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Economic impacts of currency withdrawal and demonetization in India a comparative policy analysis of the 2016 and 2023 episodes

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Abstract
This paper examines the economic effects of withdrawing currency denominations, using India's 2016 demonetisation and the Reserve Bank of India's 2023 withdrawal of ₹2,000 banknotes as contrasting policy episodes. It distinguishes withdrawal of legal-tender status from a phased withdrawal in which notes remain legal tender during the transition. The paper uses a narrative review of Reserve Bank of India and Government of India documents and peer-reviewed empirical studies. Evidence indicates that the 2016 measure created a sharp cash and liquidity shock because the affected notes represented a large share of currency value. District-level research finds short-lived declines in employment, output and bank credit in areas more exposed to the shortage. The episode also accelerated some digital-payment use, although the extent to which it caused durable economy-wide formalisation cannot be inferred from payment growth alone. The 2023 exercise was materially different: the ₹2,000 note remained legal tender, the withdrawal was gradual, and the RBI reported that the large majority of the value in circulation had been returned by early 2025. The comparison suggests that economic outcomes depend on the scale and speed of withdrawal, replacement-currency readiness, access to payment alternatives and the distribution of cash dependence. The paper recommends explicit objectives, adequate transition arrangements, protection for cash-dependent groups and independent evaluation against measurable economic and inclusion indicators.

Keywords: Currency withdrawal, demonetization, liquidity, India, digital payments, financial inclusion, informal economy

Introduction

Currency notes provide a means of payment and a store of value, and they support transactions where access to bank accounts or electronic payments is limited. A decision to withdraw a denomination can therefore affect economic activity through more than the composition of currency in circulation. The consequences depend on whether the note loses legal-tender status, how much of the currency stock is affected, how quickly replacement cash becomes available, and how readily households and firms can use other payment methods.

India offers two distinct cases for examining these effects. On 8 November 2016, the Government announced that existing ₹500 and ₹1,000 banknotes would cease to be legal tender from the following day, subject to specified deposit and exchange arrangements. In May 2023, the Reserve Bank of India (RBI) announced that ₹2,000 notes would be withdrawn from circulation while continuing to be legal tender. The latter was a planned currency-management exercise with a transition period, rather than a sudden cancellation of the notes' monetary status (RBI, 2016, 2025, 2026) [6, 7].

This paper evaluates these episodes through four questions: What economic channels connect denomination withdrawal to output and welfare? How did the design and scale of the two Indian exercises differ? What does available empirical research show about the costs and possible gains? What safeguards should inform future currency-management decisions? The central argument is that the policy instrument cannot be assessed in isolation from its implementation. A large, rapid withdrawal can constrain transactions even when the underlying wealth remains intact; a phased withdrawal with continued legal-tender status can permit gradual adjustment and reduce disruption.

Concepts and Analytical Framework

1. Demonetisation and withdrawal from circulation

Demonetisation is the removal of a note's legal-tender status. The 2016 action affected the legal status of the specified ₹500 and ₹1,000 notes, although holders were given a limited period and prescribed channels to deposit or exchange them. Withdrawal from circulation is different: a central bank may stop issuing a denomination and encourage its return while existing notes continue to be valid for payment. The 2023 ₹2,000 exercise followed this latter approach. Routine replacement of worn or damaged notes is a third, generally less disruptive, form of currency management.

This distinction matters because legal-tender status, ability to deposit a note and practical access to usable cash are separate dimensions. A note may remain legal tender while becoming less available in everyday circulation. Conversely, a note that loses legal-tender status may still be deposited or exchanged under a time-limited arrangement. These differences affect the speed of adjustment and the risk of a liquidity interruption.

2. Transmission channels

The immediate channel is liquidity. When a widely used note cannot be spent and replacement cash or electronic payment options are unavailable, households may defer purchases and firms may be unable to pay workers or suppliers. Lower transactions can reduce sales, production and hiring. Cash shortages may also raise transaction costs

by requiring travel, queues, altered payment arrangements and additional bank processing.

The effects are uneven. Firms with bank access, digital systems and working-capital reserves can adjust more readily than small enterprises and informal workers who depend on cash. Rural households may face additional barriers where bank branches, connectivity or payment acceptance are limited. A withdrawal can therefore impose distributional costs even if the nominal value of legitimate holdings is ultimately recoverable.

