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Demonetisation and Its Impact on Inflation, and Interest rate in Indian Economy

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Abstract:

On 8 November 2016, in an unanticipated late-evening message on television, Prime Minister Narendra Modi announced the cabinet`s decision to pull Rs 1000 and Rs 500 notes from circulation, making them unacceptable for most transactions from that midnight.

This "demonetization" intrusion affected 85 percent of the money in circulation in India. The purpose of demonetisation, he said, was to "fight against corruption, black money, fake notes and terrorism, in this movement for refining our country." It was an unprecedented move, whether in India or almost anywhere else, and it is by far Prime Minister Modi's boldest policy intervention to date. The move has dominated the news since then— there are lots of discussion is going on among industrialist, bankers, academic scholars, economists, students and of course fellow citizen of this country. Everybody is intensely excited about its outcome. The question is whether the government will success in his objectives or not?? Economist across the world has divided on this issues some support the move while some oppose the move. Amartya Sen called it 'despotic' whereas Jagdish Bhagwati called it 'courageous with the potential to generate large future benefits.' It has multiple positive and negative effect in India`s economy.

If we look at the effect of demonetisation from the perspective of Fisher's monetary exchange equation, it could be observed that money supply as well as velocity is falling fall further for few more weeks until withdrawn currency is replaced by new currency. Since value of goods and services is not going to fall, the prices would fall resultantly and we would observe inflation falling flat. Once ***Milton Friedman*** *said, excess demand is the direct result of the increase in the stock of money. It is the growth in money supply that is solely accountable for the inflation (i.e. growth in price level) in the economy. Even otherwise demonetisation has reduced demand and would further reduce demand for few more weeks and since supply shall continue to be same for few months or so, the prices would fall. If we look at labour market, it is expected that there would be huge supply- demand gap as supply would be much higher than demand which would also affect wage rate. Due to Fisher Effect low inflation rate causes low interest rate. It can also be understood through the excess supply and low demand of fund in capital market. It is recently reported that OPEC and non OPEC countries have decided to cut production of* *oil by around 1.2 million and 558000, barrel per day respectively from the beginning of the New Year 2017. This may push upward pressure on inflation in India`s economy. If we through light towards the newly elected president of USA Mr. Trump we can expect a different world from few months ago. Trump`s manifesto reveal that his government is going to make huge fiscal expenditure in USA economy which strengthen the belief of higher Federal rate in coming future, which will not be good for the emerging economy like India. If that will happen then RBI may not reduce the interest rate. This paper study the impact of demonetisation on inflation and interest rate through economic theories and past research.*

Keywords: *Demonetisation, Inflation, Interest rate, Real rate*

1. Introduction

On 8 November 2016, in an unanticipated late-evening message on television, Prime Minister Narendra Modi announced the cabinet`s decision to pull Rs 1000 and Rs 500 notes from circulation, making them unacceptable for most transactions from that midnight. This "demonetization" intrusion affected 85% of the money in circulation in India. It was an unprecedented move, whether in India or almost anywhere else, and it is by far Modi's boldest policy intervention to date. The government of India is targeting the "black money" associated with tax evasion, corruption, and counterfeiting, and thus the drug traffickers, smugglers, and terrorists who engage in those activities. The move has dominated the news since then—there are lots of discussion is going on among industrialist, bankers, academic scholars, economists, students and of course fellow citizen of this country. Everybody is intensely excited about its outcome. The question is whether the government will success in his objectives or not?? Economist across the world has divided on this issues some support the move while some oppose the move. Here are the list of some economists.

Krugman, the 2008 Nobel Prize winning economist and a professor at The Graduate Centre, City University of New York,
"I understand the motivation, but it is a highly disruptive way to do it. I hardly see significant long-run gains, but there certainly are significant, although temporary, costs,"1

Arun Kumar Professor Economics JNU and writer of the book "Black *Money in India" 2*
"Scale of operation is the problem; may not be the intent Prime Minister Narendra Modi has rightly said that black money menace is the source of poverty, flight of capital and corruption. But, it needs to be clarified why such a drastic step like demonetisation is not the solution, but will jeopardize the economy instead. It's a wrong move."

