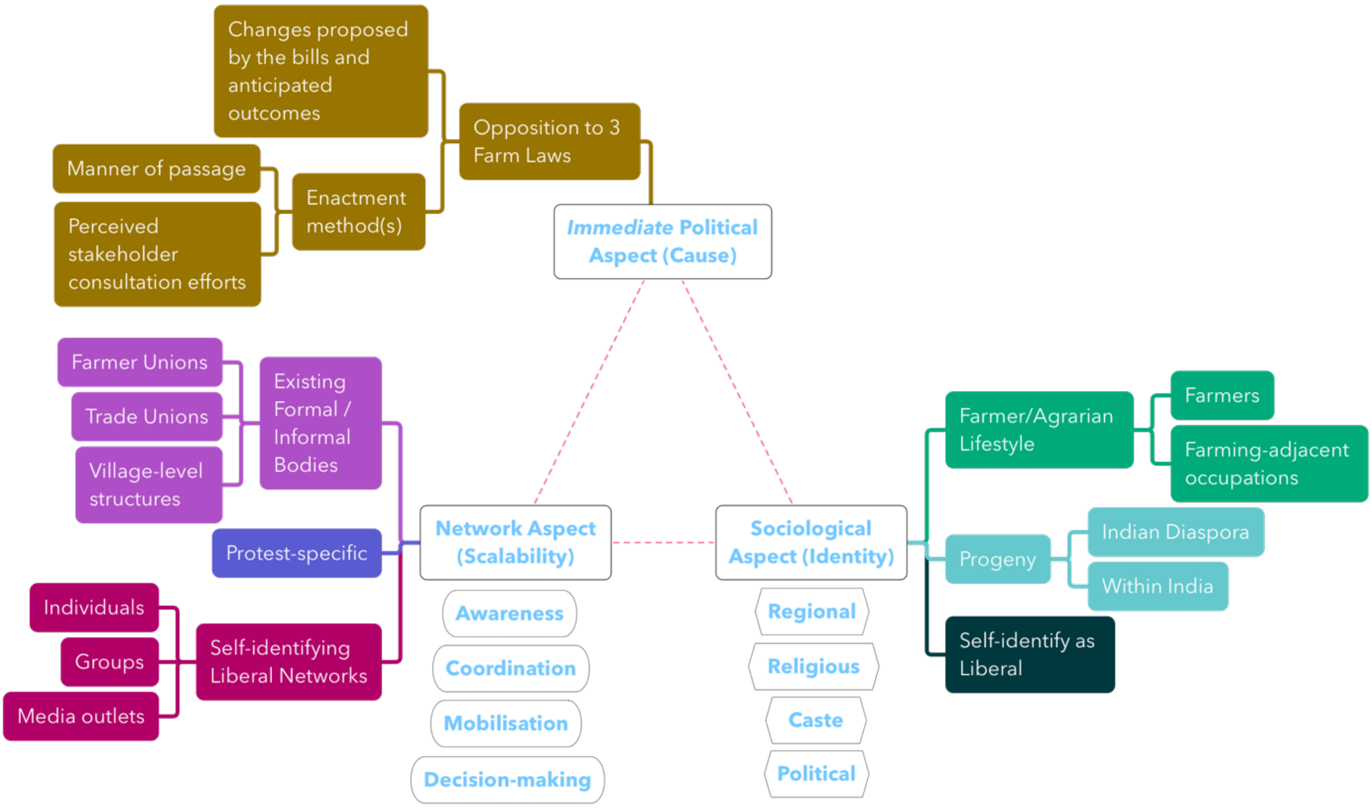
First, existing formal, semi-formal, and informal organisations/unions have constituted the core network infrastructure. The 'All India Kisan Sangharsh Committee' (AIKSC) was formed in 2017 and lists around 150 member organisations across the country. Many constituent organisations were functioning before 2017 and can be considered to have organisational capacity, a hierarchical structure and selected or elected leadership. Such unions have also played roles in electoral politics in the past (MN 2021). Protest instruments such as 'rasta roko' (roadblocks), 'rail roko' (railway blockades) and mobilisation events like 'mahapanchayats' have all been used in farmer agitations of the past. Peripheral groups such as transporters that expressed support for the movement also communicated these through existing/established representative bodies (Tribune News Service 2020). Efforts to raise awareness and communication have involved posting updates through social media properties (handles/pages) in multiple formats (text-based, live-video, etc.) and addressing regular press conferences.

Second, protest-specific responses ranging from the formation of new umbrella organisations to internet-supported mobilisation. The 'Samyukta Kisan Morcha' (SKM) is an umbrella group formed in November 2020 with 40 farmer unions. The 'Kisan Ekta Morcha' family of social media properties created in December 2020 across platforms such as Twitter, Facebook, Instagram, and YouTube functioned as an 'IT cell' of the movement (Sircar 2020). Volunteer initiated efforts to provide news to participants, like Trolley Times (print and digital) (Ramani 2020), or fact-checking misleading information, like tractor2twitter (Vibhor Mohan 2021) have also relied on the internet and social media properties. Participants also used encrypted messaging platforms such as Whatsapp to communicate with families that stayed behind in their respective villages (Sarfaraz 2021). By and large, the networks covered four functions – awareness, mobilisation, coordination and decision-making.

Third, an existing ecosystem of groups/individuals that self-identify as liberals. This network is held together by 'liberal bonds'. The bonds within this grouping can vary from weak to strong in terms of strength and have formed over years of iterative engagement on and off social media platforms. Nevertheless, interaction over social media platforms is essential in this network's width and mobilising potential. Boundaries of this network are not well-defined as participants can voice support or exit depending on causes, though they are hardening over time.

Thus, the network aspect relied on a hybrid model encapsulating interactions between online and offline organisational networks (Anderson 2020), and responses by existing networks/organisations and protest-specific responses/organisations.

Figure 3. Superimposing multiple identities and networks on the RNS framework



Source: Illustrated by the author

V. Opposing the Opposition

Responses to the opposition against the three farm laws can be classified into two categories, direct actions taken by the state and narrative-shaping responses. While the Union Government and representatives of the farmer unions are negotiating, broadly, the opposition to the movement has taken the shape of discrediting and increasing costs of participation in and supporting it.

Direct actions taken by the state: The primary actors in this category are internal security forces such as police and paramilitary forces, and administration of the departments of Home Affairs at Union and State (for affected states) levels. Police and paramilitary forces have responded to road-blockades/mobilisation/marches by farmers with their own blockades. Barbed-wire fences, roadblocks, heavy vehicles, trenches have been utilised at various state borders around Delhi (Rahar 2020). Within Delhi, local buses were also deployed as roadblocks (A. Srivastava 2021). Law enforcement agencies even used tear gas and water cannons at various times (Niharika Sharma 2021).

Apart from physical obstruction, the police denied permission (Express News Service 2021a) for planned marches by farmer unions in different parts of the country (Jagran News Desk 2021). Many of these responses were used even before a splinter-group hoisted flags at the Red Fort in New Delhi on January 26, 2021, and a temporary escalation of violence (Niharika Sharma 2021). The Uttar Pradesh state administration has imposed Section 144 for extended durations (Joseph 2021) (IANS 2020). Inaction, too, may have been deliberate in some instances where members of the police chose not to intervene as counter-mobilising non-state actors engaged on the ground (Zubair and Sinha 2021).

Authorities also imposed Internet Shutdowns in parts of Delhi [Union Home Ministry] (India Today Web Desk 2021a) and large parts of Haryana [Haryana state government] (Agrawal 2021) after January 26, 2021, with the stated intention of maintaining public order. This response tactic was employed sparingly since many international celebrities drew attention to the movement through social media posts. Though a causal link cannot be established, internet restrictions in other parts of the country were revoked (Ehsan 2021) as levels of scrutiny and criticism grew in the immediate aftermath.

