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Demonetisation: Impact on the Economy

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Abstract

The argument posited in favour of demonetisation is that the cash that would be extinguished would be "black money" and hence, should be rightfully extinguished to set right the perverse incentive structure in the economy. While the facts are not available to anybody, it would be foolhardy to argue that this is the only possibility. Therefore, it is imperative to evaluate the short run and medium-term impacts that such a shock is expected to have on the economy. Further, the impact of such a move would vary depending on the extent to which the government decides to remonetise. This paper elucidates the impact of such a move on the availability of credit, spending, level of activity and government finances.

Keywords: demonetization, cashless transactions, credit, tax evasion
JEL classification codes: H25, H27

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1. Introduction

The government has implemented a major change in the economic environment by demonetising the high value currency notes – of Rs 500 and Rs 1000 denomination. These ceased to be legal tender from the midnight of 8th of November 2016. People have been given upto December 30, 2016 to exchange the notes held by them.[1] The proposal by the government involves the elimination of these existing notes from circulation and a gradual replacement with a new set of notes. In the short term, it is intended that the cash in circulation would be substantially squeezed since there are limits placed on the amount that individuals can withdraw. In the months to come, this squeeze may be relaxed somewhat. The reasons offered for demonetisation are two-fold: one, to control counterfeit notes that could be contributing to terrorism, in other words a national security concern and second, to undermine or eliminate the "black economy".

There are potentially two ways in which the pre-demonetisation money supply will stand altered in the new regime: one, there would be agents in the economy who are holding cash which they cannot explain and hence they cannot deposit in the banking system. This part of the currency will be extinguished since it would not be replaced in any manner. Second, the government might choose to replace only a part of the currency which was in circulation as cash. In the other words, the rest would be available only as electronic money. This could be a mechanism used to force a transition to cashless medium of exchange. The empirical extent of these two components will be unravelled only over the next six months. These two would have different effects on the economy in the short term and in the medium term, as will be explored below.

To understand the effects of these dimensions, it is important to first understand what is it that cash does in the economy? There are broadly four kinds of transactions in the economy: accounted transactions, unaccounted transactions, those that belong to the informal sector and illegal transactions. The first two categories relate to whether transactions and the corresponding incomes are reported for tax purposes or not. The third category would consist largely of agents who earn incomes below the exemption threshold and therefore do not have any tax liabilities. The uses that cash is put to for these various segments of the economy can be summarised in the form of Table 1. Finally, there would be demand for cash for illegal purposes like bribes in elections, spending over sanctioned limits, dealings in crime and corruption. If one takes a snapshot of the location of cash at any given point of time, it is difficult to predict what the breakup of the cash according to these categories would be, but it would be safe to say that each of these components would be represented in that snapshot.

Table 1: Demand for Cash by various agents in the economy

Description of the activity	Unaccounted transactions (legitimate transactions but not tax paid)	Illegal transactions (corruption, crime, etc.)	Informal sector transactions	Accounted transactions
Medium of Exchange	Incomes are earned through exchanges in	Payments for crime	Incomes are earned in cash and spent in	Transaction demand for money

[1] Under certain circumstances people can exchange their currency at specified offices of RBI till March 31, 2017.

	cash, payments are made in cash		cash	
Store of value	Balances held in the interim until alternative investment options become available (there exist a number of instruments which yield better return than cash – real estate, lending in the unaccounted or informal sector, and so on.)	Balances held in the interim until alternative investment options become available (there exist a number of instruments which yield better return than cash – real estate, lending in the unaccounted or informal sector, and so on.)	Savings as well as precautionary purposes (as yet unbanked in the psychological sense)	For emergencies (precautionary demand for money)

