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## E-Rupee: Economic Opportunities and Challenges in India

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### ABSTRACT

India is exploring the adoption of digital currency within its monetary system. This research focuses on evaluating the feasibility, benefits, and challenges associated with India's potential shift to the e-Rupee. By analyzing the current landscape, policy considerations, and technological readiness, we aim to understand the implications of such a transition. Key areas of investigation include the regulatory framework, financial inclusion, security, and the impact on traditional banking systems. The study will inform decision-making by offering recommendations for policymakers, financial institutions, and the public. We will examine strategic implementations in other countries and conduct statistical analyses to assess the impact of digital currency. In summary, this research will delve into various aspects of digital currency adoption in India, provide policy recommendations, and contribute to the ongoing discourse. This study will also address the driving factors behind digital currency adoption, its economic and financial goals, and lessons learned from other countries' implementations.

This research aims to offer a comprehensive understanding of the opportunities and challenges associated with India's digital currency transition, ultimately aiding informed decision-making for a smooth and secure implementation.

**KEYWORDS:** e-Rupee (e₹), e-Rupee, Central Bank Digital Currency (CBDC), RBI

### INTRODUCTION:

Finance Minister Nirmala Sitharaman announced the introduction of a digital currency in the annual budget on 1<sup>st</sup> February 2022. From December 1, 2022, the Reserve Bank of India (RBI) launched the e-rupee. The launch of the Central Bank Digital Currency (CBDC) aims to advance the digital economy and offer a regulated alternative to the burgeoning virtual money landscape. India is making significant strides in digital payment innovation, with the Reserve Bank of India launching the "e-Rupee" (e₹). While digital currency isn't entirely new, it offers another alternative to existing cashless payment methods. So why introduce a digital currency when we already have methods like Real Time Gross Settlement (RTGS), National Electronic Fund Transfer (NEFT), Immediate Payment Service (IMPS), and Unified Payment Service? Because e-Rupee is expected to positively affect individuals by enhancing payment convenience, enabling savings and investment, and protecting against fraud and theft. It provides a convenient payment method, reduces the risk of fraud and theft, increases financial



inclusion, and enhances privacy. The introduction of the e-Rupee brings many advantages, heralding a new era of financial efficiency and inclusivity.

### **OBJECTIVES OF THE STUDY**

1. To understand the concept of e-Rupee (e ₹).
2. To the study of role of e-Rupee (e ₹) in Indian Economy.
3. To the study of Opportunities and challenges of e-Rupee (e ₹).

### **RESEARCH METHODOLOGY**

This research is based on the aforementioned objectives and takes a descriptive approach, utilizing data provided by various governmental and non-governmental organizations supported by the Central Authority. To perform a thorough analysis, secondary data sources were explored extensively. This involved reviewing information from various websites, journals, articles, and publications. The data examination was further enhanced by consulting newspaper reports and circulars from multiple national and international organizations, including RBI bulletins.

### **ANALYSIS**

The e-Rupee is a digital equivalent of paper currency, eliminating the need for intermediary banks. Just as you withdraw physical currency from a bank and store it in your wallet for transactions, the e-Rupee follows an identical process. The key difference lies in how it simplifies transactions. The e-Rupee enables seamless digital payments through QR codes or digital wallets, bypassing the need for physical cash handling.

The e-Rupee not only enhances convenience but also aligns with the growing trend of digital payments in India, promoting financial inclusion. By equipping the public with the necessary knowledge and tools to manage digital currency securely, the e-Rupee can drive the nation's transition towards a cashless economy, offering significant advantages over traditional currency.

#### ***What is e₹?***

e₹, or e-Rupee, is a legal tender issued by the central bank in digital form. The conversion rate is 1 e₹ = 1 Rupee. It is accepted as a medium of payment, legal tender, and a safe store of value.

#### ***How does e₹ work?***

e₹ functions similarly to banknotes and coins. If you possess e₹, you can use it in place of cash. It can be stored in your bank's e₹ app, functioning as a digital wallet. These transactions are entirely paperless and can be conducted anonymously by obtaining the sender/receiver's phone number or QR code, or via account-based e₹ transactions.

#### ***How is e₹ different from UPI or other fund transfer modes?***

UPI, NEFT, RTGS, and IMPS are all digital payment methods. e₹, however, is a digital form of currency and is a legal tender provided by the RBI, akin to physical cash but in a digital format.



It is acknowledged as a sovereign currency, akin to cash notes, and therefore does not accrue interest. Transactions can be made through the digital wallets of various banks and can be stored on digital devices, including mobile phones. Since CBDC is a legal form of payment, its distribution has already begun, with banks initially playing the role of creating the wallets.

**How is E-Rupee (₹) different from Cash, UPI, and Cryptocurrency?**

**Cash vs ₹:** The ₹ is most comparable to cash. When you pay with cash, the physical note or coin moves from your wallet to someone else's. Similarly, users transfer ₹ from their ₹ Wallet to someone else's wallet.