The Union Government even directed social media platforms to take down content and suspend accounts. This instruction led to a public tussle with Twitter, during which accounts belonging to activists, politicians, journalists and press publications were also affected (Biswas 2021). The relevant sections of the Information Technology Act can be invoked with a confidentiality requirement, so a complete list of the accounts/content targeted is not available. Twitter has made some of this information on the Lumen Database. However, the lists provided did not include the handles of accounts like The Caravan magazine, which were known to be affected (Deep 2021). Media reports have attributed claims that action was taken against 97% of the accounts to unnamed sources within GoI (Doval 2021). Meanwhile, YouTube too reportedly took action against content based on legal requests by GoI (India Today Web Desk 2021b) (Kaur 2021).

Narrative-shaping: A non-exhaustive, paraphrased set of narrative pegs used to discredit the protests follow: Farmers are being misled (Tewary 2020); only farmers from certain regions are protesting (Zee Media Bureau 2021b); only wealthy farmers are protesting; middlemen are driving protests (Punj 2021); the presence of pizza at some protests (Times Now Digital 2021); farmer union leaders are 'unelected' (Agarwal 2021); donation of foot massagers by a foreign entity (RVCJ News 2020); the protests are being financed/supported and encouraged by Sikh separatist groups (Shukla 2021); protestors are rioters who want to vandalise public property (PTI 2021a); many individuals present at protest sites have been hired for a fee (ANI 2021a); members of one minority community are posing as members of another minority community and participating in the protests (Webqoof 2020); Rihanna, Greta Thunberg, et al. were paid to tweet in support of the protests (News18.COM 2021a); activists are colluding with foreigners to 'break the country' (Zee Media Bureau 2021a).

Apart from raising suspicions about the movement's goals, in some instances, the narratives went further and advocated for violent intervention by the police. Examples of these include calling on the Delhi Police to baton-charge and even shoot protestors (BuzzFeed News 2021). Organs of the state have actively engaged in narrative-framing attempts too. At press conferences, Union Cabinet ministers have alluded to conspiracies (H. Sharma and Singh 2020) and prodded the media to determine who was 'behind the protests' (PTI 2020b). The Ministry of External Affairs reacted sharply to tweets by international celebrities and activists drawing attention to the protests (The Hindu Special Correspondent 2021a). Further, while investigating a collaborative document containing calls-to-action, the Delhi Police have cast several aspersions regarding the 'motives' behind creating it and also sought to link it to on-the-ground violence on January 26 2021 (Livemint 2021).

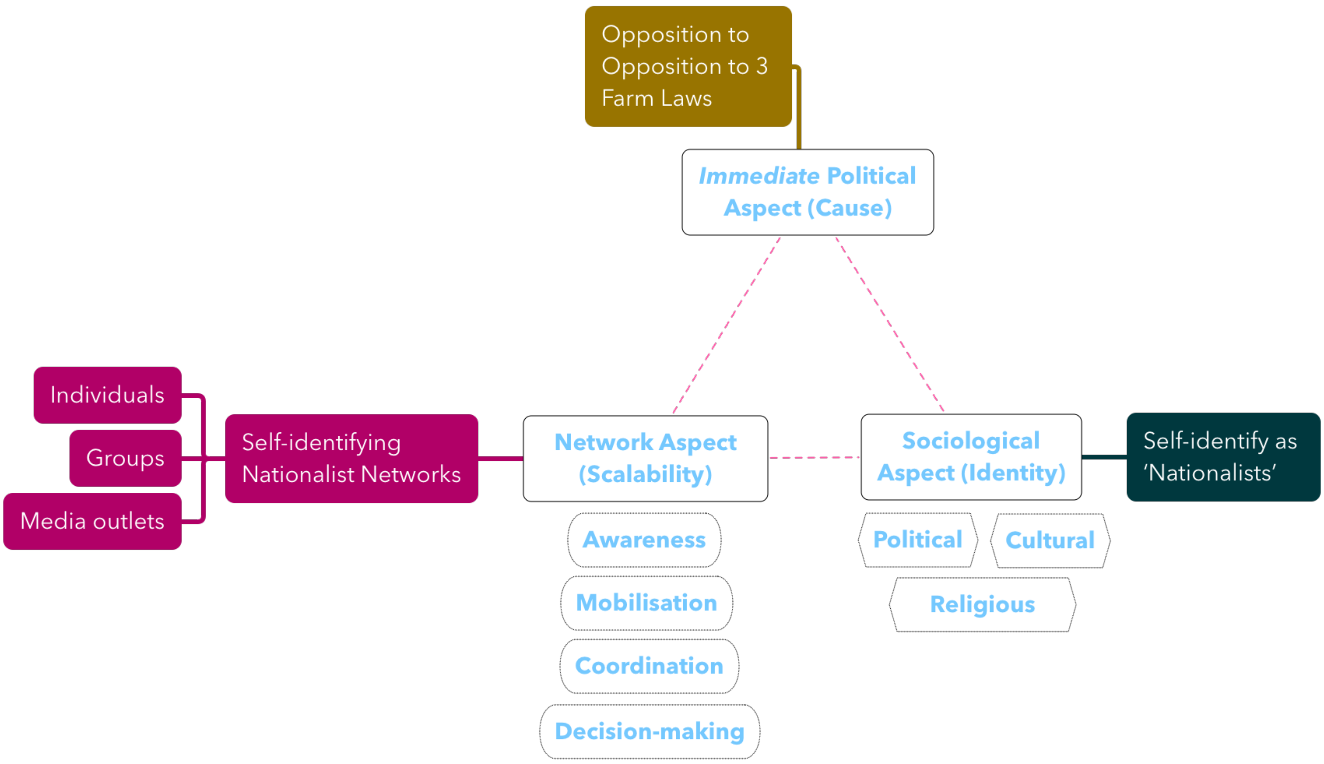
Efforts by GoI to allay concerns about forecasted outcomes by pointing out that the laws do not advocate for dismantling APMCs or sunsetting the MSP regime have met with limited success.

Due to the overlapping nature of narrative amplification mechanics, a clear distinction between state and non-state actors in this regard is not feasible. Additionally, statements made by politicians belonging to political parties but not office-bearers in any of the organs of the state are in a grey area between state and non-state efforts. Similarly, influencers from the right-wing social media ecosystem often receive engagement from different actors, including politicians and publications, over and above their followers.

Messages advocating these narratives spread through social media platforms, encrypted messaging services, mainstream television and print news outlets, digital news outlets, including far-right and pink-slime portals. This cross-medium interaction and amplification are not unique to these counter mobilisation efforts, however.

A counter-RNS: Drawing on the RNS-framework, the non-state participants can be classified as a radically networked society as well. It is populated by individuals/groups/entities that self-identify (sociological aspect) as 'nationalists' (political identity) and 'guardians of Indian Culture' (cultural identity) with the immediate common goal of opposing the opposition to the three farm laws (political aspect). An argument can be made about the role of a religious identity which is often positioned as overlapping heavily with the political and cultural identities.

Figure 4. Illustration of the counter-RNS



Source: Illustrated by the author

Qualitatively, the bonds within these networks appear to be stronger than those within the 'self-identifying as liberal' equivalents. These networks' boundaries are also more well defined even as the immediate causes they coalesce around shift periodically, often even on a day-to-day basis. Here too, various existing networks are in place that have evolved through years of narrative amplification and shaping activities extending across online and offline spaces. Again, interaction and coordination over digital platforms are crucial to their operations. New participants flocking to this RNS enter a positive feedback loop of information consumption. In limited cases, this participation can also amplify their messages or the new participants themselves if they co-opt existing narratives.

The 'toolkit' investigation exemplifies these overlapping responses (actions by the state and narrative shaping). The Delhi Police responded by registering an FIR for sedition against the toolkit creators (hindustantimes.com 2021). It sought the assistance of Google and social media companies (Express News

Service 2021b), and reports suggest that at least some of them did comply (Klein 2021). Three India-based activists, Disha Ravi, Nikita Jacob and Shantanu, were eventually identified (News18.COM 2021b). Ravi was even arrested from her residence in Bengaluru by the Delhi Police (ibid). While Delhi Police's narrative shaping efforts are already covered in this section, these developments also presented an opportunity for the counter-RNS to escalate their narrative shaping efforts. False claims about Ravi surfaced and were shared on social media platforms (Alphonso 2021b). News outlets repeated and amplified claims of a conspiracy against India (R. K. Srivastava 2021).

