

Behavioural Economics Perspective of ‘Demonetisation’

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How does one understand demonetisation from a behavioural economics perspective? Would a better understanding of cash holding behaviour and tax evasion have helped policymakers? What does behavioural economics offer for large-scale public policy decisions?

Decisions of public policy would have a greater chance of success if they were to consider principles of behavioural economics, that is, the incorporation of insights from psychology into economics. Behavioural economics contributes to public policy in at least three ways: it offers new policy tools that can be used to influence behaviour, it can yield better predictions about the effects of existing policies, and it can generate new welfare implications (Chetty 2015). Britain’s Nudge Unit set up by David Cameron in 2010 (Rutter 2015), and other such nudge teams being established in Australia, Singapore, Germany and the United States testify to the critical significance of understanding human behaviour for public policy.

On 8 November 2016, the Indian government announced its decision to withdraw high-value currency notes of denomination of ₹1,000 and ₹500 from circulation. Such notes, valued at ₹15.4 trillion, constituted 86.9% of the value of total currency in circulation in India. The stated objective of this measure was to purge the economy of black money and reduce corruption, as also reduce the amount of counterfeit notes in circulation used to fund terrorist activities (RBI 2017a).

This exercise by the Indian government could be viewed as a large-scale “behavioural experiment.” The justification of such an experiment was provided by the size of the shadow economy, conservatively estimated at 23.2% of the gross domestic product (GDP) by the World Bank in 2010, as also the ₹28 crore worth of counterfeit currency notes estimated to be in circulation in the Indian system up to September 2016 (Kaur 2016). The moot question is: could the outcomes of the demonetisation exercise have been better, had policymakers

incorporated behavioural factors into the exercise right from the stage of problem statement?

The main contribution of this article consists in systematically applying the key principles of behavioural economics to a public policy decision, to understand whether superior outcomes could have been achieved.

Background

The 2016 exercise was not the first attempt at demonetisation in India. It was tried twice earlier. Once in 1946, followed by an attempt in 1978, when an ordinance was promulgated to phase out notes with denomination of ₹1,000, ₹5,000 and ₹10,000. However, during both these instances, the experience in terms of the stated objectives were not very optimistic (Shankaran 2016).

The basic aim of the November 2016 demonetisation, introduced by the National Democratic Alliance (NDA) government that had come to power following the elections in 2014, was to contain the rising incidence of fake notes and black money (RBI 2017b). However, the scope of the scheme was later expanded to have a fourfold objective: to curb corruption; counterfeiting; the use of high denomination notes for terrorist activities; and especially the accumulation of “black money” generated by income that had not been declared to the tax authorities. Even earlier the government had attempted to curb such activities through a series of efforts. These included the creation of a Special Investigative Team (SIT) in the 2014 budget, the Black Money and Imposition of Tax Act 2015, Benami Transactions Act 2016, the information exchange agreement with Switzerland, changes in the tax treaties with Mauritius, Cyprus and Singapore, and the Income Disclosure Scheme in September 2016. As the *Economic Survey 2016–17* stated,

Demonetisation was aimed at signalling a regime change, emphasising the government’s determination to penalise illicit activities and the associated wealth. In effect, the tax on all illicit activities, as well as legal activities that were not disclosed to the tax

The author would like to thank an anonymous reviewer.

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authorities, was sought to be permanently and punitively increased.

The exercise itself was sudden and shrouded in a veil of secrecy, amidst normal economic and political conditions. It was unlike other sudden demonetisations that had been carried out in the context of hyperinflation, wars, political upheavals, or other extreme circumstances.

Dimensions of Utility

How does neoclassical economics view the utility associated with consuming goods and services, and what are the omissions it makes, which are better explained through behavioural economics? Neoclassical economics assumes that economic agents are rational and seek to maximise utility given their budget and price constraints. Further, following the theory of revealed preference, the choice of a good/service is assumed to reveal the preferences of economic agents (Varian 2006).

Decision vs experienced utility: Utility is not a homogeneous concept. An important omission in neoclassical economics is the failure to distinguish between “decision utility” and “experienced utility.” Decision utility relates to the objective that economic agents seek to maximise and can be inferred from the choices made by economic agents. While it is the relevant utility concept when people make choices, it does not reflect their attitudes or judgments regarding the decision object (Kahneman and Thaler 2007). Experienced utility is the reward or actual well-being that people realise once they make choices. It refers to attitudes regarding the decision object, and matches more closely the notions of happiness (Chetty 2015; Wilkinson and Klaes 2012).