Turning to the effects of demonetisation, the first major and sustained effect of demonetisation would follow from the extent to which the currency is extinguished and what this currency was being used for. It is being assumed that all currency which will potentially be extinguished would be currency being used as a store of value in the first and second category of transactions in the table above. If this assumption is correct, then the impact of extinguishing this currency would be limited. On the other hand, if the currency is used for any of the other transactions in the economy, either as a store of value or more importantly, as a medium of exchange, then the impact on the economy and the agents in the economy could be substantial. If, for instance, the extinguished cash was used as a medium of exchange in financing unaccounted income generation or income in the informal sector, demonetisation would result in these activities closing down and a corresponding reduction in the incomes and employment associated with these activities. The spillover effect would be felt by the organised sector as well since the consumption from the incomes generated would extend to the formal sector as well. The next question to ask would be: would these activities/agents choose to come within the folds of the formal sector as a result of the changed economic environment or would they remain outside or worsen the activities and would be extinguished along with the losses generated from the cash that was extinguished.

The second change as discussed above, from demonetisation would arise if only a part of the currency deposited in the banks is returned to circulation as cash. This change, if it is executed, would dramatically change the economic environment in the country by forcing agents to move from using cash as a medium of exchange to using cash substitutes. This appears to be a real possibility given that the Finance Minister as well as the Governor of the Reserve Bank of India have repeatedly emphasised that agents should be moving to the use of cashless medium where there are no problems in comparison to the cash based medium. For instance, The Hindu reported that " Reserve Bank of India (RBI) has urged citizens to switch to alternative modes of payments such as pre-paid cards, credit and debit cards, mobile banking, and Internet banking."[2] In a press conference on November 12, the Union Finance Minister too said that "Those in businesses should start using digital payment gateways, cards and banking system. Life will become simpler in the new financial system that is the only viable

[2] http://www.thehindu.com/business/Economy/rbi-urges-public-to-adopt-digital-as-atms-run-dry/article9339020.ece

option."[3] The effect of this change too would be felt differently across the different segments of the economy – agents operating within the formal sector and agents who are familiar with the modern technology would be placed on different footing compared to other agents who need to make the transition.

In what follows, an attempt is made to present a discussion of the likely effects classified into very short term as in the next two months, the short term as in a six months to a year and the rest as medium term. Within these, an attempt is made to distinguish between the effects if there is full remonetisation to the extent of deposits made in banks and a scenario of partial remonetisation.

2. Short-term and medium-term impacts

Very short-term impact

The demonetisation, by removing 86 per cent of the currency in circulation, has resulted in a very severe contraction in money supply in the economy. This contraction, by wiping out cash balances in the economy, will eliminate a number of transactions for a while, since there is no or not enough of a medium of exchange available. Since income and consumption are intrinsically related to transactions in the economy, the above would mean a severe contraction in income and consumption in the economy. This effect would be more severe on individuals who earn incomes in cash and spend it in cash. To a lesser extent it would also affect individuals who earn incomes in non-cash forms but need to withdraw in cash for consumption purposes, since a number of sectors in the economy still work predominantly with cash.

In terms of the sectors in the economy, the sectors to be adversely affected are all those sectors where demand is usually backed by cash, especially those not within the organised retailing. For instance, transport services, *kirana*, fruits and vegetables and all other perishables, would face compression in demand which is backed by purchasing power. This in turn can have two effects: while it is expected that supply exceeds demand, there would be a fall in prices, however, if supply too gets curtailed for want of a medium of exchange, prices might, in fact, rise. Thus, while generally people seem to expect prices to fall, it is quite possible that prices would instead rise.

Alternatively, to keep the flows going, people might take recourse to credit - both the retailers and other agents in the economy might make supplies on credit in the hope that when the liquidity status is corrected, the payments can be realised. In these cases, the price of commodities might rise instead of falling. In other words, the impact of an incremental reduction in money supply where the demand and the supply chain remain unaffected would be different from a case where there is a drastic reduction in money supply and outputs might adjust rather than the adjustment being in prices. In other words, the expectation that inflation would decline might be belied.

A further impact would be a compression of the demand for non-essentials by all the agents in the economy in the face of uncertainty in the availability of cash. The demand from segments which have access to digital medium of exchange would remain unaffected, but that from the rest of the economy would get compressed. This would transmit the effect to the rest of the sectors in the economy as well.