VI. Effects of Overlapping RNS

Parts IV and V have demonstrated the presence of overlapping identities, networks and opposing RNS' drawing from the public discourse surrounding the three farm laws. Elementary insights from systems theory suggest that interaction between systems results in reinforcing or balancing loops (Meadows 2008). Using the same theoretical concept, this section explores overlapping identities and networks across the various RNS and their potential impact on the movement. As the idea of overlapping RNS implies and is evident from the rest of the section, it is not always feasible to draw clear distinctions between them while observing these interactions. The effects of interaction among adjacent RNS and across opposing RNS co-occurred as existing networks sprang into action and subsequently expanded.

Interaction among adjacent RNS: The overlap of liberal (political), Sikh (religious) and Punjabi (religious) identities appear to have played a significant role in mobilising the large sections of the Indian diaspora. The coming together of diaspora groups and non-Indian origin self-identifying liberal identities in the US also seem to have led to an 'internationalisation' of the movement exemplified by protest events around the world, and even the adoption and subsequent import of slogans such as 'No Farmers, no food' and 'No Farmers, no food, no future' (The Quint 2020).

The significant presence of the Sikh identity could have played a role in the interventions by politicians whose constituencies reflected this identity, such as statements by Canadian PM Justin Trudeau (Bhattacharyya 2020); Leicester East MP Claudia Webbe (India Today Web Desk 2021c) or; the UK parliament's discussion on the farm laws (The Hindu Special Correspondent 2021b). A letter signed by 36 MPs in the UK noted that 'issue of particular concern to Sikhs in the UK and those linked to the Punjab' (Sonwalkar 2020). The Punjabi-Sikh identity was also a factor among Indian-origin public figures who mobilised in favour of the farmers' movement after Rihanna's tweet (Mishra et al., 2021). This identity group may have also led to the involvement of Yasmin Qureshi [Manchester], Gurratan Singh [Ontario] and Jim Costa [California], whose constituencies have a significant Punjabi population (ibid).

Within Indian political discourse, the liberal (political) identity also coalesced around the movement in support. First, it provided amplification for the cause and subsequently sought to defend it from counter-RNS. Its direct influences may have also led to the inclusion of demands to free political prisoners by farmer groups (R. M. Chaturvedi 2020). As referenced earlier, this broad and loose identity group does transcend national borders. Multiple international celebrities' decision to speak out in favour of the farmers can also be attributed to their identification with a liberal brand of personal politics. For all the questions raised about Rihanna's motivation for choosing to post about the movement (Bhardwaj 2021), it was unlikely to be an action she would have taken had it not been in sync with aspects of her political and social activism (Mokoena 2015), even if considered performative. Notably, the news article she posted touched upon both the farmer movement and the response of the Indian state in the form of imposing restrictions on the internet.

Statements by farmer unions/groups in the United States of America can be considered a combination of the amplification provided by the liberal identity and an American agrarian identity (IANS 2021). While generally distinct from the Indian agrarian identity, the latter has similarities, such as an adversarial stance towards 'large corporations' (Pain 2021). Within India, the agrarian identity did unify groups across class, caste and religious identities in the form of farmer-labourer unity, Jat-Muslim unity, and others. (Sinha 2020) (MN 2021); regional identities of farmers from Punjab and Haryana who compete for water (PTI 2020a); occupations where farmers are believed to be at odds with 'arthiyas' (PNS 2020).

Interaction across opposing RNS: Since mobilising RNS and counter-RNS formed concurrently, it may not be possible to establish a chronology of interactions. However, various instances show that cross-RNS interaction also contributed to the expansion of the different RNS involved. As narratives of the movement being composed of 'radical' and 'violent' 'elements' by presenting false or out-of-context information spread, members of the self-identifying liberal networks appeared to consolidate their support for the movement. Members of these networks include individuals, media outlets, and public intellectuals too. The reactions to narratives about the movement being led by 'misled farmers', 'wealthy farmers', and middlemen followed similar cycles. The narrative about separatist forces was used as evidence of progressive 'other'isation of minority groups. Since this was also an attack on the Sikh identity, it possibly contributed to higher participation levels among diaspora groups that shared this identity.

The mobilising networks' expansion was met with growing counter-RNS across individuals, public figures, influencers, and media outlets. The response and simultaneous narrative shaping activities spread over social media posts, television news debates and op-ed pages. The inclusion of a demand to release political prisoner served as an indication of a 'leftist conspiracy'. Moreover, climate activists' supporting a movement whose demands included the repeal of an anti-pollution ordinance was used to highlight inconsistencies among the movement's activists and supporters. International celebrities tweeting about the farmer protests within a short time were seen as signs of coordination and a conspiracy, and an interference in internal affairs. A swift counter-mobilisation involving several Indian celebrities positioned using similar freshly minted hashtags as opposition to 'propaganda' followed.

Immediately, mobilising groups used this to point out that an 'obviously coordinated effort' was employed to counter what was a 'perceived coordinated exercise' and chastised those who participated. On January 26, 2020, an outbreak of violence led to competing narratives of injured protests versus injured police forces. Opposing RNS called for violent state action (Kaul 2021) accompanied by references (both veiled and overt) to anti-minority riots (Alphonso 2021a) from the past and accused the state of planning a genocide (Sakshi Post 2021). Mobilising groups (local and international) responded to perceived negative media coverage by instituting their information dissemination, fact-checking mechanisms (Yadav 2021).

Though not exhaustive, these instances indicate a common theme of interpreting (whether genuine or with malice) opposing RNS actions as an attack (whether real or imagined), leading to entrenchment and expansion of the respective RNS.

Role of existing networks: The presence of existing networks on the mobilising (farmer groups, self-identifying liberal networks) and the counter-mobilising (self-identifying nationalist) have significantly shaped the movement. The effects may have varied across aspects such as raising awareness, coordination, execution and decision-making.

Formal/informal/semi-formal farmer unions and organisations have played a vital role in the movement. Some of these umbrella groups were formed earlier [AIKSC], while some were created specifically for this movement [SKM]. Several groups of various sizes constituted these umbrella groups. The constituent groups already had some hierarchical structures in place. Thus, the larger spontaneous movement had a core with some hierarchical elements, which meant that some organisational capacity existed, unlike purely spontaneous mobilisations. The imposition of internet shutdowns did not obstruct the movement as much as expected, implying coordination and execution capacities were not adequately disrupted.

Similarly, organising 'mahapanchayats' in different parts of the country also speak to coordination and execution nous developed during past agitations. Advance communication of protest plans, formal representatives at negotiations with government representatives, limited splintering indicate that decision-making capabilities have continued to function. Typically, such hierarchies expose networked movements to infighting risks, splintering among factions, and governments co-opting some leaders. So far, the farm bill opposition movement has succeeded in limiting these. Crucially, the existence of these capacities could have helped the movement stave of 'tactical freeze' – inability to change course after the initial expansion phase (Tufekci 2017). Farmer union leaders are looking to build on this by announcing their intentions to march to the Parliament (PTI 2021b) and continue the movement in West Bengal since political leaders are focused on assembly elections in the state (PTI 2021e).

Existing networks cleaved along political identities amplified and supported the movement and state responses based on their alignment. Like the anti-CAA protests, this played out across social media posts and live streams by framing news stories, television news debates, and op-ed pages. Importantly, these networks are perennial with quickly changing short-term causes under an overarching political alignment. While not strictly hierarchical, each of these networks is characterised by the co-existence of accounts with large follower bases (typically political leaders, public figures, media professionals/journalists and influencers) followed by layers of smaller accounts with successively reducing levels of influence or follower counts. In most cases, these are directly proportional though not always. They engage in daily cross-network tactical narrative battles, often combining organic and inorganic/automated/inauthentic activity.