Possible longer-term channels include changes in bank deposits, payment habits, financial records and tax reporting. These outcomes are not automatic. Deposits do not translate one-for-one into lending, and digital-payment growth does not itself establish a lasting increase in tax compliance or a reduction in illicit wealth. Evaluation must separate immediate disruption from longer-term outcomes and distinguish policy effects from concurrent changes in technology, regulation and economic conditions.

Method

The paper uses a narrative analytical review of primary policy documents and published empirical research. The documentary material includes RBI notices and annual-report data on the 2016 and 2023 exercises, together with the Government of India's Economic Survey 2016 [3]–17. The research review draws on peer-reviewed studies using district-level variation, household survey data and transaction-level payment records. Sources were selected for direct relevance to liquidity, output, employment, payment substitution and currency-return outcomes.

The analysis is comparative rather than a new causal estimation. It does not re-estimate national GDP or employment effects, and it does not treat trends observed after a policy announcement as proof that the policy caused them. The available studies use different populations, time periods and measures; their estimates should therefore be interpreted within each study's design. This limitation is particularly important when comparing a short, severe cash shortage in 2016 with the gradual 2023 withdrawal.

The Indian Episodes

1. The 2016 withdrawal

The November 2016 action was implemented at short notice and affected ₹500 and ₹1,000 notes that together represented a very large proportion of the value of banknotes in circulation. The Economic Survey 2016 [3]–17 treated the event as a major macroeconomic shock and discussed the resulting cash constraint, uncertainty and potential effects on economic activity (Ministry of Finance, 2017). The RBI's later annual report records that ₹15.31 lakh Crore in specified banknotes was returned from circulation, against ₹15.42 lakh Crore in notes in circulation after verification and reconciliation, or approximately 99.3 per cent (RBI, 2018). This return rate is evidence about the eventual disposition of the notes; by itself, it does not measure the policy's success in reducing unaccounted wealth or its net welfare effect.

The distinction between returned currency and the policy's broader aims is important. A high return rate means that most value was deposited or exchanged through the permitted channels. It does not show that all deposits were legitimate, that tax evasion was eliminated, or that the social and economic costs were outweighed by later gains. Each of those questions requires separate outcome measures and a credible comparison with what would otherwise have occurred.

2. The 2023 withdrawal of ₹2,000 notes

The RBI announced on 19 May 2023 that it would withdraw ₹2,000 banknotes from circulation. It stated that the notes would continue to be legal tender and initially asked the public to deposit or exchange them through bank branches within a specified period. After the bank-branch window ended, deposit and exchange facilities remained available through RBI Issue Offices, with a postal route for credit to Indian bank accounts. The RBI's status updates report that ₹2,000 notes remain legal tender (RBI, 2025 [6], 2026).

At the time of announcement, the value of ₹2,000 notes in circulation was ₹3.56 lakh Crore. The RBI reported that 98.15 per cent of this value had been returned by 31 January 2025 (RBI, 2025). This outcome is consistent with a comparatively gradual adjustment. It cannot, on its own, establish that the 2023 exercise increased tax compliance, reduced illicit activity or generated a measurable productivity gain.

Table 1: Comparison of India's 2016 [1] and 2023 currency exercises.

Dimension	2016 episode	2023 episode
Policy form	Specified ₹500 and ₹1,000 notes lost legal-tender status, subject to deposit and exchange arrangements.	₹2,000 notes were withdrawn from circulation while retaining legal-tender status.
Implementation	Short-notice transition affecting a large share of currency value.	Phased return through bank branches and later RBI Issue Offices and India Post.
Primary immediate risk	Acute shortage of usable cash and disruption to cash-dependent transactions.	Adjustment of denomination holdings over time, with lower legal-tender risk.
Reported return	₹15.31 lakh Crore returned, about 99.3% of verified specified notes.	98.15% of the value outstanding at announcement returned by 31 January 2025.
Interpretive caution	Return rate alone does not establish success against black money or net welfare effects.	Return rate alone does not establish tax, productivity or inclusion gains.

Source: RBI (2018, 2025, 2026). Figures are stated with their reported reference dates.

