

Banking on Distributed Ledger Technology: Can DLT Help Banks Address Financial Inclusion?

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Overview

Access to financial services allows households to endure temporary financial hardship and build wealth, ultimately leading to improved economic outcomes (Raskin 2011, Brainard 2017)

- Banks enable households to deposit and save income, make payments, and obtain credit while offering substantial consumer protections (Gruenberg 2017)

Technology is considered a means to reach the unbanked

Purpose: Determine whether the features and benefits of distributed ledger technology can increase the share of fully-banked consumers

We argue that the benefits of DLT (mostly) cannot overcome the barriers to why people are un- or underbanked

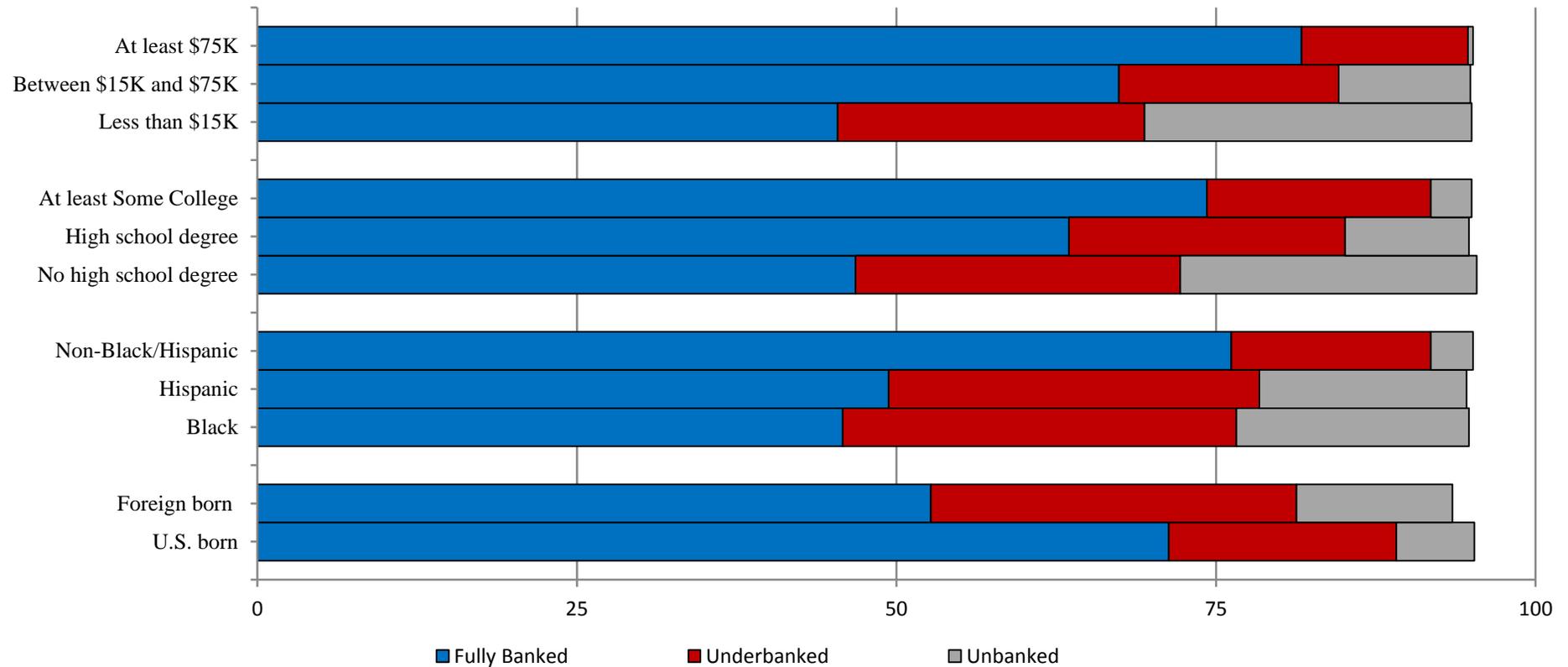
Benefits of Being Banked

Research has shown that consumers accrue substantial, long-term benefits when they choose banking products over those offered by AFS providers:

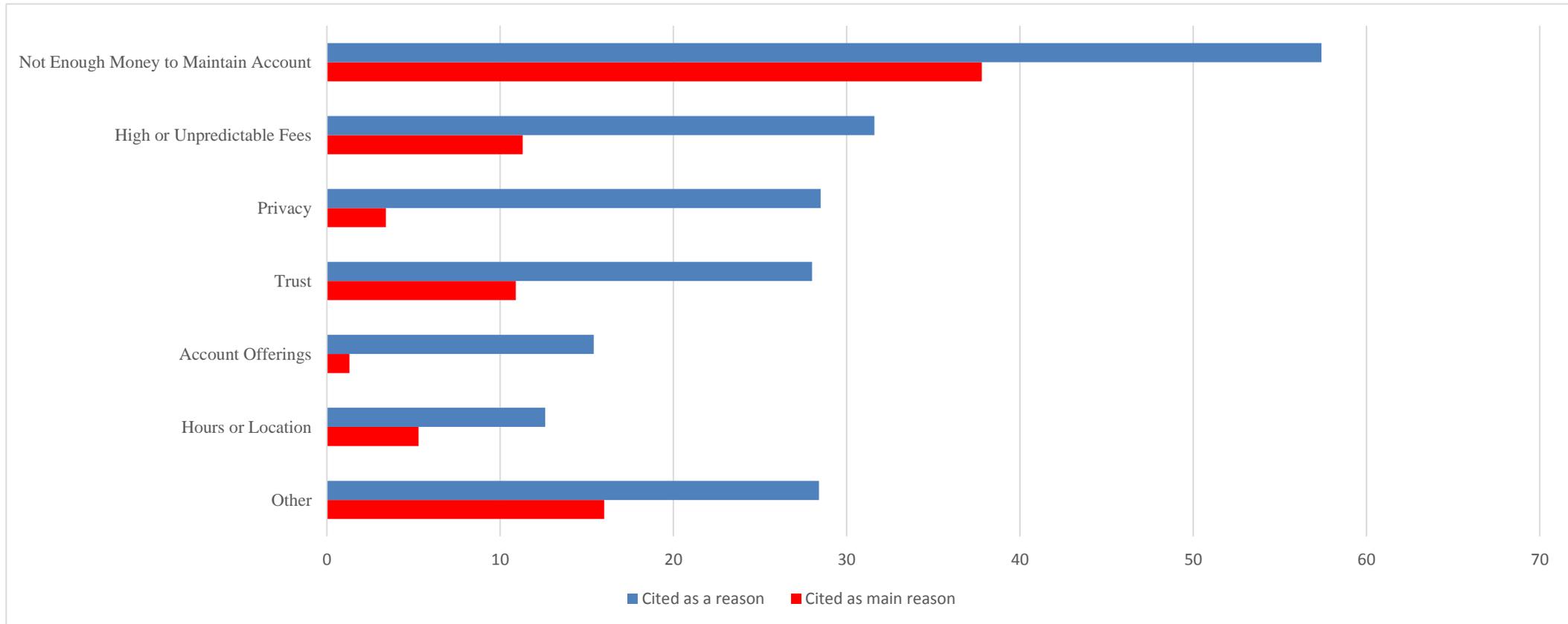
- Facilitate a storage mechanism that reduces the risk of loss and theft of financial assets (Barr 2004)
- Important savings and investment vehicle that enables households to accumulate wealth (Caskey 2002, Brainard 2017)
- High cost of basic financial services from AFS providers work to undermine redistributive income policies aimed at helping the poor
 - Substantial amount of check-cashing fees earned by AFS providers during the 1990s and early 2000s were generated from government transfer checks (Barr 2004)
 - Payments received through the Earned Income Tax Credit (EITC) are often used to pay down outstanding debt, some of which is likely debt issued by AFS providers (Beverly, et. al., 2005; Mendenhall, et. al., 2012; Baker 2017)
- Consumers outside the formal banking system are more likely to have credit problems (Caskey 1994)
- Evidence that children of consumers who use banks experience better financial outcomes as adults than those that grew up in households that lacked such exposure (Lusardi et al 2009, Brown et al. 2017)

Though many AFS providers are beneficial to a subset of the population, they offer only one-time services or temporary relief and do little to improve the long-term financial status of consumers (Baker 2017)

Who Are The Unbanked?