Dr. Raghu Ram Rajan, Former RBI Governor *"I think there are ways around demonetisation. It is not that easy to flush out the black money. Of course, a fair amount may be in the form of gold, therefore even harder to catch. I would focus more on tracking data and better tax administration to get at where money is not being declared."*

Amartya Sen: Leading economist; Noble Laureate; recipient of the Bharat Ratna *"The demonetisation of currency was a despotic act as the government broke the promise of compensation that comes with a promissory note." "Demonetisation goes against trust. It undermines the trust of entire economy,"*

Kaushik Basu: Leading economist; Senior Vice-President and Chief Economist at The World Bank.
"Demonetization was ostensibly implemented to combat corruption, terrorism financing and inflation. But it was poorly designed, with scant attention paid to the laws of the market, and it is likely to fail. So far its effects have been disastrous for the middle- and lower-middle classes, as well as the poor. And the worst may be yet to come,"

Dr.**Manmohan Singh** Former Prime Minister; eminent economist; former RBI governor
In my opinion that the way the scheme has been implemented will hurt agricultural growth in our country, will hurt small industry, and will hurt all those people who are in the informal sector of the economy. And my own feeling is that the national income, that is the GDP, can decline by about 2 per cent as a result of what has been done. "

Arvind Virmani
Leading economist; Former India's representative at IMF; Former Chief Economic Adviser, GOI
"*Demonetisation is a useful method of flushing out black money, given that a large percentage of cash holding is in these two denominations.*
"The manner in which it was implemented is not surprising - such actions are always secret till announced, so that insiders do not take advantage of the information at the cost of the outsiders,"

Bibek Deb Roy: *Leading economist; Member of the Nitti Ayog, a policy think-tank for the GOI*
"Critics are unaware of the situation on ground, the extent of financial inclusion that has been undertaken by the Modi government, and how the revenue generated will help in enhancing public investment. The economists who live out of India normally do not have access to the latest data, and are hence more prone to drawing conclusions that may not hold true in the present situation."

Surjit Bhalla Oxus Investments, a Delhi-based economic research/advisory firm; Former Professor at Delhi School of Economics; previously worked at the World Bank
"If successful, this will go down as the biggest reform in India, bigger than the GST (though the two are related) and bigger than the industrial policy reform of 1991. But, while the policy is very effective in its attack on past black money, it is silent on the creation of money."

Back in 1976, in an article entitled ***"How to Make the Mob Miserable***," [3] the American economist James S. Henry addressed the question of effectiveness, prescribing demonetization as a measure to dent mafia operations." Henry's proposal was, in his own words, "dismissed as either administratively impractical or as a one-shot action that would have no long-run impact on criminal behaviour." In a book, published in 2016***, The Curse of Cash, Kenneth Rogoff*** [4] champions the eradication of high-denomination notes in order to fight tax evasion and criminal activity.

Rogoff provides extensive evidence that making it costly to hoard cash would deter illegal activities.
Inflation has been a widely discussed topic in economics. Several theories have been put forward to explain the nature & causes of inflation. Some theories attribute the phenomenon of inflation to purely monetary factors, while others assign it to factors like increase in cost of production resulting from rise in wages and profits and structural factors in the economy. Based on the causes of inflation, several types or theories of inflation have been established by economists. The first such theory of inflation is the demand-pull theory of inflation, which attributes the inflation to excess demand relative to supply. According to Monetarists, led by **Milton Friedman**, excess demand is the direct result of the increase in the stock of money. It is the growth in money supply that is solely responsible for the inflation (i.e. growth in price level) in the economy. Friedman, thus, states, inflation as always and everywhere a monetary phenomenon. The **Keynesians**, on the other hand, deny the direct influence of growth in money supply on inflation and argue that it is not the money supply, but the money expenditure that influences the price level. According to them, money supply is one of the many factors that exert influence over price level, and its influence on the price level is only indirect through its effect on rate of interest. **Don Patinkin**, a neo-Keynesian, however, puts forward a different view regarding the influence of money supply on price level. In his opinion, influence of change in money supply is passed forward ***to*** the price level through the changes in real balances (real balance effect). Any increase in money supply will raise the real balances of the people, making the actual level more than the desired level.