Such experienced utilities hold little relevance for neoclassical economists, as also policymakers who consider decision utilities as sufficient to explain behaviour. Interpreting utility in the post-facto sense of experienced utility would render the revealed preferences methods of neoclassical models faulty, since the observed choices of economic agents (that is, the decision utility) no longer reveal their experienced utilities.

The difference between decision and experienced utilities regarding a decision object is likely to be significant and is explained by Schkade and Kahneman (1998). Citing the example of people who are planning to relocate to California, they state that such people report a decision utility which is much higher, owing to the expected good weather, than the experienced utility of people who actually live in California. The latter, according to Schkade and Kahneman, are no happier than others living in other parts. Such a “focusing illusion” based on the decision and experienced utility has been summarised by Schkade and Kahneman (1998: 345) as “Nothing ... will make as much difference as you think.” The difference between these two concepts of utility leads to the “troubling possibility that people may make incorrect decisions on the basis of utilities that systematically over-estimate the consequences of those decisions” (Robson and Samuelson 2010).

The supporters of demonetisation have quoted the absence of riots, the patience of the common Indian braving long queues as an expression of the support to the Prime Minister, among other sundry arguments in favour of the experiment. While these observed choices are (mis) construed as expressions of revealed preferences, they merely represent decision utilities and in no way reveal the true attitude of economic agents towards the given policy tool of demonetisation. Nor do they attest to the success of demonetisation, reflected in changed attitudes towards demonetisation.

Nudges, social proof and framing: Understanding the difference between choice and attitude is important for policy planners. The latter would be presented with a different and new set of policy tools in their toolkit if their objective were to maximise the economic agent’s experienced utility (that is, attitude rather than decision utility), subject to the constraint of achieving the desired reduction in black incomes. Specifically, such policy tools would comprise behavioural nudges designed to reduce tax evasion, rather than the price-mechanism-based penalties favoured by neoclassical economics.¹

Such nudges would be based on the behavioural principles of social proof and framing effects. Social proof refers to the tendency of people to look to the behaviour of their peers to inform decision-making, and to conform to the same behaviour that their peers are engaged in. A large part of the tax evasion behaviour can be attributed to the effect of multiple loopholes in the current tax system, which enhance the perception of “unfair and punitive taxes” on the honest, while exempting a favoured few. For instance, of the 25 crore taxpaying households in India, 15 crore were designated as agriculturists, and hence exempt from paying tax on their agricultural income (Magazine 2016). Principles of social proof would posit removal of all tax exemptions on categories seen as favouring the rich and dishonest. In a collectivist society like India, such social proof nudges could extend to social validation for large groups (communities) who are seen as contributors to the tax exchequer in the form of appreciation certificates signed by the Prime Minister and even the governor, Reserve Bank of India (RBI). Such groups may be feted during significant national day celebrations such as Republic Day/Independence Day.

Framing effects refer to cognitive biases in which people react to particular choices in different ways, based on how they are presented. The problem of tax evasion and black money may be seen as indicative of a communication problem which leads to a mismatch between the policy attitude among the masses and the government regarding black money. The government may fail to communicate its policy objective in a manner that resonates with multiple stakeholders with different orientations and preferences. It has been suggested that people form opinions regarding public policies by assigning weights to the moral, economic and empirical consequences of opposing or supporting different policies. As such, framing of public policies will influence policy attitudes significantly (Chong and Druckman 2007; Levin et al 1998).

To identify the most appropriate frames that could change policy attitudes,

policymakers could have undertaken a two-step process: (i) identify the underlying values and beliefs which promoted tax evasion behaviour, and (ii) identify the frames that were likely to have had the largest effect among the tax-evading group.

Policymakers could have identified three different frame types in this context: the empirical-scientific frame, the moral frame, and the economic frame.

Empirical-scientific frames are variants of the traditional communications approach of advocating tax compliance. These could be further distinguished into positive and negative frames, based on the starting point of the consequences of holding black money/evading taxes. Thus, negative frames would highlight the negative consequences, say in the form of punitive action, etc, of holding black money, while positive frames would highlight the positive consequences of timely payment of taxes in the form of a prosperous, corruption-free economy. While negative frames kick in the tendency for loss aversion in individuals, the outcomes cannot be posited with certainty (as explained in the next section). They may force people to conform to the policy measures due to fear, but may also induce high risk-seeking behaviour and greater tax evasion. On the other hand, positive frames may pose their own set of challenges. There may be differences in the perception of the degree to which such measures will work, which may limit the use of positive frames effectively.