VII. Implications

Prior analyses of networked movements based on the RNS framework have identified the challenges associated with the liberty versus security trade-off and hierarchical government structures' ability to respond to rapidly mobilising groups (Pai and Kotasthane 2016) (Kewalramani and Seth 2020). Expanding this framework's use to look at networked movements as composed of multiple, overlapping radically networked societies brings up additional challenges for the state and society to address.

The combination of recurring mass protests and expanding networks and alliances over time can result in deeper bonds and improved organisational capacities. With successive iterations, the network movements will be able to build greater resilience to inherent issues such as 'tactical freeze', commonly deployed state responses and improve.

Faced with this increasing resilience, states could further escalate existing response pathways such as use-of-force and exemplary, punitive action against participants of networked movements to deter broader and future participation. In the specific case of the farmers' protests, so far, this has taken the form of counter-blockades using tactics such as digging trenches, installing barbed wire fences, deploying heavy vehicles like public transport buses or construction equipment as barricades. Any attempts by mobilising groups to circumvent can be portrayed as aggressive behaviour and, therefore, a pretext for the use of force.

In addition, states will seek to establish greater control over digital spaces of interaction through regulation and surveillance. Internet restrictions in the capital adjoining areas, the public face-off with Twitter, legal requests to YouTube, Google, Zoom, Instagram (specifically in the 'toolkit' investigation) demonstrate this. Hybrid counter-mobilisation (online and on-the-ground) by the state and individuals/groups/entities aligned is also likely to be encouraged. This was evident in the overlapping use of narrative pegs among ministers, members of the BJP and participants of the counter-RNS and instances of police indifference to on-the-ground actions by the counter-RNS.

The existing political identity-based networks are always 'ready-to-go' and quickly enter into a state of conflict comprised of many simultaneously occurring engagements ranging from well-reasoned, good-faith arguments to whataboutery, ad hominem attacks, sealioning, overstating or minimising perceived harms and outright fabrication/falsification of information. These conflicts often overlap resulting in perpetual cycles of mobilisation and counter-mobilisation even as immediate causes shift.

Governments will also have to continuously straddle expectations for fast and decisive action with the essential democratic practice of consensus building. Once networked movements take root, the continuing ossification of political identity-based networks will result in diminishing incentives for negotiation/compromise.

With the identity-based networks transcending international boundaries due to various interacting identity-types and global information flows enabled in particular by social media platforms, encrypted messaging services, such networked protests immediately capture attention across the world. Thus, states should expect greater scrutiny and sharper criticism of their response to it, as well as their track record of dealing with similar movements in the past. As a result, the costs of relying on attrition over time will increase. Conversely, repeated eruptions of protests with short/no intervals over time can also lead to a flattening of global responses and attention. In which case, the costs of relying on attrition may gradually decrease.

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RCTs for policy in India - Ethical Considerations, Methodological Concerns and Alternative Approaches

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Abstract

Randomised controlled trials (RCTs) have become a popular methodological choice for policy analysis in the developing world. This paper describes the various ethical and methodological considerations when choosing to adopt RCTs for policy decisions through a review of literature in multiple disciplines. Unlike previous critical analysis of RCTs, this paper contextualises its critique to India, a country that has been the site of well over a hundred RCTs. Through illustrations of recent Indian policy RCTs on corruption, livelihoods, Public Distribution System, conflict and others, the paper raises concern about violations of ethical requirements like equipoise, informed consent, data harms, human costs to research participants and research staff. The paper discusses methodological limitations of RCTs for Indian policy making including heterogeneity, researcher effects, generalisability, policy-relevant unobserved mechanisms and other socio-political considerations. The paper ends with a description of alternative approaches and a simple checklist for practitioners, specifically policy makers, to assess the feasibility of RCTs for informing decision making in their context.

Keywords: Randomised Controlled Trials, Research ethics, Methodology, Evaluations, Observational studies, Quasi-experimental Research

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I. Motivation

The announcement of the 2019 Nobel Prize in Economic Sciences[2] re-sparked debates about the methodological and ethical foundations of Randomised Controlled Trials (RCTs). This debate brought to the forefront a growing worry that RCTs are crowding out all other approaches (Bédécarrats et al., 2019). While the push for quantitative empiricism and the enthusiastic adoption of methods from natural sciences is not a new trend, it has led to the creation of an implied 'hierarchy of methodologies' in development economics. Here, RCTs are seen as an improvement on quasi-experimental methods like discontinuity designs, which are preferred to more observational methods. 'Structural RCTS' are seen as a further improvement of standard RCTs. This implied hierarchy has also driven publication norms with implications on the academic discipline of development economics both from a recruitment and publication perspective (Jatteau 2017). As a result, academics studying developing countries have begun to use RCTs for answering policy questions, including socio-politically sensitive subjects like political candidate selection (Casey et al. 2019), HIV testing, sexual safety in partner selection (Angelucci et al. 2016) and even religious education (Bryan et al. 2020).

However, this trend has not gone unchallenged in academic and policy circles. Multiple international aid organizations have begun to rethink their evaluation strategies (Stern et al. 2012). Economists, too, have repeatedly cautioned against adopting a 'hierarchy of research designs' (Ravallion 2018) (Deaton 2009) especially in the context of the global south, as such a methodological ordering is not consistently applicable across policy questions and contexts. As Markus Goldstein, a World Bank economist, said in an interview (Shah et al. 2015) 'It is not wrong that academics want to answer fundamental questions for theory. But let's not pretend that the policy relevance is always high on those'.

Policy cycles and their research needs have varying constraints on time, cost, data and other resources. The research questions themselves may be general or specific with respect to the geographic context or policy intervention or community of interest. Further, each context and its socio-political dynamics pose varying ethical concerns for research. Therefore, each of these considerations demands methodological variance to be policy relevant as opposed to research or RCTs that are purely used for 'knowledge creation' (ibid). Yet, the use of RCTs for policy related decision making or hereafter 'policy RCTs' in India continues to grow rapidly and seemingly indiscriminately. So far, India has been the site of 139 evaluations by just one RCT-focussed think tank, J-PAL[3], making it one of the two global 'RCT epicentres' as Chelwa and Muller (2019) describe, with Kenya being the latter.

While there has been considerable research critically analysing the viability of RCTs from a methodological standpoint, few do so from an ethical perspective. Further, there has been little meta-analysis assessing these considerations in the context of countries that host these trials. This paper aims to review the multidisciplinary literature analysing RCTs and situates this analysis in the Indian context through illustrations of Indian policy RCTs, particularly those that study innovations in public service delivery.

The rest of the paper is organised as follows: Section 2 discusses ethical considerations and describes the various social costs associated with the studies and whether they could ever claim to have a sufficiently big enough policy impact to justify the costs. Section 3 on methodological concerns weighs the technical limitations of RCTs to answer certain kinds of important policy questions. It is followed by Section 4, which presents alternative designs. Section 5 on re-imagining policy RCTs discusses proposed improvements to RCTs, how policy makers (and other development practitioners) can assess the viability of RCTs for their research question and finally, a short discussion on the role of RCTs in development.

II. Ethical Considerations

Most often, RCT work is grounded by ethical regulatory guidelines such as Belmont Principles (respect for persons, beneficence and justice etc.) for conducting research in addition to their Institutional Review Boards (IRBs) (NCPHBBR 1974)[4]. Baele (2013) highlights six ethical problems with RCTs: the randomisation problem (equipoise), the consent problem (informed consent and full disclosure), the instrumentalisation problem (using people as instruments), the accountability problem (being accountable to survey respondents) and finally, foreign intervention (social distance between researcher and respondent).

Consider the study by (Bertrand et al. 2007) as mentioned in (Carter and Barrett 2010), where study participants in Delhi were offered multiple financial incentives to obtain a driving licence as quickly as procedurally possible. This was an effort to test if participants made extra-legal payments to obtain licenses without knowing how to drive. The study found that such incentives encourage corruption. Arguably, any driver or aspiring driver in India could have predicted this outcome. Moreover, note that the study itself directly increased the number of untrained drivers in the city. The following section delves deeper into the ethical concerns of such studies in the context of Indian public policy, focusing on the implications of policy RCTs on survey participants and/or policy beneficiaries.