Another sector where one expects to see effects in the very short run is the real estate space. With contraction in demand from one set of agents – say agents who have earned unaccounted incomes and placed them within the real estate space – either prices within this segment would fall or transactions would cease to happen. While of itself, this would be considered a positive development and evidence of a correction in the unaccounted incomes, it could lead to a compression in investments in the construction sector which can have adverse income and employment consequences for the economy.

[3] http://www.thehindu.com/news/national/demonetisation-arun-jaitley-on-atms-going-dry/article9338238.ece

There are likely to be two spin-offs from this change – one, there would be some increase in tax collections in the short term, and second; various IOUs could emerge as currency substitutes. To the extent people attempt to get rid of unaccounted cash balances through purchase of goods and services and/or payment of property taxes, one should witness a spurt in tax collections in indirect taxes as well as property tax in the month after demonetisation which would disappear thereafter. There is evidence already that property tax collections in some cities are higher than last year. Similarly, in the case of currency substitutes, at MCD tax collection centres at the border, people are being given IOUs in lieu of the balance they were entitled to, which would be valid for six months.

Short-term effect with complete replacement:

The short-term effect on the economy would depend on the speed with which and the extent to which the cash is replaced by the authorities. If the entire cash is replaced within a short duration of time, the effects beyond the very short term of 1-2 months might be little. But a few sectors are likely to be seriously affected. To give an example from two sectors which are supposed to have large employment effect on the economy, we can talk about agriculture, automobiles and construction.

This is the sowing season for the Rabi crop in some parts of the country and the harvesting season for the Kharif crop. Most of the purchases and sales in this segment of the economy are carried out through cash. With the elimination of cash from the economy, sale of kharif crop would be difficult unless the crop is sold on the promise of payment in future. Given the limited bargaining power of the farmer, the price they can realise for the crop can be adversely affected. On the other hand, in the sowing activity, people would not get access to the inputs required since most of the inputs are now purchased from the market unless they seek access to credit from the supplier. In other words, with demonetisation, there would be a significant strengthening of the informal sector credit market in the rural economy. Further, if there are agents who do not get access to credit from the informal sector agents, their sowing activity and hence their incomes in the next season would be adversely affected. Thus, in spite of a good monsoon in large parts of the country, the farmer might not get the benefits.

The second sector which could be adversely affected would be the construction sector. The sector, it is often argued, works with a significant amount of cash. Payments to workers as well as a variety of purchases might be carried out in cash. So, on the supply side, this sector can be adversely affected. On the other hand, on the demand side, the demand for houses and buildings would appear as a demand for non-essentials and might be pushed on to the back burner until the economic situation normalises. Thus, to the extent there are agents in the economy whose demand was backed by savings from unaccounted incomes held in the form of cash which got extinguished on demonetisation, there would be a compression of demand.

Short-term effect with incomplete replacement:

If, on the other hand, the authorities choose to replace only a fraction of the total cash that was surrendered by the people to the banking sector, then one would witness some other changes/effects in the economy. For transactions to be restored to the pre-change level, a number of agents who are using cash as a medium of exchange have to move to using digital versions of money as the medium of exchange. While this change is gradually happening in the economy, if it is forced by making cash inaccessible, the compression in demand as well as in income generation in the economy would continue for a longer period until people get familiar with the functioning and use of these media.

Medium-term effects:

In the medium term, the effects would be related to the extent to which the currency is not replaced within the economy. If the entire currency is replaced, there would not be any major effects on the economy. However, it is to be expected that the entire currency would not be replaced – to the extent currency is extinguished and to the extent some of the currency remains as bank deposits, there would be some impact on the economy. The first effect would be a compression of the economy to the extent the extinguished currency was working as a medium of exchange. The currency that is placed in the banks but not withdrawn, it is argued, would generate an expansion in deposits in the economy. In the discussions on demonetisation, there is a consistent reference to the resultant increase in credit creation in the economy. Like Finance Minister Arun Jaitley says, “Bank deposits will increase and they will have more capacity to support the economy.”[4] The total cumulative credit that can potentially be generated is defined in terms of the reserve ratio. Total credit potential = incremental deposit generated*(1/reserve ratio)

In India, the cash reserve ratio is 4 per cent while there is a statutory liquidity ratio of 22 per cent[5]. In determining the credit creation, it is important to take into account only the CRR and the additional credit creation can be 25 times the amount of money deposited in the banks as a result of the proposed demonetisation.[6] This amount however, will be generated only if there exists an equivalent demand for credit in the economy.