**UPI vs ₹:** Unlike ₹, which is a form of currency, UPI is merely a payment system that allows the transfer of money from one bank account to another through an intermediary.

**Bitcoin vs ₹:** Cryptocurrencies are decentralized assets where transactions between parties are settled by a network of users. In contrast, with ₹, the central bank is responsible for ensuring that transactions are settled. Additionally, ₹ maintains the stability in value associated with the Indian rupee, whereas cryptocurrencies can be highly volatile.

The e-Rupee is anticipated to ease the payment processes for businesses, simplifying transactions with customers and other stakeholders in India. It can also help businesses reach new customers and expand their markets. Additionally, the e-Rupee is expected to reduce payment costs by eliminating the need for intermediaries in transactions between wallets. With real-time, 24/7 transaction processing, the E-Rupee can improve payment efficiency. Accepting e-Rupee payments globally helps businesses broaden their customer base and expand market reach.

**Table 1.1 ₹ in CIRCULATION (₹ Crore)**

Year	2022-23 (From 01 <sup>st</sup> December 2022)	2023-24
₹ 0.50 paise	0.01	0.09
₹ 1 Notes	0.04	0.37
₹ 2 Notes	0.06	0.54
₹ 5 Notes	0.12	1.37
₹ 10 Notes	0.15	2.14
₹ 20 Notes	0.23	3.94
₹ 50 Notes	0.39	8.49
₹ 100 Notes	0.83	20.73
₹ 200 Notes	1.16	32.01
₹ 500 Notes	2.71	164.36
₹ 2000 Notes	-	-
Total ₹-Retail	5.70	234.04
₹-Wholesale	10.69	0.08
Total ₹	16.39	234.12

Source : Reserve Bank of India.

Table 1.1 illustrates the data on e-Rupee circulation in India. Since the use of E-Rupee began on



December 1, 2022, transactions in e-Rupee were only conducted for four months during the fiscal year 2022-23. In contrast, transactions were carried out throughout the entire fiscal year 2023-24. Comparing these periods reveals a significant increase in the number of transactions conducted via e-Rupee in 2023-24 compared to 2022-23. This growth indicates that despite numerous online payment options available in the market, E-Rupee is being widely used for financial transactions. It is anticipated that the number of transactions conducted via E-Rupee will further increase in the future as evidenced by the e-Rupee transaction data in the table above. However, retail transactions have shown a noticeable decline via e-Rupee in the fiscal year 2023-24 compared to 2022-23, while there has been a substantial increase in retail transactions overall.

**Table 1.2 Explaining potential benefits and challenges in some areas**

Impact Area	Potential Benefits	Challenges faced
Financial Inclusion	The RBI is now carrying out a pilot programme in multiple cities with the objective of providing more access to banking services for those who may not have it otherwise. Streamlined microtransactions and financial transfers.	Digital literacy and access to smartphones in rural areas. Ensuring fair pricing and avoiding exclusion of low-income groups.
Transaction Efficiency	Faster and cheaper settlements compared to traditional methods. Reduced cash management costs for banks.	Integration with existing payment systems and infrastructure. Potential cybersecurity threats.
Monetary Policy	Enhanced regulation of monetary supply along with interest rates. Targeted fiscal interventions for specific sectors.	Balancing innovation with financial stability. Potential disintermediation of banks.
Transparency	Reduced black money circulation and tax & Traceability evasion. Improved tracking of illegal activities.	Ensuring privacy concerns are addressed. Potential for government surveillance.
Innovation & Competition	Potential for new financial products and services. Increased competition in the financial sector.	Regulatory framework for innovation in the e-Rupee ecosystem. Ensuring a level playing field for existing players.
Cross-Border Transactions	Faster and cheaper cross-border payments. Potential for a new global reserve currency.	International standards and collaboration for interoperability of CBDCs. Geopolitical considerations and potential for currency manipulation.

Sources: Md Asraful Haque Mohd Shoaib-May 2023 [65], Peterson K [59]. Ozili July 2023, EY Report 2023



India exhibits a higher inclination towards cash usage compared to the Nordic nations, including the UK and Australia, with a cash-to-GDP ratio of 17%. The e-Rupee has the potential to reduce this reliance on cash. By adopting a digital currency, the expenses associated with managing, printing, and distributing physical currency can be notably reduced.

Additionally, the use of the e-Rupee can diminish the frequency of illicit transactions and the circulation of black money, which can result in increased tax revenue and decreased corruption. Moreover, the implementation of the e-Rupee can provide the government with valuable data on spending patterns, thereby enhancing the effectiveness of economic policies and generating more fiscal revenue.

Overall, the adoption of the e-Rupee holds the promise of a positive impact on the Indian economy and long-term fiscal benefits. In the modern age of electronic payment, the development of digital currency is an overriding trend. Central Bank Digital Currency (CBDC) is being explored by numerous countries for its various advantages. India, too, has witnessed a significant rise in digital payment options in recent years, a trend that is expected to continue. This surge could generate demand for the e-Rupee as an alternative digital payment option.