Moral frames would highlight the moral values associated with payment of taxes. In a country like India with a huge informal sector, there may be a wide variation in the distribution of beliefs and values about the issue of tax payments/tax evasion, the perception of the sources of black income as also a perception of people's own duties with regard to payment of taxes, as opposed to the government's responsibilities. The feeling of being "cheated" in the provision of quality public goods and services (education, roads, health, etc), as also the rampant corruption has led the ordinary citizen to justify tax evasion, as also to have no moral compunctions about the same.

This is accentuated by the phenomenon of social proof. Governments will need to gain moral credibility in order to apply moral frames for resolving the problems of tax evasion and black money effectively.

Economic frames, which portray different economic outcomes of a given policy measure, may be further subdivided into two: the equity frames and the efficiency frames. The equity frame would highlight the notion of equity in tax payments, with the rich sharing a greater burden of the tax than the poor. These would work through appealing to the sense of fairness among people. These are likely to be affected by the political ideology of the target group and their notions of equity as well. The efficiency frames, on the other hand, would emphasise the costs and benefits of tax evasion, and highlight the greater efficiency and economic benefits associated with tax payments rather than evasion.

In the November 2016 exercise, the government attempted to use a positive empirical-scientific frame to make a case for demonetisation, namely, a more prosperous, corruption-free economy. It also sought to frame the "standing in queues" during this period as demonstration of one's patriotism, thereby using a moral frame. However, the demonetisation itself, in the interim period of three months (November 2016–February 2017), was associated with a significant negative frame from the ordinary citizen's perspective, namely, loss of flexibility. Such negative frames were even stronger for those who saw the exercise as the loss of what they perceived as "hard-earned wealth." The government, in our view, thus, lost the opportunity to create tangible positive frames (through nudges) for attitudinal change.

Policymakers may have resorted to personal nudges, which may have served as positive frames from the viewpoint of citizens. These may have included providing life insurance and accident insurance covers to taxpayers, providing tax exemptions for one year for people (and businesses) for every decade of regular taxes paid, and other such measures. Thus, the use of appropriate frames may have changed the perception

of taxes and led to more successful policy outcomes.

Remembered vs real utility: While influencing experienced utility is likely to have a far greater and longer-lasting impact on the desired outcomes, experienced utility is again not a unified concept. Kahneman (2000) has drawn an important distinction between remembered utility, that is, utility after the experience, and real-time utility, that is, utility during the experience.

While the real-time utility associated with the demonetisation itself was negative, could the remembered utility, which involved a retrospective evaluation of past experience, have been made positive? This would have involved better planning, so that the maximum intensity of suffering during the process may have been minimised. This argument invokes the "Peak-End Rule" of behavioural economics, which refers to the psychological errors of judgment, where people tend to evaluate experiences based only on some combination of the peak happiness/misery experienced (through the event/service, etc) and the experience at the end, and not their experience throughout.

Thus, policymakers could have better anticipated the pain associated with the exercise. By paying attention to minimising the peak discomfort experienced during the exercise, and maximising the happiness at the end, banks/ATM counters, etc, could have differentiated themselves from their industry peers, as also facilitated the demonetisation process by reducing customer dissonance.

Ancillary conditions: The utility that individuals enjoy from consumption of goods and services is also affected by certain ancillary conditions and factors. Such ancillary conditions, which affect the behaviour of economic agents but which cannot be manipulated through existing policy tools, are ignored by the extant utility literature in neoclassical economics. Important ancillary conditions thus omitted are the endowment effect, reference dependence and perceptions. The endowment effect is a phenomenon which states that utility derived from an

object is affected by possession. The endowment effect would make people value their wealth—ill-gotten or otherwise—as their prized possession. The process of having to give up their possession, even if temporarily until remonetisation, would cause dissonance. The government could have printed sufficient ₹500 notes of the new series, without having to give up on the secrecy of the operation. Subsequent withdrawal of the HDNS would have kicked in lesser endowment effects.