Table 2: Potential credit creation based on Reserve Ratios

Percentage remaining in account	Value in account	Potential credit creation	Potential credit as multiple of stock of debt today
70	992600	24815000	3.082345
60	850800	21270000	2.64201
50	709000	17725000	2.201675
40	567200	14180000	1.76134
30	425400	10635000	1.321005

[4] http://www.thehindubusinessline.com/economy/demonetisation-to-increase-eco-size-enhance-revenue-base-says-jaitley/article9324312.ece

[5] The official SLR is 22 percent but some transactions and deposits with the banks have been excluded from the requirement of SLR. Therefore the effective rate of SLR is lower (it seems there was a discussion on the same – please find the reference.)

[6] SLR is not treated as a reserve for the bank since, it restricts only the instruments into which the bank can invest but does not limit credit creation. Further, amount invested in government bonds as a part of the SLR requirement would accrue to the government and be spent. All expenditure by the government, as long as it is expenditure within the domestic economy, will return the borrowed funds to the economy thereby allowing for further deposits and credit creation akin to the lending to private sector. Only to the extent the borrowing is used for purchases from the international market, either by the government or by the private agents, will the borrowing not create further credit in the economy.

Table 3: Potential credit creation based on historical trends

Percentage remaining in bank account	Value in bank account	credit potential	% of total credit	% of total incremental credit
100	1,418,000	1,684,119	20.9	198.4
90	1276200	1,515,707	18.8	178.6
80	1134400	1,347,295	16.7	158.8
70	992600	1,178,883	14.6	138.9
60	850800	1,010,471	12.6	119.1
50	709000	842,059	10.5	99.2
40	567200	673,648	8.4	79.4
30	425400	505,236	6.3	59.5

Note: These figures are based on the ratio of deposit to credit for the year 2011-12[7]

Clearly, the additional deposits appear to be capable of stimulating a significant increase in the potential credit that can be created in the economy. All these changes imply some transitions for the consumers and the banking system and can have some serious implications for consumer behaviour and the macro-economy which are discussed below.

3. Transition Issues

There are a number of transition issues that need to be managed for this transition to be effective:

[7] The projections are done using the ratio for 2011-12 since in subsequent years the ratio declined due to low off-take of credit in the economy.

1. **Infrastructure Issues:** There is need for a significant upgrade of the banking system as well as in the telecom infrastructure that would provide the backbone for digital transactions. For people to be able to transact at any time and place as well as for them to consider it a reliable medium of exchange, it is important that not only the banking system is upgraded to ensure that transactions can be completed without a hitch, but the supporting infrastructure too is up to the mark. For instance, in many parts of the economy, there is limited and intermittent supply of electricity as well as mobile connectivity. In these areas, it would be difficult to expect people to shift to electronic medium of exchange.

2. **Consumer behaviour Issues:** Apart from the technological issues, there is a behavioural change that is being expected in people from using cash as a medium of exchange to using other cash substitutes both for making payments and receiving payments. This transition requires individuals to make two changes in their behaviour: one, agents need to move from tangible means which can be seen and felt to forms which are less tangible or not tangible, and second, they have to learn to rely on technologically advanced tools to undertake regular day to day operations. The latter requires agents to be educated to the extent of comprehending the content of transactions. If this transition is not suitably managed, agents might be tempted to move to non-official cash substitutes.