2.1. Equipoise

The principle of equipoise is the requirement of genuine uncertainty about the merits of a treatment before an experiment to justify running it. While medical trials have been held accountable to the principle of equipoise, the same standards do not apply to social science RCTs. This is more difficult to achieve in the social science RCT context, where there is no experimental blindness (Abramowicz and Szafarz 2019). If anything, there may be pressure in the direction opposite to equipoise to satisfy a state/funder's preference by demonstrating impact (Ravallion 2018).

Consider the driving license example cited earlier. Was there genuine uncertainty about the effect of an intervention to merit such a study? Often, researchers may not experience uncertainty regarding the direction of the effect of an intervention but rather the magnitude of it (especially to make cost-effect calculations). Methodological approaches to incorporate such prior beliefs in experimental research are discussed in Section 3. However, implementing a social science experiment where there is prior knowledge about resultant harm regardless of uncertainty about the magnitude of the harm is ethically questionable.

2.2. Informed Consent, Disclosure and Right to Decline

Researchers have also pointed out that populations are easy to exploit in developing country contexts and are often unaware of their rights to full disclosure about experimental design and subsequent informed consent or denial (Abramowicz and Szafarz 2019). Unlike medical trials, social science RCTs are not often mandated to have full disclosure. This is because if respondents knew they were part of a trial, they would automatically know that they are in the 'treatment' or 'control' group, and they may take steps to change the assignment, taking away from statistical independence of the assignment from treatment. In a systematic review of RCTs in economics journals, Hoffmann (2020) shows that only 10% of papers actually discuss informed consent, and in fact, 12% of studies intentionally left participants ignorant. None of the studies indicated whether participants were explicitly informed about being experimented upon, nor did they discuss whether participation took place because of a financial incentive.

In state-commissioned RCTs, such as those evaluating a variable in a public policy or public entitlement — for instance, a Direct Benefit Transfer (DBT) or a subsidy — respondents do not even have the right to deny participation.

Interestingly, RCT researchers have previously highlighted the risk of 'over-regulation' (Glennerster and Powers 2013), citing a Kenyan study that was asked to procure written consent from parents before giving children deworming tablets. The authors' reasoning was that given the low risk of deworming tablets, imposing a written consent may have made it less likely that children would have received the intervention. However, having any a-priori belief about the treatment outcome (that the tablets are low-risk) goes against the principle advantage of RCTs, as argued by its proponents, of being objective and unbiased. Second, arguing that written consent prevents parents from acting in the best possible interest of their child, especially in the realm of medical interventions, places the researcher's assessment over parental agency in the decision about their children.

Finally, Alderman et al. (2013) also discuss the importance of communicating the *study results* to participants and how that should be viewed as a minimum compensation for study participation (Chambers 2002).

2.3. Non-intrusive and Data Minimalism

More recently, RCT research in India has taken the approach of becoming a 'public good' of data, in that data from one RCT spawns multiple research papers because of the comprehensive nature of data collected. However, the downside of this approach is very large quantities and types of data collected from the same households and participants.

For example, a National Science Foundation grant (Award Abstract #1123899) investigating the impact of microfinance in India proposed to collect data on 'nutrition, food security, health expenditures, physiological indicators of stress through cortisol measurements in hair samples, and psychological stress measures.' from households in the treatment and control groups of a microcredit program. These form one part of four studies on the impact of microfinance, which is arguably a very well-researched subject. In fact, 3ie's evidence hub identifies 45 existing impact evaluations of microfinance in India and 20 systematic reviews relevant to the Indian context.

From a researcher's perspective, there is an incentive to maximise the data collected and outcomes measured in order to study 'impact' multi-dimensionally. However, from the respondents' perspective, collecting more data than required for stated, specific objectives amount to a form of data harm. In doing so, researchers expend participants' time, effort and resources without having to provide adequate justification. Moreover, given the social distance or power difference between the enumerator and respondent, respondents may also feel uncomfortable refusing participation or seeking more information. This is why researchers need to be respectful, non-intrusive and collect data minimally. This also requires that research questions are themselves narrowly defined with specific outcomes of interest.

Another factor to consider, apart from the cost of respondents' time and the effect of the intervention on their daily lives, is participant fatigue, which has been commonly observed in parts of India subject to regular RCTs. Not only does this increase the risk of misreporting, but respondents may also learn over time to strategically interact with the study design, thus biasing the results.

2.4. Human Cost

RCTs are often carried out to assess the cost-effectiveness of a programme and calculate the bang for policy buck. Unfortunately, the same principles are not applied to the research methods themselves. Perhaps this is also because the programme funding and evaluation funding are often delineated. (Shah et al. 2015) chart out the time and financial costs of different evaluation methodologies, estimating that RCTs of the highest rigour on average take four years to complete and cost USD 1 million.

However, in the case of welfare policies, long term experiments can also have human costs. Consider the evaluation of the Jharkhand state government's move to mandate biometric authentication for identifying public distribution system (PDS) beneficiaries. Aadhaar-based biometric authentication (ABBA) was made compulsory in August 2016, and an RCT was commissioned in 2017 (Muralidharan et al. 2017). The study period spanned three years and a working paper was published only in February 2020 (Muralidharan et al. 2020). The authors estimated that up to 25,000 beneficiaries from the 132 study blocks had been excluded from their entitlements throughout this trial (ibid) (Misra 2020).

During the study, there had been multiple starvation deaths reported in Jharkhand due to failure of the authentication process (IndiaSpend and Saha 2018). Several exclusionary errors discussed in this working paper were pointed out by journalistic accounts (Scroll.in n.d.) and observational studies very early in implementing this policy (Drèze et al. 2017). It is therefore worth considering the human cost of a policy that is locked into an RCT. While Jharkhand state itself revoked the mandatory status of the Aadhaar card in October 2017 (Indian Express 2017)[5], as per the study, both the intervention, i.e., ABBA, and the study's endline surveys continued up to December 2017. Therefore, for well over a year, participants could not opt-out of the state policy even if they lost out on their legal entitlements under the National Food Security Act of 2013. The study continued despite early feedback from journalists, activists, other research, and presumably its own preliminary results. Ultimately in 2020, the findings of the working paper were in agreement with the early-stage researchers and 'consistent with the critique that ABBA per se caused at least some 'pain without gain' (ibid)' (Muralidharan et al. 2020).

Policies like ABBA need pilots, continual monitoring and iteration and not a one-time, long-term evaluation. Even in long-term trials, when the intervention has human costs, the real-time feedback from study participants into study design is essential in order to adapt or end trials as soon as there is a realisation that the intervention is causing harm. This has always been a standard practice in medical trials including, as we observed recently, the various treatment trials for COVID-19.

2.5. Ethical Review

One concern about Internal Review Boards (IRB) and RCTs is that there are exemptions given to 'evaluations' which are distinguished from the research of a more exploratory nature because they are project or implementer specific despite having human study subjects and interventions that are comparable to exploratory studies (Glennerster and Powers, 2013).

Second, a large number of these IRBs are external to the context of the study. In a systematic review by (Hoffmann 2020), 84% of experiments conducted in former colonies had authors based in institutions in the United States or Western Europe. (Alderman et al. 2013) cite multiple studies with difficult ethical interactions. The author points to the 'Eurocentric bio-medical' model of institutional review as a primary cause that may miss out on both contexts relevant and socially salient ethical questions.

For example, some Indian RCTs include lab-in-field studies where subjects or groups of subjects play behavioural games. Often hypotheses revolve around religious and caste identities in such games requiring that groups be visibly classified. For example, the RCT by (Bhalotra et al. 2018) reviewed by the IRB at the University of Notre Dame, examines the role of religious identity and political leadership. Because of the nature of the research question, the study chooses Uttar Pradesh precisely because of its history of religious conflict and its 'salience to politics'. The research question also requires researchers to record participants' religious identity and, in some games, communicate participants' religious identity to one another. While that might not have been the case in this study, it is easy to imagine certain contexts where such social identification exists, classification may be socially sensitive. As an example of this, Sarin (2019) cites (Nair and Sambanis 2019), reviewed by the Yale IRB, which randomised Kashmiri respondents into being exposed to violent politically charged media content and its effect on ethnic and national identification.