Economic Effects and Evidence

1. Liquidity, output and employment

The most direct economic cost of a sudden currency withdrawal is a temporary inability to complete transactions. Chodorow-Reich, Gopinath, Mishra, and Narayanan (2020) [2] use differences in district exposure to the cash shortage to estimate effects on employment, economic activity and bank credit. They find that more-exposed districts experienced declines in employment, output and credit in the quarter of the withdrawal relative to counterfactual trends, with effects that dissipated over subsequent months. Their results

support the liquidity-shock mechanism while also indicating that the measured effects were concentrated in the short run.
Survey-based work also examines employment around the 2016 event. Vyas (2018) [3, 8] uses high-frequency household data to study employment before and after demonetisation. Differences in data and identification strategies mean that these estimates should not be collapsed into a single national job-loss figure. The evidence is most useful for showing why employment outcomes require careful timing, comparison groups and attention to informal work that may be incompletely captured by official aggregates.
A decline in transactions can affect production even when a firm remains solvent. A small business may have assets and future demand but lack cash to meet wages, supplier bills or transport costs during a disruption. This is a working-capital and liquidity problem. Its effects may be concentrated among microenterprises, casual workers and businesses that cannot quickly shift to bank transfers or digital acceptance.

2. Informal and rural activity

Cash dependence is a practical feature of many informal and rural transactions, not evidence that the activity is illegal. Where cash is the main medium for wages, agricultural purchases and local trade, a rapid shortage can interrupt both household consumption and business operations. The costs are likely to vary with access to bank branches, replacement notes, mobile connectivity and nearby merchants that accept electronic payments.
A district-level average can conceal these differences. A comprehensive evaluation should disaggregate outcomes by enterprise size, employment type, rural or urban location, income group and access to financial services. It should also measure indirect costs such as travel time and delayed payments, which may not appear in conventional national output statistics.

3. Currency return, black money and tax compliance

Currency withdrawal is sometimes presented as a direct way to eliminate black money. That claim overstates what cash policy can achieve. Unreported wealth can be held in property, gold, business assets, foreign holdings and other financial or non-financial forms. A currency withdrawal can expose or inconvenience some cash holdings, but it cannot by itself remove the broader structures that sustain tax evasion or illicit finance.
The 2016 return of approximately 99.3 per cent of specified notes underlines the need to distinguish note return from tax results. Depositing a note records its entry into the banking system; it does not automatically establish that the underlying income was properly reported. Likewise, an increase in tax filings or collections after a policy must be assessed against prior trends, enforcement changes, economic growth and other concurrent reforms before it can be attributed to the currency action.

4. Digital payment adoption

The 2016 cash shortage contributed to a sharp practical incentive to try non-cash payment methods. Agarwal, Ghosh, Li, and Ruan (2024) use transaction-level data from a large supermarket chain and the differential exposure of consumers to the cash shock. They find that consumers with greater pre-event cash dependence increased digital-payment use after demonetisation; their analysis also reports higher spending among the affected consumers. This study provides micro-level evidence about payment substitution and consumption within its sampled setting.
That finding should not be generalized into a claim that demonetisation alone created India's digital-payment ecosystem. UPI, wider smartphone access, lower data costs, merchant adoption and policy initiatives developed alongside the event. A separate economy-wide analysis would be needed to estimate how much of the long-term shift was caused by demonetisation rather than by these complementary changes. Digital payments can improve convenience and record keeping, but they do not fully substitute for cash where connectivity, devices, accessibility, trust or merchant acceptance are lacking.

5. Bank deposits, credit and monetary transmission

When notes are deposited, bank balances rise, but the increase does not translate mechanically into productive lending. Credit expansion depends on borrower demand, creditworthiness, bank capital, risk appetite and the wider economic outlook. The 2016 [3] district-level evidence on credit suggests that the cash shock could coincide with short-term credit contraction in more-exposed locations, despite increased deposits at the national level (Chodorow-Reich *et al*., 2020) [2]. This illustrates why deposit totals alone are an incomplete measure of financial intermediation. Similarly, the effects on interest rates and money velocity depend on how households, banks and the central bank respond. A temporary reduction in usable transaction money can slow spending. Deposits may later support payments or lending, but the timing and extent are conditional. These are plausible transmission channels, not automatic outcomes of denomination withdrawal.