Consequently, demand for every commodity rises relative to its supply and the resulting excess demand in all the markets pushes the price level upward and brings the real balances to the desired level. The impact of change in money supply on the price level, direct or indirect, is an area of dispute.

Another source or cause of inflation, as described by the Cost push theories (also called sellers' or mark-up theories) of inflation is the autonomous increases in the important components of cost of production. These theories attribute the phenomenon of inflation to the increase in wages, profits and material prices, all of whom constitute the cost of production. The increase in the cost of production is passed on to the customers in the form of higher prices leading to inflation.

The structural theory of inflation, as developed by **Myrdal, Streeten** and several other Latin American economists, attributes the phenomenon of inflation to structural factors or rigidities, generally found in less developed countries. By structural factors or rigidities causing inflation, the structural theory refers to the resource gap (investment > savings), the food-shortage problem resulting from the monsoon dependent agriculture, the foreign exchange scarcity making the imports difficult and the infrastructural bottlenecks. All these structural factors, according to the structural theory of inflation, are the real causes of inflation in less developed countries. Inflation being a long term problem in India, lot has been written about inflation explaining the nature, causes and consequences of inflation in India.

2. Literature on inflation in India

Rama Rau 5

The two reasons of inflationary price spiral experienced during the war and post-war period, according to him, were 1) the failure of the rate of production, especially of food grains, to keep pace with the alarming growth of the population and 2) deficit financing and other govt. policies which caused the supply of money to increase with the population.

Rao, V. K. R. V. & Others6 have discussed the inflation problem of the Indian economy around 1972-73. The main reasons of inflation identified by them include growth in public expenditure with a resulting expansion in money supply, a fall in aggregate real supplies, wrong mix of anti- inflationary policies, economically impractical controls and black money leading to a parallel economy.

Hajra, S. 7 presents an analysis of inflation and contributing factors in
Indian economy for the period 1951-52 to 1973-74. His study estimates the quantitative significance of monetary and fiscal variables in contributing the inflation during this period. He ascribes the problem of inflation to the wrong design and implementation of planning, besides too much growth in money supply.

Brahmananda, P.R.8 the main argument contained in his book is that the inflation is essentially the result of imbalance or disproportion between the rate of growth of stock of commodities essential for production and the rate of growth in money supply.

Gupta, Raj Narain9 discusses the link between deficit financing and inflation and concludes that it is one of the reasons of inflationary price rise in India.

Dhar, T.N. 10

He accepts the inevitability of a price rise when developmental programmes are being implemented, but calls for a judicious mix of policy measures including curb over the growth in money supply.

Raj, K.N. 11

According to him, though it is always made out that monetary expansion more than the growth in supply of goods and services that is accountable for inflation, it has not been undisputedly established

Krishnaswamy, S. Y. 12 opines that five year plans are the root causes of inflation. He holds the plans answerable for growing imbalance between money supply and goods produced.

Rangarajan, C. and Arif R.R. 13 offer an econometric model for the
Indian economy, which explains the interrelationship between money, output and prices. The observed results arrived at indicate that the price effects of an increase in money supply are stronger than the output effects.

Ghoshal, M.K. 14 presents a review of inflationary situation during the period of 1990 to 1992. He explains both the demand pull and cost push factors that were at work in causing a cumulative price rise of around 25.7% during 1990-92.

Now let us consider what this demonetization is doing the economy.
The Reserve Bank of India defines the monetary aggregates as:
• **Reserve Money (M0):** Currency in circulation + Bankers' deposits with the RBI + 'Other' deposits with the RBI = Net RBI credit to the Government + RBI credit to the commercial sector + RBI's claims on banks + RBI's net foreign assets + Government's currency liabilities to the public – RBI's net non-monetary liabilities.
• **M1**: Currency with the public + Deposit money of the public (Demand deposits with the banking system + 'Other' deposits with the RBI).
• **M2**: M1 + Savings deposits with Post office savings banks.
• **M3**: (Broad concept of money supply)M1+ Time deposits with the banking system = Net bank credit to the Government + Bank credit to the commercial sector + Net foreign exchange assets of the banking sector + Government's currency liabilities to the public – Net non-monetary liabilities of the banking sector (Other than Time Deposits).
• **M4**: M3 + All deposits with post office savings banks (excluding National Savings Certificates).

