

ABSTRACT

The rapid growth of crypto assets has raised questions about their role within monetary systems, particularly in developing economies undergoing financial digitalization. In Indonesia, this issue has become increasingly relevant alongside the central bank's initiative to develop a digital rupiah, which calls for a clearer evaluation of alternative digital assets within a coherent monetary framework. However, empirical evidence linking Bitcoin dynamics to its feasibility as a restricted legal tender remains limited. This study aims to evaluate whether Bitcoin can function as a restricted legal tender in Indonesia.

*This study examines the relationship between Bitcoin volatility and inflation, exchange rate movements, monetary liquidity M2, and the policy interest rate using monthly data from 2012 to 2024. Bitcoin volatility is estimated using a GARCH model with Student *t* distribution to capture time varying risk and volatility persistence. Granger causality tests are employed to identify predictive relationships and to assess the linkage between Bitcoin dynamics and domestic monetary variables. In addition, a benchmarking analysis is conducted by comparing Indonesia with selected countries to evaluate the relative position of Bitcoin across different monetary system structures and levels of institutional readiness.*

The results show that conventional monetary variables exert weak and statistically limited influence on Bitcoin volatility at the monthly level, indicating the absence of strong monetary integration. Inflation exhibits predictive relevance only at longer horizons, while monetary liquidity M2 shows episodic bidirectional relationships that become more pronounced after 2020. Exchange rate movements are associated with Bitcoin dynamics only under specific market conditions. The high persistence of volatility suggests that Bitcoin price movements are primarily driven by internal market risk and uncertainty rather than domestic monetary transmission mechanisms. The benchmarking results further confirm that Indonesia does not yet meet the structural, stability, and institutional requirements necessary for Bitcoin to function as a restricted legal tender.

These findings indicate that Bitcoin lacks the stability, monetary integration, and functional capacity required to serve as a restricted legal tender in Indonesia, and instead behaves more as a speculative store of value than as a monetary instrument. This study contributes by integrating volatility analysis, causal inference, and cross country comparison to evaluate Bitcoin's feasibility within a monetary policy framework. From a policy perspective, the results suggest that the development of a digital rupiah represents a more stable and credible pathway for monetary innovation in Indonesia.

Keywords: *Bitcoin volatility, monetary stability, legal tender, inflation, exchange rate, money supply, digital rupiah.*