6. Policy credibility and public confidence

Currency is usable because the public trusts the rules governing its acceptance and conversion. Frequent or poorly explained changes may weaken confidence, especially if households fear that cash holdings can become unusable without adequate notice or access to exchange. Clear communication about legal status, deadlines, deposit channels, limits and exceptions is therefore an economic safeguard as well as an administrative requirement.

Discussion

The comparison between 2016 and 2023 illustrates the importance of scale and transition design. In 2016, a large share of currency value was affected over a short period, and the economy experienced a pronounced shortage of usable notes. The empirical evidence documents short-run losses in activity and credit for more-exposed districts. In 2023, the RBI kept legal-tender status in place and allowed notes to return through phased channels. The high share returned by early 2025 is compatible with orderly adjustment, though it does not establish the exercise's broader economic benefits.
The apparent gains and costs also differ by time horizon. Immediate liquidity disruption can reduce consumption and interrupt production. Over a longer period, payment adoption, formal records or improved currency quality may offer benefits, but these depend on implementation and complementary institutions. Evaluation should therefore report transition costs and durable outcomes separately, rather than relying on a single headline such as the volume of notes returned or digital transactions recorded.

Causal attribution remains a central challenge. Digital payments were already expanding, and other policy and technology changes affected formalisation and tax reporting. Likewise, macroeconomic trends after 2016 were shaped by events beyond demonetisation. The strongest studies use exposure variation and defined counterfactuals, but their estimates answer bounded questions. They should inform policy without being presented as complete measures of aggregate welfare.

Recommendations

1. State a limited set of measurable objectives. Currency management, counterfeit control, payment modernisation and tax enforcement require different indicators. A policy should not be declared successful against one objective solely because it achieved another.
2. Match the transition period to the denomination's circulation and the economy's cash dependence. Before implementation, assess how much transaction value and volume may be affected and whether replacement denominations can be distributed in time.
3. Preserve accessible conversion channels. Provide clear deposit and exchange procedures, sufficient branch capacity, accessible grievance mechanisms and reasonable arrangements for people with mobility, disability or distance-related barriers.
4. Protect cash-dependent groups and small firms. Publish contingency plans for rural areas, agricultural markets, informal workers and microenterprises. Maintain access to usable cash while encouraging digital payments through reliable infrastructure and voluntary adoption.
5. Publish an ex ante impact assessment and a post-policy evaluation. Report indicators for cash availability, bank service times, payments, employment, consumption, credit and business activity, with results disaggregated by geography and enterprise size.
6. Separate cash return from enforcement outcomes. Report note-return data alongside independently defined measures of tax compliance, suspicious deposits, prosecutions or counterfeit detection, with appropriate baselines and time periods.
7. Commission independent evaluation. Researchers should have access to anonymised, appropriately governed data and should test alternative explanations, counterfactuals and distributional effects. Findings should include uncertainty and limitations.

Limitations

This paper synthesizes existing studies and official records; it does not produce a new dataset or causal estimate. Studies differ in geographic coverage, outcome definitions and observation windows. The most detailed causal evidence concerns the 2016 [1] shock, so the 2023 experience cannot yet be treated as an equivalent natural experiment. Official currency-return figures are administrative measures and do not independently measure distributional welfare, illicit wealth or long-term productivity. These limits counsel against broad causal claims and support continued evaluation using transparent, disaggregated data.

Conclusion

Withdrawal of a currency denomination can range from routine currency management to a major economic shock. India's 2016 [1] demonetisation and 2023 ₹2,000-note withdrawal demonstrate that legal status, scale, timing and access to alternatives shape the consequences. The 2016 measure constrained liquidity and was associated in empirical research with short-lived declines in output, employment and credit in more-exposed districts. The 2023 process retained legal-tender status and used a phased return, enabling a substantially different adjustment path.

Potential benefits such as digital-payment use, improved traceability and more efficient currency management should be evaluated separately and against credible baselines. Neither a high note-return rate nor rising digital-payment volumes alone proves that a withdrawal reduced black money, expanded the tax base or improved welfare. Future decisions should be predictable, evidence-led and designed around the needs of people and businesses that rely on cash. Their success should be judged by whether the monetary system becomes more reliable and inclusive without imposing disproportionate costs on legitimate economic activity.

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