3. Monetary exchange equation

Money supply is important because it is linked to inflation by the equation of exchange in an equation proposed by Irving Fisher in 1911:
$M * V = P * T$
Where,
• M= is the total dollars in the nation's money supply,
• V= is the number of times per year each dollar is spent (velocity of money),
• P= is the average price of all the goods and services sold during the year,
• T= is the quantity of assets, goods and services sold during the year.

Currency in Circulation is defined as "The total value of currency (coins and paper currency) that has ever been issued minus the amount that has been removed from the economy by the central bank" and Currency with the Public is defined as the "The total amount of paper currency, coins, and demand deposits that is held by consumers and businesses rather than by financial institutions, central banks, and the Central Bank". So when Government declared demonetization he effectively ordered the contraction of the country's money supply. Not by 2% (as the case was in 1978) but by a gigantic 84 percent. Of course, the full impact would not be 84 percent because people are rushing in to deposit the old notes and coins leading to increase in "Deposit Money" and RBI is bringing out new notes and coins. But in the short run there is going to be a shrinkage in the Money Supply.

Now let's consider the famous Fisher`s monetary exchange equation $M *V=P *T$, where M is the money supply, V is the velocity of money (how many times the money changes hand. For example if Rs. 100 changes hand 5 times a year it is buying products and services worth Rs. 500). P is the overall average Price Level and T is the Total amount of products and goods sold every years. M will fall because of demonetization and so will V (because there is less of currency to transaction with). T will not fall so soon because it is the amount of goods and services already produced for sales. That would mean P will have to fall to maintain the equilibrium. Desroches and Francis (2006, 2010) as cited by Barry P. Bosworth17 highlight a saving-investment framework to explain variations in a measure of the world real interest rate. They use collections of annual data for 35 advanced and emerging economies to represent the world economy and estimate regressions for world investment and saving over the period of 1970-2004. Real interest rates are equal to the nominal 5-year government bond rate minus expected inflation.

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The real interest rate can also be calculated with the help of Fisher Effect
i.e.

I r = I – E (INF)

Where,

I r= real interest rate

I= nominal interest rate

E (INF) = expected inflation rate.

The papers by Barro and Sala-i-Martin (1990), Ford and Laxton (1999), and Desroches and Francis (2010) approved a view of a single fully-integrated capital market. However, Blanchard and summers (1984), Ahrend and others (2006), and Brzoza-Brzezina and Cuaresma (2008), as cited by Barry P. Bosworth, agreeing that global factors are important, highlighted a continuing role for domestic variables.19 Thus from the above theory and literature it is clear that interest rate is India is going down. It has multiple effect on the economic growth like:

• **Reduce the incentive to save.** Lower interest rates give a smaller return from saving. This lower incentive to save will encourage consumers to spend rather than hold onto money.

• **Cheaper borrowing costs.** Lower interest rates make the cost of borrowing cheaper. It will encourage consumers and firms to take out loans to finance greater spending and investment.

• **Lower mortgage interest payments.** A fall in interest rates will reduce the monthly cost of mortgage repayments. This will leave householders with more disposable income and should cause a rise in consumer spending.

• **Rising asset prices.** Lower interest rates make it more attractive to buy assets such as housing. This will cause rise in house prices and therefore rise in wealth. Increased wealth will also encourage consumer spending as confidence will be higher. (Wealth effect)

• **Depreciation in the exchange rate.** If the India reduce interest rates, it makes it relatively less attractive to save money in the India (you would get a better rate of return in another country). Therefore there will be less demand for the Indian rupees causing a fall in its value. A fall in the exchange rate makes India exports more competitive and imports more expensive. This also helps to increase aggregate demand.

Overall, lower interest rates should cause a rise in Aggregate Demand (AD) = C + I + G + X – M. Lower interest rates help increase (C), (I) and (X-M)

Marjit, Sugata also talks about the relationship between the rate of inflation, the real rate of interest and the GDP growth rate and tries to discovery a statistical association between them. The correlation observed between GDP growth and inflation is negative (-0.347) in the post reform period against a positive correlation (0.352) in the pre reform period.