3. **Accessibility in language:** In addition to all of the above, most of the banks and the mobile instruments for transaction are currently adapted to a single to two languages. If the bulk of the population of this country needs to come on board, it might be important to make these facilities available in a myriad of Indian languages to ensure that the user can comprehend the transaction that they are entering into.

4. **Transition issues for banking sector**: There are multiple issues here.

    a. The banks too might have a transition issue to deal with. Banks would have a model of the fraction of deposits that they can safely lend without an excessive risk of withdrawal of the amount. This is important since, while banks can borrow money from the call money market, the costs of such borrowings can be large. These models, however, might need to be altered in the new regime since the character of the new deposits that come into the bank would be different from the pre-existing deposits. In the latter, while a fraction of the deposits would be for transactional purposes – e.g. salary earners – another fraction would be depositing only savings into the account. By eliminating high value currency notes, these agents who were operating through cash, would now have to move to non-cash instruments and hence, the balances in their accounts would not be savings but transaction values which will be retained in the account for shorter durations of time. The banks therefore would need to re-model their decisions on how much of the deposits can be lent out and for what duration. It is, for instance possible, that a larger proportion of the deposits would be retained for short-term lending and can even be dedicated to the call money market.

    b. Second, while 1/reserve ratio defines the potential maximum amount of credit that can be generated in the economy, the actual credit generation would be defined both by the demand for credit and the extent to which cash intervenes in the functioning of the economy. For instance, if people who receive credit from the bank make payments through cheques alone and they in turn make payments through cheques, then the potential credit creation can be realised. However, if on receipt of payment, the agent withdraws the money to cash and makes payments, only a fraction of the credit/deposit will return to the banking system. Thus, larger is the extent to which cash is used as a means of transacting, smaller is the total credit that can be generated. With a withdrawal of cash from circulation, the deposits will continue to remain in the bank, it would merely shift from account to account or from bank to bank. Thus, even on the earlier deposits, the amount of credit that can be generated would be larger. This is another reason why the banks would need to remodel their investment decisions corresponding to a given level of deposits.

c. A third issue that might arise as a transition issue is because of the mismatch between people's preferences for cash and the availability of cash. In the interim, until people adjust to the use of non-cash instruments, there would be an increased demand for the cash that is available and that might generate a situation where the agents have to pay a premium to access legal tender. In periods of scarcity of coins for instance, it is commonly known that people pay a premium to get the change. While this can be considered a transition issue, there are two different implications of such a development:

   i. If the premium on cash is high, it would encourage both the shift to non-cash instruments on one hand, and to informal substitutes of cash on the other.

   ii. This might undermine the confidence that people have in the currency and hence, encourage move to other currencies.

4. Mode of payment and spending behaviour

There is growing literature that points out to the possibility of changes in spending behaviour as a result of moving to instruments other than cash. There are many substitutes for cash in the modern economy ranging from cheques, debit cards, pre-paid cards, credit cards and mobile wallets. When compared to cash, these instruments differ in a number of key characteristics. Temporal separation or degree of coupling is the extent to which a purchase and the payment for the transaction from resources are separated in time. If the two are de-coupled, people may not perceive a sense of separation from money at the time of incurring the expenditure and hence may overspend.[8] The second characteristic is related to the pain of payment flowing from salience. It is argued that people perceive the pain of payment depending on the tangibility or salience of the outflow. [9] A third feature is the stringency of budget constraint – while cash limits one's ability to spend to the amount of cash in hand, a debit card expands it to the balances available in the account and a credit card further relaxes it to include future earnings as well.[10]

The characteristics identified of various forms of payments are summarised below as presented in Braga et al.(2013)[11].

