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# Barcode Currency Notes in Future - Necessity and its Benefits

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**Abstract**

The black money, unaccounted money and fake money are obstacles to fastest-growing economies of a country especially the developing countries like India and reduction in the value of real money. The present study was aimed to propose a new system of advantage of currency notes imprinting with barcode and will it promote the economy of a country. Based on the analysis and review present study concludes that imprinting of barcode in currency notes will be a beneficial step for main economy growth of a country.

**Keywords:** Barcode; Currency note; Black currency; Fake currency

## Introduction

The economy of India is the 7th largest economy in the world measured by the nominal Gross Domestic Product (GDP) and 3rd largest by purchasing power parity [1]. The black money, unaccounted money, and fake money [2] are obstacles to fastest-growing economies of a country especially the developing countries like India. Because of the advances in technology of printing, scanning one can easily print fake notes of their own, by this reduction in the value of real money, corruption will also increase. Government runs our economy from the taxes paid by the people. When black money eats up a part of this tax, the government deficit increases and in order to balance this deficit, taxes and borrowing increase and subsidies decrease [3]. Borrowing leads to a further increase in the government debt. The infusion of unaccounted black money in the economy leads to higher inflation and also increases the disparity between the rich and the poor. If the black money is brought out, it will create employment, uniform wealth across the nation and increase economy size of the country. Alternatively, use of electronic money like using debit cards/credit cards/online banking is better as it saves the cost of printing the currency notes, also avoid fake currency, and have accountability [4]. Though Debit/Credit cards are accepted in most of the malls and star hotels, its main drawback is that it still needs awareness and information should be spread in rural areas where the basic infrastructure is not good and literacy rate is 71% which is below the world average literacy rate of 84% [5]. Hence, in the paper we are presenting a new proposed system of advantage of currency notes imprinting with barcode and will promote the economy of a country.

## History of Barcode

In 1968, the Dutch Central Bank was the first issuing authority to introduce machine readable numbers on bank notes and later in 1989; it introduced bar code numbering on bank notes. Still the Dutch Central Bank is the only bank to register banknotes in circulation daily [6].

## About Barcode and its Working Principle

A barcode is a machine-readable representation of data related to the object on which it is attached or printed to [7]. A barcode reader is used to read these codes in order to track the object throughout its life cycle. A pattern of wide and narrow bars represents each character. A barcode reader uses a photo sensor to convert the barcode into an electrical signal as it moves across the barcode. Then scanner measures the relative widths of the bars and spaces, translates the different patterns back into regular characters, and sends them on to a computer or portable terminal. Every barcode begins with a special character and ends with a special stop character which helps the reader to detect the barcode and figure out whether it is being scanned forward or backward. By this, barcodes provide a rapid, accurate, and efficient means to collect, process, transmit, record, and manage data [8]. This Barcode reader can be installed easily in banks, automated teller machines, smart phones, hospitals, colleges, schools, markets, shopping places, malls etc. where if cash transactions are done by this fake notes, can be easily identified and notes in circulation on a daily can be easily registered.

## Advantage of Currency Notes if Imprinted with Barcodes

As all the notes are having unique barcode, not more than one note can have the same identity. If the barcode of two notes matches, fake note can be easily identified and ruled out from the circulation.

By using the bar-coded notes, crimes and thefts can be easily identified, solved, and reduced in future. If the stolen bar-coded notes are paid for their daily needs in market and other public places by those who stole can be easily identified or intimated to the respective authorities by declaring those currency notes as non-functional.

As each banking transaction of the barcode currency notes is scanned and details are updated in the core-server for each scanning, the barcode currency notes in circulation on a daily can be easily registered.

The bank details, account number and the place of last transaction of the currency note can be easily traced and by scanning the barcoded

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currency notes, total number of currency notes could be verified and tallied periodically with total printed and distributed currency notes.

The currency notes which have not been used in certain time duration or interval could be identified and those currency notes can be declared as black currency or hidden currency notes. These notes can be replaced with a unique barcoded currency notes and those who are laundering the wealth to avoid taxation or confiscation can be stopped.

Shadow economy is a not declaring, or under-declaring, a source of income to avoid tax and other liabilities [9]. The World Bank estimated about 25% of shadow economy of the total economy in India and this percentage of shadow economy can be reduced by introducing barcode currency notes.

## Conclusion

Our paper suggests implementing a new technique of barcode in the currency notes which will be a beneficial step towards the economic growth of a country, will be helpful to curb the fake notes, corruption and black money or un-accountable money and even to reduce/stop crimes.

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