

Best Before? Expiring Central Bank Digital Currency and Loss Recovery

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Abstract

An important feature of physical cash payments is resilience, due to their independence of power outages or network coverage. Many central banks are exploring issuing digital cash substitutes with similar offline payment functionality. Such substitutes could incorporate novel features making them more desirable than physical cash. This paper considers introducing an expiry date for offline digital currency balances to automate personal loss recovery. We show this functionality could increase consumer demand for digital cash, with the time to expiration playing a key role. The optimal time to expiration should have short wait time to get lost money reimbursed but leave enough time for agents to deposit received offline balances. Setting the time to expiration a bit too long has minor impact on welfare but setting it too short dramatically reduce welfare. If the offline device provides information about past transactions to the central bank, the accuracy of loss recovery can be improved but welfare can decrease.

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