Interest rate is an important economic variable that plays an important role in both macro and micro economy activity. Changes in interest rates can effects all the macroeconomic variables such as GDP, price level, the level of employment, international balance of payments, the rate of economic growth, etc.

Western economists believe that the market rate of interest, the total social savings and investment are closely linked. Therefore, the current interest rates affect the investment activities. At the same time, current interest rates also affect the scale of investment in the future by adjusting the savings. If the interest rate rises, bond prices fall, if the interest rate falls, bond prices rise.21However, falling interest rates means that investment costs decline, thereby stimulating investment and the total social investments increase.

The above argument is based on the assumption of India as a close economy. Once we integrate India with rest of the world the scenario would be different. It is recently reported that OPEC and non OPEC countries have decided to cut production of oil by around 1.2 million and 558000, barrel per day respectively from the beginning of the New Year 2017. This may push upward pressure on inflation in India`s economy because most researchers agree with the fact that inflation has a recessionary effect on oil prices. According to Bruno (1982), as cited by A. Aparna (2013)22 oil price shocks lead to an increase in wages and prices, and decrease in real output. Hooker (1996) found that the causal relationship between oil prices and macro-economic variables weakened post 1973 and were not able to capture the dynamics of business. Christini (1998) as cited by (A. aparna) observed a very strong correlation between macroeconomic factors and oil prices.

Strategically, oil plays a very significant role in the economy of any country. India has been benefiting from low oil price for the past few years and has been importing more in the recent past. Energy Statistics-2016 of the Central Statistical office notes that more than 70 percent of crude oil requirements are being met by imports in India. Lower oil price has also been a boon for the current government which has felt confident in planning greater economic activities. The domestic economy may face serious challenges if the price surges beyond a certain point. Prominent economist and BJP MP Subramanian Swamy, for example, has opined that a price above $60 per barrel could set off a crisis for India's economy. Thus if oil price goes up, then India will have to spend Rs, 9126 crore ($1.36 billion) more every year for one dollar per barrel increase in crude oil. Besides, the rising crude oil trajectory impacts inflation and growth. India spent $63.96 billion on crude oil import in 2015-16, about half of $112.7 billion outgo in the previous fiscal and $143 billion in 2013-14. For the current fiscal, the import bill has been pegged at $66 billion at an average import price of $48 per barrel. International oil prices currently are trading above $52 per barrel. Every rupee per litre increase in petrol price leads to 0.02% rise in WPI inflation and 0.07% for the same amount of increase in diesel rates.

According to a RBI report (2005), for every unit dollar increase in crude oil price, WPI inflation rises by 30 basis points. Kaushik Bhattacharya et al. (2005) as cited by (A. Aparna 2013) analysed the impact of increase in oil price on inflation. They studied the mechanism of increase in the prices of petroleum products on the prices of other commodities and the output in India. In February 1999, from an all-time low of 11 U.S Dollars per barrel, it increased to a peak of 35 dollars in the first week of September 2000. Due to this, all oil importing countries faced the threat of oil shock; India, being a major oil importer, was particularly affected. Any positive change in the crude oil price has an instant negative impact on the increment in the GDP and IIP whereas it affects the WPI positively. A shock or impulse when given to WPI affects GDP in the same fashion considering the fact that WPI also includes other terms apart from fuel which constitute nearly 14.23 percent weight directly but also indirectly influences other commodity baskets. It also affects the IIP negatively and the effects last for a considerable period of time showing signs of oscillating decay. Altogether, change in oil price, WPI increase and declining IIP affect the economy negatively and even if the impulse or shock is short term, it has a long lasting impact on the economy.

4. Conclusion

In the short run it is expected that inflation rate will go down but it is not certain because of agreement of OPEC and non OPEC countries, it may also possible that some NON OPEC countries may not fallow the decision because of their own domestic economic problems and if that is going to be true then supply of oil will not go down followed by price which will be a good sign for the country like India. It is also possible that interest rate may not go down in spite of so much supply of funds because if we will look at the policies of US newly elected President Mr. Donal Trump, there is substantial probability that US Federal reserve bank may hike interest rate further in coming future, which will not be a good sign for the economy like India.

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