Table 4: Features of payment systems

Payment Mechanism	Salience of Form	Salience of amount	Transparency	Temporal Separation	Temporal Orientation

[8] Tokunaga, Howard (1993). The use and abuse of consumer credit: application of psychological theory and research. Journal of Economic Psychology, 14, 285-316.
Raghubir, P., Srivastava, J., (2008). Monopoly money: The effect of payment coupling and form on spending behavior. Journal of Experimental Psychology-Applied, 14(3), 213- 225.
[9] Prelec, D., and G. Lowenstein. 1998. "The Red and the Black: Mental Accounting of Savings and Debt." Marketing Science 17:4–28. Soman (2003) argues that salience may also depend on the form of payment.(Soman, D., (2003). The effect of payment transparency on consumption: Quasi-experiments from the field. Marketing Letters 14(3), 173-183.)
[10] Soma, D. (2001). Effects of payment mechanism on spending behaviour: The role of rehearsal and immediacy of payment. Journal of Consumer Research, 27(4): 460-474. http://dx.doi.org/10.1086/319621. Morewedge et al.(2007) have shown that consumers perceive the purchase or consumption to be cheaper when he/she has more financial resources that are cognitively accessible.(Morewedge, C. K., Holtzman, L., & Epley, N. (2007). Unfixed resources: perceived costs, consumption, and the accessible account effect. Journal of Consumer Research, 34(4), 459–467.)
[11] Braga, F.D., Isabella G and Mazzon JA, (2013)digital wallets as a payment method influence consumer in their buying behaviour, available at http://www.anpad.org.br/admin/pdf/2013_EnANPAD_MKT1209.pdf

Cash	Very High	High	High	No, Do not exist	Perception of present-present
Cheque	Medium	High	High	Low	Perception of present-present/future
Credit Card	Medium	Medium	Medium	High	Perception of present-future
Debit Card	Medium	Medium	Medium	No, Do not Exist	Perception of present-present
Store Value Card	Low	Low	Low	Medium	Perception of present-present
Auto Pay(direct debit from bank account)	Very Low	Very Low	Very Low	Low	Perception of present-present
Digital Wallet	Medium	Medium	Medium	High	Perception of present-present/future

Source: Braga et al.(2013)

We summarise the results of some of these studies which compare the behaviour of consumers using alternative instruments as follows:

a. In a comparison of debit cards with cash, studies suggest that with the use of debit cards, the level of consumption tends to be higher.[12]

b. In a comparison of credit cards with cash, this effect is more pronounced.[13]

[12] Soetvant (2011), Mercantanti and Li (2014), Trutsch (2014).
[13] Prelec, Drazen, and Duncan Simester. "Always leave home without it: A further investigation of the credit-card effect on willingness to pay." Marketing letters 12.1 (2001): 5-12.

c. Credit cards often are associated with more spending resulting in an increase in debt as well[14].

d. Further, spending with cards seems to encourage spending on non-essentials.

These changes in consumer behaviour can have long-term consequences on the economy as well as on the budgets and lifestyles and priorities of agents in the economy. It could, for instance, lead to a ballooning of consumer debt which in turn could push the financial system towards a crisis if not suitably managed. Further, if available debt in the economy is channeled towards consumer debt, while at the same time lowering saving in the economy, it could adversely affect the investment within the domestic economy.

5. Impact on Macro Variables

Apart from the transition issues faced by banks, in judging the impact on the economy, it is important to differentiate between the two changes that the demonetisation can bring about in money supply. The first change, i.e., cash being extinguished, to the extent it was being used as medium of exchange, would result in a compression in incomes, employment and consumption in the economy. On the other hand, the effect of the second change, i.e., cash being only partially replaced in the system would have the opposite effects of expansion in potential credit creation. The potential credit creation would translate into actual credit creation provided there is sufficient demand for credit. If the demand for credit in the economy is large enough, the potential credit can be realised. Of the credit created, other things remaining the same, it can be expected that at least a part of the credit, will be for productive purposes. This would mean expansion in investment in the economy and subsequently an increase in GDP and employment.

If there is increase in investment in the economy, the demand for capital goods rises. If output can expand in this sector, there would be an expansion in the income generation and in demand for goods and services. Sectors that are not operating with excess capacity cannot meet the expanded demand with increased output, leading to increase in prices. This would hold for agriculture as well as any industry with long gestation lags to investment. In other words, in the short run there is a possibility of increase in inflation.