Digital currencies, including e-Rupee, are still relatively new and complex technologies, and there may be regulatory challenges that need to be addressed for e-Rupee to be successful. India has not yet developed clear guidelines on the usage of digital currencies, and there have been recommendations to prohibit them outright. It is crucial to carefully consider the potential risks and challenges associated with a digital currency.

One significant challenge is digital literacy. In 2021, India ranked 73rd in a list of 120 countries in terms of digital literacy, primarily due to the lack of high-speed internet facilities in many rural areas. Consequently, people in these regions face difficulties in availing themselves of the benefits of the digital revolution. Addressing this issue is vital for India to succeed in promoting digital money.

Another challenge is scalability. India has a vast population and a rapidly expanding digital economy. Networks can struggle to process large volumes of transactions simultaneously, but this issue can be mitigated through technological advancements and network upgrades. Ensuring the architecture is scalable and capable of handling enormous amounts of transactions and user accounts is essential.

Privacy and security concerns are also paramount. The Reserve Bank of India (RBI) maintains a central record of every transaction, and authorities may use centralized data for additional purposes. India faces a high incidence of cyber-attacks and a significant level of cybersecurity risk. The introduction of digital currency may lead to an increase in cyber-attacks and potential digital thefts. Therefore, incorporating robust security features such as multi-factor authentication, encryption, and real-time monitoring and alerting is crucial.

e-Rupee will also face competition from other digital payment options, such as bank-based



digital payment systems and existing cryptocurrencies. Usability, support systems, innovative mechanisms, and low transaction fees are areas where e-Rupee must excel. India has a diverse population that speaks numerous languages. The architecture should accommodate different languages and provide an intuitive user experience for individuals who may not be proficient in English. Additionally, India is a price-sensitive market, and excessive transaction fees could dissuade users. Offering low transaction fees will help encourage acceptance and usage. Furthermore, many unbanked and underbanked individuals in India could benefit from incentive mechanisms such as referral or transaction rewards, which should be included in the architecture to promote the use of digital currencies.

India is predominantly a cash-based society, with a significant portion of transactions being conducted in physical currency. This reliance presents numerous challenges, including the cost and time required for printing and distributing currency notes, the risk of counterfeiting, and the difficulty of tracking and taxing transactions. The Reserve Bank of India's e₹ initiative aims to replace traditional currency notes with a digital alternative, easing electronic payments and transactions through QR codes or e-Rupee wallets. This initiative could enhance financial inclusion and stimulate economic growth by making electronic payments more accessible to everyone.

The e-Rupee will be exchangeable at par with existing currencies, accepted as payment, and provide a secure storage option for wealth. However, achieving widespread adoption poses a challenge as the general public and traditional financial institutions may initially be hesitant to accept this new mode of payment. To ensure the success of e-Rupee, merchants must be willing to accept it as a form of payment. Without merchant buy-in, it will be difficult to achieve widespread adoption. Education and awareness campaigns will be crucial in overcoming these hurdles and promoting usage.

Additionally, the e-Rupee system should integrate seamlessly with prominent payment gateways in India, such as digital wallets and the United Payments Interface (UPI), to facilitate the exchange of digital currency for fiat cash. The government also needs to establish clear guidelines to boost public confidence in digital currency. It is vital to educate the general public about the use and potential risks of digital currency and ensure the necessary infrastructure is in place to support its adoption.

## **CONCLUSIONS**

The introduction of Digital Currency marks a significant innovation in the realm of financial technology. Despite its potential benefits, many people remain unaware of its purpose, advantages, and challenges. This initiative could be a major win for the government, especially following the success of the United Payments Interface (UPI) in India. Digital Currency aims to address cash-related issues, making payments cheaper and faster.

While the research indicates strong support for the E-Rupee, it also highlights a lack of



awareness and skepticism about its features among some people. A notable challenge is the vast population of India, which may affect the number of participants. Nevertheless, this research provides valuable insights that is useful.

Similar to the initial skepticism surrounding UPI, which ultimately became a phenomenal success, the E-Rupee has the potential to revolutionize payment methods across the nation. From small villages to urban towns, from farmers to consultancies, everyone is now using UPI for payments. This research captures the initial perceptions of the E-Rupee and can serve as a reference in future discussions about evolving payment technologies and the government's efforts towards financial inclusion.

The journey toward the widespread adoption of the Digital Rupee presents several challenges. Implementing offline transaction capabilities is crucial for regions with limited internet access while maintaining security. Balancing privacy with regulatory demands is critical to foster user trust. Lastly, educating the public to ensure understanding and confidence in this new form of currency is vital for its successful integration. Together, addressing these challenges can pave the way for a seamless and trusted digital currency future.

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