Why Are Consumers Unbanked?



A New Technological Solution: What Can Distributed Ledger Technology Do?

DLT is a series of technological procedures that allow distinct, untrusted parties to share an identical and agreed upon record of information.

Key Design Features:

- Decentralized Network Structure
- Shared Ledger Among All Participants

Key Benefits:

- Elimination of network frictions enabling cost and time savings
- Support of peer-to-peer transactions reducing complexity
- Immutability/finality of transactions due to ledger protocols
- Transparency/auditability of data for all parties, including regulators
- Improved network resiliency due to lack of single attack point

Can the Unbanked Access DLT Solutions?

Most likely implementation will resemble mobile banking.

FDIC data suggest that mobile phone ownership is high across banking status groups

Supermajority of all surveyed own a mobile phone.

Ownership is higher for underbanked than fully banked

- Pew (2016) suggests that phones provide sole access point for many LMI households
- Ownership is correlated with income, particularly smartphone ownership
- However, many major banks offer text banking services that do not require smartphones

DLT Enhanced Mobile Banking

- Unlikely to fundamentally change the mobile banking experience
- May facilitate service upgrades, but mobile banking already offers many convenient features:
 - 24-hour account access
 - Bill pay and check deposit
 - Account alerts providing better overdraft/NSF fee warnings

Does DLT Solve High Costs and Account Requirements?

Cost reductions from reduced liquidity needs and lower operational and maintenance costs could be passed to consumers through lower minimum balance requirements and fewer associated account fees

Unlikely that banks pass cost savings to unbanked households:

- Account fees represent a sizable share of total revenues
 - Account fees provide an important counterbalance to offset lost revenues during times of stress for banks
 - Banks are unlikely to reduce or forego that income
- Bank fees are historically driven by negative shocks to bank income and expenses
 - Repeal of Regulation Q's interest rate caps
 - Dodd-Frank's Durbin Amendment
 - Crisis era fee changes
- Policy initiatives focused on technology or lower account costs were generally unsuccessful
 - State lifeline accounts, EFT'99, Individual Development Accounts (IDA), Shorebank's EITC initiative
 - Suggests demand for low-cost accounts among the unbanked is low
 - Or, account demand is relatively unresponsive to small changes in banking service costs

Does DLT Solve Trust and Privacy Issues?

- Core group of cryptocurrency users do not trust banks
 - Unlikely their concerns are remedied by DLT usage at banks
- Shift to technological solutions may alienate consumers preferring relationship-based model
- Fully transparent ledgers are not a feasible business practice for banks
 - Don't expect DLT to increase transparency of bank business practices
- Inherent transparency and privacy trade-off due to regulatory barriers
 - Notably, 60 percent of those who list trust as the primary reason for being unbanked also list privacy
 - KYC and AML provisions make even pseudonymity unlikely
 - Full transparency requires disclosure of customer information
 - Shared systems may increase data-loss concerns

Does DLT Solve Inconvenience, Insufficient Product Offerings?

Distributed ledger technology has the ability to solve certain inconveniences :

Access: Despite assumptions that online and mobile banking should resolve issues regarding branch hours and locations, there is still room for improvement through DLT

- Non-electronic documentation processes prevent potential consumers from opening a bank account

Real-time transfer: If the need for immediate funds is the primary reason someone chooses to not have a bank account, consumers are likely better off opening a checking account to receive funds than paying the fees for a checking cashing service

- Faster check clearing and settlement
- More competitive remittances services between banks and nonbanks due to lower operational costs

Conclusion

Upgrading banking infrastructure with distributed ledger technology may be able to attract unbanked consumers who struggle with access issues and need real-time transfers

Unlikely that DLT will address the needs of those that are wary of high account costs, minimum account requirements, or have issues around trust and privacy with banks

DLT will ultimately help only a limited number of unbanked consumers in the United States because less than 10 percent list access concerns and insufficient product offerings as the main reason for being unbanked