With increase in GDP, since imports are supposed to be related to the size of the economy, it is expected that imports will rise, but the same cannot be said about exports. In other words, the balance of trade could worsen. This could result in pressures on the rupee towards depreciation. Any increase in inflationary pressures too could augment these pressures.

MSME is one segment of the economy which is credit constrained[15]. Expansion in the potential credit in the economy could expand the credit available to this segment of the economy which is more employment intensive than the organised manufacturing. In other words, if the access to credit for this segment can be improved, it can generate many positive spin-offs. One reason why this segment might get better access to formal sector credit would be if all their transactions move to the digital format, thereby making available to the lending institutions evidence of credit worthiness. However, for this the transactions need to move digital before they can get access to credit. In other words, unless the banking sector is exploring more risky asset categories, they would not be the beneficiaries of the expansion in potential credit.

It should be kept in mind that credit is not the only constraint faced by the MSMEs. There is a cost of compliance with regulation in the formal sector both of tax legislation and other legislation which would increase the cost of operation. In the absence of economies of scale, after incurring all these costs, some of the MSMEs might not be viable in the new environment. In other words, the decision to

[14] Lee, Jinkook, Fahzy Abdul-Rahman, and Hyungsoo Kim. "Debit card usage: an examination of its impact on household debt." Financial Services Review16.1 (2007): 73.
[15] IFC(2010)

move from the informal sector to formal sector is a non-trivial decision for the units and merely changing the access to credit might not be adequate to alter the status quo. Under those circumstances, they might explore the use of alternative currencies as a means for survival.

It is, however, not correct to assume that expansion in credit will definitely materialise. In the last two years, the demand for credit in the economy has been sluggish at best. In comparison to a credit deposit ratio of 1.53 in 2011-12, the figures for 2014-15 were as low as 0.54. While there might be many factors that contributed to this outcome, what is of consequence is that the demonetisation has been introduced in this environment where demand for credit is rather low. A compression in demand in the economy would further depress the sentiment driving investments. In other words, demand for credit would continue to be low and the potential credit will not be realised immediately.

The first consequence of this would be a fall in the interest rates in the economy which could revive some of the sentiment since firms with outstanding debt would have lower interest liabilities and hence, can see improved balance sheets.

The compression in demand would mean a decline in imports while exports might not be adversely affected. This change in the balance of trade would induce an appreciation of the currency. Along with lower interest rates, this could result in inflow of investment by FIIs as well.

If the demand for credit is not very sensitive to interest rates – then the lower interest rates would not bring in sufficient demand and banks would need to explore alternative ways of placing the additional deposits available with them. This could mean that banks take in more risky assets potentially opening up the economy to more volatility and risks. This could include real estate, consumer credit and consumer credit cards. The housing loan bubble of the US economy might be one such example of lending to more risky projects, thereby bringing in more volatility into the system.

Two more extreme possibilities that might follow are: a loss in the confidence of the people in the official currency leading to bank run kind of situations if the current description of waiting for long hours for withdrawing money persists and the caps on withdrawal are not relaxed. Alternatively, they could shift to alternatives to currency. Second, there could be social unrest if the compression in incomes and consumption are severe and persistent.

Alternatives to currency: would they evolve in the face of demonetisation?

A number of agents in the economy would be required to move from the informal sector to the formal sector. For these agents as well as for agents who have been operating through the medium of cash and find the transition difficult, certain informal cash substitutes might emerge. For instance, even at present, there are coupons like the SODEXO coupons which are used for paying for certain purchases. These are accepted by a range of establishments in place of formal currency. It is, therefore, possible to see an expanded use of these coupons. The change might induce the generation of other tokens as substitutes for money as well - the agency collecting MCD's green tax has started issuing tokens in place of change. Similarly, for high value transactions one can think of bitcoins and other such crypto currencies on one side and foreign exchange on the other as a mechanism for settling transactions. Perhaps these would not take on a dimension large enough to challenge the official currency, but it can disturb the expectation that the unaccounted economy would be brought into the formal sector since there might exist alternatives to the formal currency. Here it is important to explore the possibility and acceptability of peer to peer payment instruments – a category which has been evolving in recent times.