Reference dependence refers to the phenomenon of outcomes being defined relative to a reference point, which serves as the zero point of the value scale. Positive deviations from the reference point are treated as gains in utility and negative deviations as losses in utility. However, the reference point itself is affected by several factors, including expectations, perceptions and status of others. In the case of demonetisation, what was the reference or zero point? If people took “possession of adequate cash” as the zero point, they would have perceived demonetisation as a loss. If on the other hand, the reference point had been a “clean, corruption-free economy,” the exercise would have been perceived as a positive deviation/gain. As elaborated in the next section, such perceptions of gains and losses shape behaviour through the principle of loss-aversion.

Policymakers, through incorporating the impact of such endowment effects, reference dependence and perception on the behaviour of economic agents could come up with better predictions about the effects of public policies.

Demonetisation and Welfare

An analysis of utility should also be concerned with the welfare implications of public policies. Behavioural economics contributes to an understanding of the welfare implications of public policies when, due to the presence of behavioural biases, experienced and decision utilities of economic agents differ. Again, behavioural public economics literature discusses the notion of “internalities” (Allcott et al 2012; Mullainathan et al 2012)—the externalities imposed by economic agents on themselves through suboptimal

choices, in addition to “externalities” imposed on other agents’ experienced utilities through their choices. Thus, for instance, mis-optimising consumers who choose higher energy-cost associated automobiles (called “gas-guzzlers”), compared to lower energy-cost associated automobiles (called “gas-sippers”) because of undervaluing the energy costs, impose an “internality” on themselves. Their experienced utility would have been greater with gas-sippers than the gas-guzzlers they had chosen. Their choice of energy-using automobiles also imposes externalities on others through greater pollution.

However, a critical factor for optimal policy design and welfare analysis when only some consumers/economic agents mis-optimize (while others do not), is not the average population internality. Rather, it is the average marginal internality, that is, the extent to which the policy preferentially targets the mis-optimising agent that matters.

In the context of demonetisation, it is important to understand what is the proportion of mis-optimising agents, that is, those who choose to evade taxes, as opposed to the average population affected by the policy measures. Such tax evaders are termed mis-optimisers, since the decision to evade taxes is sub-optimal from both efficiency and equity considerations, imposing both internalities and externalities.² As pointed out by

Balafoutas et al (2015), tax evasion attempts—whether successful or not—impose several internalities and externalities, what they term as “hidden costs” of tax evasion. On the one hand, tax evasion involves significant internalities in terms of resource wastage when taxpayers try to conceal and tax authorities try to detect tax evasion. Then, there are externalities as well, in the form of an unfair distribution of the overall tax burden, uncertainty on risk-averse evaders and distortion of competition.

Balafoutas et al (2015) found additional externalities arising due to the negative impact on the efficiency of interaction in the underlying market, leading to lower and infrequent trade. Such efficiency losses arose mainly due to the fact that subjects who preferred paying taxes were found to react negatively to the intent of a trading partner to evade them by an increased frequency of under-treatment (in the case of sellers) and a decreased frequency of interaction (in the case of consumers).

With 98% of transactions conducted in cash (Kaur 2016), a large part of which is unaccounted, though not black—the challenge to public policy would be to preferentially target only those (within this group) who actually account for black income. The welfare gains of such behavioural targeting would be far higher than otherwise. Three sets of policies to implement such targeting include

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behavioural tagging (Akerlof 1978), that is, limiting the eligibility of public policy measures to people who have greater chances of belonging to the mis-optimiser group, say businesses belonging to real estate, etc, behavioural screening, that is, offering incentives that mis-optimisers are more likely to adopt (Allcott et al 2012) and finally, nudges targeted at the mis-optimising agents rather than the other rational agents. The demonetisation exercise of November 2016, by targeting the larger group of economic agents, rather than the mis-optimisers alone, would have serious welfare implications. As anecdotal evidence suggests, the proportion of poor who were inconvenienced were far greater than those better off.

Prospect Theory

Another influential contribution of behavioural economics to understanding public policy measures is the prospect theory (Kahneman and Tversky 1979). Prospect theory describes how people choose between different options (prospects) under risk and how they estimate the perceived likelihood of each of these options. People, who are otherwise reasonable, do not anchor their risky decisions specifically to their current wealth, but to their perceptions of gains and losses. Further, such perceptions of gains and losses are with respect to not just the actual (current) status, but also to the expected status.