As Alderman et al. (2013) observe, while the no-harm principle is a norm in development research, they remark that researchers have to be 'acutely aware' and 'go beyond existing protocols' in order to sufficiently judge welfare considerations. This is why they advocate for more decentralised ethical review institutions. On the other hand, Hoffman (2020) and Sarin (2019) make a case for a moratorium on studies on vulnerable populations until effective regulatory institutions are in place and until the voluntary nature of their participation in such studies can be truly established.

2.6. Research Staff

While previous sections address ethical implications with regard to policy beneficiaries, another group to consider is field[6] researchers viz. research assistants, enumerators and other staff. Kaplan et al. (2020) discuss these issues in detail in their paper about field research in the global south, focusing on RCTs. The authors highlight five areas of concern: safety and risk of harassment, poor working conditions, emotional burden, role conflict, and inadequate acknowledgement for contributions. Indeed, criticism of unfair terms of employment for local researchers compared to their international counterparts in field research in the global south is common on web portals[7]. It merits much more formal documentation and academic consideration.

It is important to clarify that much of the discussion in this paper applies to other forms of field research, but often conditions are exacerbated when it comes to RCTs, which are characterised by tight timelines, budgets, and 'limited opportunities to adequately address the complexities in the field' (ibid).

III. Methodological concerns

Even though there is a consensus that holding RCTs to be a 'gold standard' undermines other methods, the narrative persists in several policy-oriented communications. For instance, in a toolkit of evaluations for policy makers, Innovations for Poverty Action advises that quasi-experimental methods should only be used when an 'RCT is not possible' (Cowman et al. 2016). The following section discusses the various methodological shortcomings of RCTs from a policy perspective.

3.1. Heterogeneity and stratification

Participant selection and the receipt of treatment before a trial are randomised in order to ensure that groups of individuals are observably similar for each arm of the study. This way, any changes occurring ex-post can be attributed to the treatment alone. However, while it is possible to check whether the randomised samples are balanced on observable characteristics, it is impossible to do so on unobservable characteristics (like preferences and behaviour). This is because a random sample does not distinguish between the various types of participants within each arm of the trial. There may be very different outcomes for each participant type. (Deaton & Cartwright 2016) argue that randomisation increases noise and skewness because of the asymmetric distribution of treatment outcome indicators.

In the case of a policy implementation process with a no-harm principle, it is important to avoid detrimental effects on sub-groups. Therefore, an RCT must be required to report heterogeneity in treatment effects through subgroup analysis (Baldassarri & Abascal 2017) and out of sample analysis. One way to do this is to stratify samples based on prior information and knowledge, and later, limit the study to only sub-samples that are positively impacted. However, statistical power requirements will have an implication on sample sizes which will have to be larger to accommodate sub-group analysis.

A second consideration related to heterogeneous effects is that often treatment effects in RCTs are calculated on an intent-to-treat basis, i.e., effects are averaged over all those who are eligible for the treatment, not just those who opted into treatment. This is in order to overcome selection biases. However, how participants choose to select into a program may itself be policy relevant. Kabeer (2020) illustrates this with an example of a West Bengal-based RCT where most participants that refused treatment belonged to a religious minority.

3.2. RCT - An intervention in itself

Another important point to consider whilst generalising RCT results is whether programme implementation in an RCT resembles programme implementation by the state. As Baldassarri and Abascal (2017) put it, 'the people who carry out RCTs (NGO personnel, volunteers, etc.) are an exceptionally competent and motivated group, unlike some public officials who may implement interventions in the long term'. Drèze (2016) in (Deaton & Cartwright 2018) cautions similarly about foreign agencies who implement RCTs and about the power dynamics that accompany the treatment. In her essay about 'mis-behaving RCTs', Kabeer (2020) discusses the various 'tweaks' implemented in a microcredit RCT research design in Morocco in order to respond to unexpected initial results. Social scientists, in an effort to prove impact, present the best possible version of the intervention during the trial showcasing effect sizes that are not otherwise scalable and therefore, it is important to 'evaluate the effects of public policy as opposed to its intentions' (Dubner et al. 2020).

In the Indian context, this is exemplified by the various RCTs on public service delivery. Similarly, in a policy brief about the evaluation of smart cards for governance in Andhra Pradesh, Muralidharan et al. (2012) discuss how despite implementation challenges in the initial launch of the smartcards initiative, researchers worked with the state government "to relaunch the program in eight districts and test its effectiveness through a large-scale randomised evaluation reaching nineteen million people".

Often, researchers are present at the site of implementation providing inputs into the design of the technological/administrative innovation. Not only does this introduce 'Hawthorne effects'[8], but in the process, the researcher may also be eliminating technology design and implementation flaws as a part of the research design in an effort to isolate outcomes arising out of reform from its design and adoption. However, technological/administrative failures and adoption failures are very much part of the political economy of a policy reform. Therefore, RCT results may not hold when the policy is scaled up.

3.3. Generalisability

The second assessment of scalability is the external validity of the RCT results. Deaton and Cartwright (2018) argue that 'Establishing causality does nothing in and of itself to guarantee generalizability'.

Pritchett and Sandefur (2013), in their paper about the importance of context, discuss how parameter heterogeneity is driven by economy-or institution-wide factors rather than personal characteristics. They argue that estimation of heterogeneous treatment effects in a single localised sample is not enough to claim external validity. Amongst other things, they mention a few requisites for external validity, including the satisfaction of certain invariance laws, enough heterogeneity in models and random placement of the RCTs themselves.

Secondly, researchers have shown that internally valid estimates are also time-variant in the context of indicators such as returns to investments in agriculture, small and medium non-farm enterprises and schooling (Rosenzweig and Udry 2019). This is an important consideration in the Indian context, given that transportability of results even across states would require experiments to have high external validity. Glennerster and Powers (2013) respond to this criticism by suggesting that RCTs are run on large representative samples and acknowledge that these are expensive endeavours.

Another more feasible suggestion proposed by (Gisselquist 2020) is the adoption of a 'case study approach' for comparing results across contexts. As Nancy Cartwright describes in a speech about how philosophy can help policy effectiveness, there is a fundamental flaw in the 'simple induction' that goes into transporting programs across contexts[9]. Cartwright exemplifies this with the relatively unsuccessful case of the Bangladeshi Integrated Nutrition Program that was modelled on the Tamil Nadu Integrated Nutrition Program without identifying the context-specific dynamics in the causal chain.

3.4. Failure to replicate

The famous worm wars (Evans 2015) were an animated debate within public health and economics about the effectiveness of deworming tablets in promoting school participation. It brought to the forefront several issues of replicability of economics research. Young (2019), in his paper, uses multiple tests of replications to find that only 25 to 50 percent of experimental papers are able to reject the null of no treatment effect anywhere. Part of the reason why replication is difficult terrain for social science experiments compared to natural sciences is that there is a higher risk of bias in the former (Eble et al. 2017).

It is important to note here that replication and reproduction studies are not as highly valued in the economics discipline and find little incentive from universities and journals. In their paper about the failure of programmes to replicate, List et al. (2019) discuss two reasons why a cost-benefit analysis at a trial level does not scale up. This includes 'researcher competition', which drives up false positives and also strategic selection of sample populations. They argue that funding for replication studies needs to be higher and that higher benchmarks for reported treatment effects would incentivise funding replications.

3.5. Unobserved individual dynamics

As Cartwright (2010) puts it, "Causes is one word but many things". This is why Shaffer (2018) calls for an approach of 'Causal pluralism' where poverty is not seen as a stock concept but a dynamic flow concept. Because RCTs are often conducted at a household level, one does not observe intra-household individual variation in decision making (Akram-Lodhi 2020), which is important in contexts with gender and age-related power dynamics.