Effects on government finances:

The effects of demonetisation on government finances can be divided into three categories: the impact through RBI's finances, the impact through taxes and the impact through credit available to finance deficits.

Through RBI's finances: The RBI earns seigniorage through the printing of currency. In the demonetisation, a part of the currency will be extinguished. For this part of the currency, the RBI can print the notes given the assets on its books, but there would be no takers. In other words, this part of the currency would be like new money that can be introduced into the economy and hence yields seigniorage to the RBI once again when released into circulation. RBI, however, cannot lend this to the government since that would involve additional liability buildup on its balance sheet. So, this currency can only be released when foreign exchange is being converted to rupees for instance and not sterilised thereafter. At this point there would accrue some dividends to the government as well. However, to the extent the government and the RBI seek to move the economy towards digital instruments, this option might not be exercised and the dividend might not accrue.

Impact through taxes: There are multiple channels through which taxes will be affected:

- At the point of transition to the new regime, people have attempted to convert cash balances into commodities like gold or luxuries. On these transactions the governments would have a spurt of taxes. This would however not last beyond the transition phase.

- In the subsequent period, the impact on indirect taxes would be negative because of the compression in demand.

- On property taxes, some local bodies have given people a window of opportunity to pay old as well as current taxes in the scrapped notes. This would result in an increase in revenue collections in property tax. [16]

- On income tax there can be two potential effects: first, with compression in the economy, there could be a reduction in the tax collection. In the unlikely event of people choosing to deposit unaccounted balances in the bank and pay taxes and penalty on the same, or if the tax department through investigation, finds that some of the deposits are not explained income tax collections would increase. For any individual depositing balances above Rs 10 lakhs, the tax and penalty together would absorb the over 90 per cent of the deposited amount. This would serve as a disincentive for people with large balances to come and deposit the same into accounts. In other words, the government cannot expect to get major collections in terms of the tax and penalty on unaccounted incomes revealed.

Through financing of fiscal deficit: The generation of additional deposits and credit, as a result of the SLR requirements can make more credit available to governments. Given the FRBM (Fiscal Responsibility and Budget Management) limitations, the amount of borrowing that governments can take on may be limited and the additional supply can mean a decline in the interest rate that governments pay on their debt. This could be a positive spin-off for the governments.

6. Conclusions

The demonetisation undertaken by the government is a large shock to the economy. The impact of the shock in the medium term is a function of how much of the currency will be replaced at the end of the replacement process and the extent to which currency in circulation is extinguished. While it has been argued that the cash that would be extinguished would be "black money" and hence, should be rightfully extinguished to set right the perverse incentive structure in the economy, this argument is based on impressions rather than on facts. While the facts are not available to anybody, it would be foolhardy to argue that this is the only possibility. As argued above, it is possible that these cash balances were used as a medium of exchange. In other words, while the cash was mediating in legitimate economic activity, if this currency is extinguished there would be a contraction of economic

[16] http://timesofindia.indiatimes.com/city/chennai/Demonetisation-Madurai-Corporation-makes-record-tax-collection-on-a-single-day/articleshow/55374378.cms
http://indianexpress.com/article/india/india-news-india/demonetisation-hyderabad-civic-body-collects-rs-65-crore-of-property-tax-4372156/

activity in the economy and that is a cost that needs to be factored in while assessing the impact of the demonetisation on the economy and its agents.

It is likely that there would be a spurt in the banking deposits. While interpreting the phenomenon, however, one has to keep in mind that a large part of their deposits were earlier used for transactional purposes. For example, if a small trader deposits 2 lakh Rupees in the Jan Dhan account since the currency in which he held these balances in for transactional purposes has been scrapped, it would be incorrect to interpret this as success of the programme in bringing in people who were hiding black money. Nor can they be interpreted as additional balances that the banking sector can lend out on the same basis as earlier deposits, since the deposits now would remain in accounts for much shorter periods that deposits based on savings would be.

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