As pointed out by Kahneman and Tversky (1979: 286):

Although this (reference point taken as the status quo or one's current assets) is probably true for most choice problems, there are situations in which gains and losses are coded relative to an expectation or an aspiration level that differs from the status quo. For example, an unexpected tax withdrawal from a monthly pay check is experienced as a loss, not as a reduced gain.

The principle of loss-aversion implies that people value losses more than they value equivalent gains. If they perceive a significant loss, they will be willing to take risks to recoup the loss, if they perceive a gain in wealth, they will avoid risks to protect the gain.

Further, probabilities are distorted based on how prospects are framed—whether in terms of gains or losses.

Tversky and Kahneman (1992) pointed out that weights that people place on decisions are not linear with actual probabilities. They proposed a fourfold pattern of risk preferences: risk-aversion for gains and risk-seeking for losses of high probability; risk-seeking for gains and risk-aversion for losses of low probability.

In the context of the demonetisation problem, assuming that people treat the ready availability and access to cash for transaction purposes as the zero point, they would view the move towards a cashless economy as a negative deviation from status quo and hence a loss. Further, the purveyors of black money, faced with the prospects of high losses with high probability, would theoretically be expected to engage in high risk-seeking behaviour.³ This may in fact explain the large instances of corruption and deviant behaviour of facilitating money-laundering by senior officials of public sector banks, who were seen to be colluding with unscrupulous people keen on mitigating the ill-impact of demonetisation (*Times of India* 2016).

Conclusions

The move towards demonetisation was stated to have certain positives. It was expected to flush the economy of black money, lead to better tax compliance, raise the tax to GDP ratio and improve tax collections. This, in turn, was expected to help in better fiscal management by the government, as also lead to a downward trend in inflation due to lower cash transactions in the near term.

However, holding cash has behavioural aspects. Demonetisation failed to take into account the differential aspects of utility. In particular, by failing to distinguish between decision utility and experienced utility, it equated the short-run lack of major public discontent to public acceptance of the government's decision. While it may be a long time before evidence regarding the impact of demonetisation on the black economy will be available, there is evidence on another stated objective of the demonetisation exercise, namely, reduction in the amount of cash transactions and a move towards a cashless economy, which

indicates policy failure in this regard. Thus, RBI data on the volume and value of overall digital transactions of all banks in April 2017, six months after the demonetisation exercise, exhibited a decline compared to March 2017 (RBI 2017c). At the same time, the number of cash withdrawals from ATMs was overtaking transactions at point-of-sale terminals, while the average value of such withdrawals was also increasing.

Again, a better understanding of the psychology of holding cash would have definitely transformed the Indian experience into one of the most successful large-scale behavioural experiments. An infusion of a new set of ₹500 notes before the formal demonetisation of the ₹500 and ₹1,000 notes would have helped in greater welfare gains through behavioural targeting of the mis-optimisers, as also prevented the loss-aversion for the larger population. Again, a greater preparedness with availability of currency notes would have prevented the large-scale disruption of life that the exercise caused. It is the absence of such last mile connectivity, which has been attributed as the major cause for the high rate of new product failures (Soman 2015). Last mile connectivity and behavioural targeting of the mis-optimisers would have led to the perception of the entire exercise as a positive deviation from status quo, and hence received better.

Thus, adopting a more pragmatic approach to an important public policy dilemma by incorporating behavioural economics may have led to more robust prescriptions for optimal policy, as also better welfare implications. It would have also guaranteed better success of this costly behavioural experiment.

NOTES

1 It is important to understand what constitutes black income (and not black money) and what does not. All unaccounted money is not black income. For instance, income earned by petty labourers and those in the unorganised sector would never be accounted, and yet does not constitute black money. Again, of the unaccounted money, there may be a part which originates in illicit and illegal transactions, such as smuggling, prostitution, gambling, etc. Such black money, which would not get reported for obvious reasons, would be largely outside the purview of the demonetisation exercise. It is unaccounted money created in the context of legal transactions, but which have not been reported for avoidance of tax purposes that the

government may best be able to tackle through appropriate policy measures. Similarly, the impact on counterfeit/fake notes in circulation may be limited.

2 A part of this mis-optimisation may be on account of what has been treated in behavioural economics literature as "inattention."

3 Risk preferences in losses change from risk-aversion to risk-seeking as the probabilities (p) of outcomes change from low to high; those in gains change from risk-seeking to risk aversion as p moves from low to high.

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