Second, respondents may adapt their preferences and choices to the intervention of an RCT. For example, Das et al. (2013) show that households substitute educational expenses if they anticipate an educational grant which might introduce a secondary change in educational outcomes (where the primary change is through the grant itself). Barrett and Carter (2010) call this a 'faux exogeneity' problem, where a treatment is seemingly exogenous in implementation, but actually, agents heterogeneously receive it. Similarly, Bulte et al. (2020) conduct and compare the results of a double-blinded RCT with a standard (unblinded) RCT of an improved seed intervention and show that treatment effects in a standard RCT are driven by farmers reallocating their best plots to the new seeds.

This is also a warning in (ibid) where the authors warn that subjects' interactions with the intervention may vary and depend on their self-perception or perception of the intervention. This is why the authors advise that theory be taken seriously in 'identifying structural heterogeneity ex-ante of empirical research design'.

Another way of calibrating econometric research and informing its priors is through qualitative research. For example, qualitative research was able to shed light on the intangible outcomes in the success of the programme for women, like the co-operation and contribution of male family members and mentorship of project staff (Kabeer & Datta 2020), which would not be typically measured in an evaluation survey. Similarly, in an evaluation of a citizen participation intervention that simultaneously conducted an RCT and an ethnographic study, researchers were able to discern why the programme failed to achieve desired outcomes because of context-specific politics and qualitative differences in implementation (Rao et al. 2017).

3.6. Political Economy

The historical and political context, which is often more powerful in determining policy results than economic considerations, is another important intangible (Morvant-Roux et al. 2014). Akram-Lodhi (2020) refers to this as 'social-property relations', which may constrain or otherwise influence household choice and behaviour. In the piece, '(Don't) leave politics out of it' Das (2020) illustrates this interplay with examples of how politics changes the impact of policy in India, such as in West Bengal, where the state exhibited preferential treatment toward villages with aligned incumbents. Stevano (2020) describes food security-related RCTs which discuss inter-temporal food decisions of households while ignoring the agri-food industry, intra-household power dynamics and social and cultural food relations.

Vivalt (2019) finds that government-implemented programmes have smaller effect sizes than academic or NGO-implemented programmes, even controlling for sample size. This is because government programme implementation is faced with unique socio-political challenges, especially when interest groups are opposing/promoting a reform process.

In conclusion, understanding more structural dynamics necessitates more general equilibrium work (Acemoglu 2010), more qualitative research (Kabeer and Datta 2020) and, finally, participatory and deliberative dialogue (Rao 2020).

IV. Alternative Designs

"It is almost never the case that an RCT can be judged superior to a well-conducted observational study simply by virtue of being an RCT" (Deaton & Cartwright 2018). This is because often, 'naïve' Ordinary Least Squares (OLS) estimates regressions can be more informative in its own context than an imported RCT result (Pritchett & Sandefur 2013). Therefore, observational research must continue to be an integral first option for policy research in India. Following this, if time and resources permit, other methodological options take into consideration the multi-dimensionality of a policy space and prior information as listed below.

4.1. Observational Research

In his book, Sense and Solidarity, Drèze (2017) prescribes the 'Keep it Simple, Sweetie' principle for action-oriented research and provides numerous examples of how simple but powerful observational studies have been able to uncover nuanced insights about public policy in the realm of livelihoods, food security etc. in India. This is because, as Drèze (2020) says, 'good policy requires understanding – not just evidence'. This includes, among other things, 'observation, reasoning, theory, tradition and debate'.

These observational household studies, often conducted with minimal resources, have been able to inform reforms in policies and legislation like the National Rural Employment Guarantee Act (NREGA), Public Distribution System and Social Security Pensions Scheme etc.[10]. One example cited in (ibid) is how household interviews and interactions with workers have been more informative about serious issues like NREGA payment delays than RCTs or other 'rigorous' impersonal data analysis. The same holds true for Pratham's Annual Status of Education Report surveys that have informed several educational programs and reforms in the country[11].

Mckenzie (2020) provides a helpful illustration of when it is methodologically enough to simply observe, using effect size and power calculations to show that when treatment effect on the treated group is expected to be large or time effects are expected to be small, observational studies are sufficient.

4.2. Programme-driven iterative adaptation

Pritchett et al. (2013) recommend the use of an evaluation technique called 'crawling the design space'. This was one of the early papers motivating the toolkit of 'Program-driven iterative adaptation (PDIA)'. PDIA acknowledges that policy design spaces are not hyper-dimensional and non-linear and therefore encourages policymakers to experiment their way through a policy design process. An important feature of this methodology is having tight feedback loops to learn and iterate quickly (Samji et al. 2018), which are missing in RCTs, as discussed earlier.

PDIA is also in its early stages of adoption for policy purposes and so far has been adopted in multiple West African countries in the realm of public financial management[12] with mixed success. PDIA is also a very time and resource-intensive methodology and may not always be suitable for short decision cycles.

4.3. Experiment-As-Markets

One of the oft-mentioned value propositions of an RCT is that it is free of 'expert bias' and that experimental results are not influenced by prior beliefs or judgment. This belief has come under significant criticism not only because social science RCTs cannot prove themselves to be free of bias (especially since they are not double-blinded) but also because it may not be ethical to ignore prior beliefs (equipoise argument) or because one should not undermine the experience, judgement and local knowledge of those in the sector (Leão and Eyal 2020).

Yusuke Narita (2019) recommends overcoming this by including welfare and ethics measures while carrying out stratified experiments, dubbed Experiment-As-Markets. Based on a Food and Drug Administration's adaptive designs methodology (FDA et al. 2018), (ibid) proposes creating a 'design market' using participant preferences and predicted effects in the design, maximising the use of existing prior knowledge. The author finds that such a model improves RCTs when it comes to participant welfare without much loss of information and incentives.

In other words, the preferences of beneficiaries and prior information about how the programme might affect them are used to guide experiment design. This is particularly viable in situations where there is a lot of beneficiary awareness and existing research on the subject, such as microfinance and livelihood programs.

Experiment-as-markets, to the best of the author's knowledge, remains to be implemented in the context of development/policy research.

4.4. Quasi-Experimental Methods

Researchers could also use quasi-experimental methods such as exploiting natural experiments or discontinuities designs that are less intrusive but empirically credible. In 2006, The World Bank published a report on Quality Evaluation under Constraints of Time and Resources (Independent Evaluation Group 2006) providing helpful methods of reducing costs by using quasi-experimental methods to construct comparison groups, reconstructing baseline data, leveraging secondary data and participatory rapid assessments. This includes regression discontinuity and propensity score matching etc. 'Rapid Cycle Research' as a term has been gaining popularity within development research with origins in public health (Johnson et al. 2015).

V. Re-imagining policy RCTs

5.1. Improving RCT design

In his defence of RCTs, Imbens (2018) describes how this area of research has become interdisciplinary, including researchers from computer science and statistics etc. However, perhaps it will also benefit from the participation of sociologists, anthropologists and gender studies experts etc. In his response to (Deaton and Cartwright 2018), the author also highlights several methodological improvements within the RCT literature to address concerns about validity and unobservables. For instance, to address the issue of long term unobservables, Athey et al. (2016) suggest analysing 'multiple statistical surrogates', i.e. immediate observables that can predict long-term treatment effects. The paper described the various independence conditions to be met for this and the information to be gained.

Several economists have suggested block randomisation models and regression tree models to tease out heterogeneity within treatment effects, which allow information about differential treatment effects to feed into research design. In their paper, Green and Kern (2012) discuss Bayesian Additive Regression Trees to test for systematically varying treatment effects in experimental data. Imbens and Athey (2016) suggest the use of recursive partitioning by selecting different samples to estimate heterogeneity and subsequently test hypotheses about differential treatment effects across subgroups.

