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The research is relevant in the current context, given the interest of some central banks in exploring CBDCs as one of the possible alternatives to the digitalization of payments.

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Abstract

We examine the optimal design of central bank digital currencies (CBDCs) by focusing on two key features: the anonymity-security trade-off and the remuneration (i.e., interest rate). Building on the extended model by Agur et al. (2022), which accounts for potential negative externalities associated with the anonymity of payment methods, we incorporate the possibility of multiple CBDCs into the framework. Our findings reveal that with optimally designed CBDCs and when anonymity costs are significant, a cashless economy is the preferred choice for the central bank. Furthermore, irrespective of anonymity costs, an economy with cash and one or more CBDCs is welfare dominated by a cashless economy with one additional CBDC. These results underscore the exibility and welfare-enhancing potential of CBDCs compared to cash in modern payment systems.