Muralidharan and Neihaus (2017) recommend the adoption of RCTs on a large scale to observe significant variation to measure heterogeneity and observe the administrative and technological failures of 'scaling up' as discussed earlier. They illustrate the benefits of this approach with their state-wide RCT of biometric smart cards in Andhra Pradesh. However, as discussed in previous sections, such studies must be approached cautiously with sufficient piloting, checks and balances, and participants' option to opt-out.

In terms of improving the accountability of RCTs, Burlig (2016) discusses the various pre-analysis plan measures that can be taken by researchers who collect their own data, conduct prospective studies, and research using restricted-access data. Policy RCTs in India have begun to register their pre-analysis plans to prevent (publication and specification) bias and open up to ethical scrutiny. However, while several such plans are available online on platforms such as Social Science Registry[13], much less has been done on communicating these plans and creating transparency around them.

While several universities conducting research in India and Indian think tanks like IFMR have IRBs for social science RCTs, these RCTs are not subject to standardised norms, unlike, for instance, medical RCTs which report to ethical standards such as CONSORT. Non-medical RCTs also need to be subject to stringent ethical evaluation locally, just like medical RCTs (Srinivasan 2009).

5.2. For Policy Makers

From the perspective of governments in India, particularly state governments who partner with various universities and organisations in the social sector to run RCTs, identifying certain prerequisites for suggesting RCT as a suitable method would be useful. While RCTs for creating knowledge and progression of social understanding need not be concerned with the same factors, policy decision-focused RCTs should be demand-driven, tailored, embedded and cost-effective (Shah et al. 2015). Listed below are a few fundamental preconditions that could be used to assess the viability of an RCT for answering a policy question. This is not a comprehensive list of considerations, but a starting point for policy makers and researchers.

1. Is there enough uncertainty about the nature of the impact of the treatment on participants to merit an experiment?
2. If government/researchers/other stakeholders have prior beliefs on impact, can the research design be informed by these priors? For example,
    a. If their prior on impact is positive, can treatment be randomly phased in so that the control group is not deprived of the intervention?
    b. If their prior is negative, will the study be adapted upon first observation of negative effects?
    c. If certain groups are expected to be impacted differently, can the study be stratified to minimise negative effects and maximise positive effects?
3. Would participants have the opportunity to opt-in and opt-out in an informed manner?
4. Is data collected non-intrusive, minimal and restricted to the objective of the study under consideration?
5. Does the policy question that the study seeks to answer require the investment of a large-scale trial (cost-effectiveness)?
6. Is the study duration able to meet the urgency of the policy question (time-effectiveness)?
7. Does the program or policy require continual monitoring or a one-time evaluation?
8. What are the limits of the context within which the potential findings of the trial will be held valid?
9. Will the study design be ethically reviewed by those familiar with the context of the study?
10. Will the administration of the intervention within the study resemble the administration of the intervention in an eventual scale-up effort?
11. Are there sufficient checkpoints during the study, and does design adapt to findings at these checkpoints?
12. What other methodologies can be simultaneously adopted to complement and inform the trial?

Consider environmental conservation, a sector requiring urgent policy action and multiple stakeholder consultation, and scientific study. Such a policy area necessitates 'methodological hybridity' (Ali 2020).

RCTs could be one component of this, but certainly not the primary one. This is also true with regard to other policy areas such as political participation, livelihood development, food security and gender empowerment etc. As Haan et al. (2020) remark in the context of RCTs in gender-related work, methodologies need not substitute one another but should adopt complementary approaches with different disciplines, aiming at answering 'What', 'Why' and 'How'.

One set of policy RCTs that meet most of the above criteria are small RCTs that evaluate informational 'nudge' interventions implemented in limited contexts of improving citizen behaviour — for example, tax payment, energy use, garbage disposal, public urination etc. In most of these interventions, respondent participation has little scope to harm the participant or society. From the policymaker's perspective, there is often uncertainty about the exact design features which would elicit the best civic response. The interventions, often informational or communicational, tend to be cheap, leading to the studies being cost-effective and easily replicable in multiple contexts.

However, it should not be forgotten in the Indian context that even such communication interventions can adopt strong communal and patriarchal overtones. The nudge campaign '*Beti Aapki Dhan Lakshmi Aur Vijay Lakshmi (BADLAV)'* (Your daughter is the goddess of wealth and success), described in the Indian Economic Survey 2018-19 is a perfect example of this.

5.3. Role in Development

It is worth considering what kind of research and evidence have successfully motivated policy innovations and reform historically. In their paper on analysing the historical role of RCTs for public policy, Leãoa and Eyal (2020) show that during the 'first wave' of RCTs in public health and education (from the 1960s to 1980s), researchers realised that administrators did not prioritise 'experimental control' which is often 'politically inappropriate'.

Instead, RCTs were adapted into quasi-experimental designs and their purpose understood to be more research than evaluation. As Humphreys and Scacco (2020) put it, there is a micro-macro disconnect as findings of an RCT do not sufficiently aggregate to solve a macro problem. Indeed, the focus on public service delivery in RCT literature is justified because this is the one aspect of public policy that is particularly amenable to empirical experimentation (Kapur 2020).

As this paper has hopefully illustrated, RCTs' claim to 'neutrality' cannot hold from an *economic* perspective since the analysis is largely rooted in neoclassical microeconomic theory (Kvangraven 2020) and from a *political* perspective because these interventions are designed for and implemented in partnership with the government. Withholding information from participants has implications for a representative democracy where participants have a right to express their policy preferences. Instead, the experiments should embrace contextual complexities and allow them to inform design and analysis.

VI. Concluding Remarks

Since this paper focuses on policy RCTs and consequently the state as an actor, it does not discuss other stakeholders in detail. Other development practitioners, particularly donors, are crucial players in the design and implementation of RCTs and the adoption of results. Indeed, one explanation for the proliferation of RCTs has been donor organisations' focus on 'empiricism' and 'results-driven programming.

Second, this paper tries to list ethical and methodological considerations distinctly for the sake of coherence, but in actuality, most of these concerns are interlinked. For instance, inadequate heterogeneity analysis can lead to failures of external validity and replication. Similarly, being inconsiderate toward socio-political dynamics at a stakeholder or population level can lead to ethically insensitive design choices or as Barrett and Carter (2010) phrase it, treating humans as 'subjects' rather than 'agents'. As India sees a greater adoption of evidence-based policy research, how such evidence is generated and used to implement policy at scale will require careful examination over the coming years.

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Notes

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[2] Officially known as The Sveriges Riksbank Prize in Economic Sciences

[3] Source: https://www.povertyactionlab.org/evaluations accessed 03 March 2020

[4] See https://www.povertyactionlab.org/ethics

[5] However, by September 2018, a court ruling restored the state's ability to mandate Aadhaar for social programs including PDS.

[6] The term 'field' too has also been oft criticised for its subtext of being a reference to the 'Global South' and consequent implication of skewed power dynamics (Ould Mohamedou 2020) (The Guardian 2016).
[7] For example see The Bukavu Series https://www.gicnetwork.be/silent-voices-blog-bukavu-series-eng/
[8] 'Hawthorne effects' describe a bias introduced in empirical research as a result of participants being aware that they are being studied and consequently modifying their behaviour, based on the work of Mayo E. and Roethlisberger F. at the Hawthorne plant of the Western Electric Company in the 1920s.
[9] See 'Will this policy work for you? - Predicting effectiveness better: How philosophy helps', Nancy Cartwright, LSE and UCSD, Presidential Address PSA 2010 https://philosophy.ucsd.edu/_files/ncartwright/phil152/PSA-2-Nov-0900.pdf
[10] See Public Evaluation of Entitlement Programmes (PEEP) Survey 2013 and Public Distribution System (PDS) Survey 2011 available at http://web.iitd.ac.in/~reetika/projects.html
[11] See Arvind Subramanian (former Chief Economic Advisor, India) in an interview with Devesh Kapur https://casi.sas.upenn.edu/iit/deveshkapur2018
[12] See Collaborative Africa Budget Reform Initiative (CABRI) https://www.cabri-sbo.org/en/search?q=My+PDIA+Journey
[13] See https://www.socialscienceregistry.org/

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