

Cashless Economies

Three major risk scenarios

SEPTEMBER 2023 | PART 2



Horizon scanning insights

1

Some groups are likely to experience sizeable transition pain as they either do not have the technological or financial means to participate in the new, cashless world.

2

The abolition of cash is strengthening the position of the government in several ways. It is possible that undesired consumption patterns could be punished in a world that captures our every financial transaction.

3

Natural disasters, malicious cyberattacks and simple software failures could bring down electronic payment infrastructure, causing significant disruption to digital and interconnected cashless societies.

Introduction

Cashless Economies Part 1 explored the opportunities and potential risks associated with a global transition towards digital payment systems and centralized banking. In Part 2, economist Markus Kuger delves deeper into three potential risk scenarios.

As discussed in Part 1 of the series, the transition to cashless economies heralds a new era of effortless transactions, lubricating our global financial system. But it is not all plain sailing.

The advantages are multiple and include greater efficiency, ease of cross-border transactions, reduced crime, and tax avoidance. Meanwhile, there are social, technological and even political considerations that must be made, particularly around financial literacy and cyber security.

In Part 2 of our Cashless Economies series, economist Markus Kuger delves deeper into the following three specific risk scenarios:

- Risks for vulnerable and marginalized groups,
- Increased powers for the state, and
- Cyber risks and power outages.

The scenarios presented are relevant to business owners, risk managers, and policymakers, and consider the potential risks associated with purely digital financial systems. They will help organizations test business continuity plans and implement mechanisms to reduce the likelihood and impact of systemic threats.



Scenario one: Risks for vulnerable and marginalized groups

According to popular opinion, the complete switch from cash payments to electronic ones will benefit economies as whole transaction costs will fall. However, within societies, some groups are likely to experience sizeable transition pain as they either do not have the technological or financial means to participate in the new, cashless world.

According to the Peterson Institute for International Economics, elderly, undocumented and other more vulnerable members of society would face immense challenges should paper money be completely abolished.¹

Problematically, cashless payments often require consumers to have a bank account, and large proportions of society do not have accounts or even access to banks. While this is certainly the case in emerging markets (in 2021, the share of unbanked people stood at 71% in Morocco and 69% in Vietnam, according to information provider Merchant Machine²), most developed economies also do have notable proportions of their population that do not use banks.

% Share of Unbanked Population in the US by Ethnic Background

Race/Ethnicity	Unbanked (%)	Underbanked (%)	Fully banked (%)
White	3	10	87
Black	13	27	59
Hispanic	11	18	71
Asian	2	6	92
Overall	6	13	81

Source: US Federal Reserve

At one end of the spectrum, the Nordic countries (Denmark, Norway, Sweden and Finland) have an unbanked share of the population of close to 0% (the Nordics are also quite advanced in their transition to going completely cashless).

However, the UK unbanked population stands at 4%. When broken down by ethnic background, data from the Financial Lives 2020 survey (compiled by the UK Financial Conduct Authority³) shows that the share of BAME (Black, Asian or Minority Ethnic) citizens amongst unbanked individuals is disproportionately high: while 2% of white Brits do not have a bank account, 6% of Asian-background and 5% of mixed-background citizens are unbanked.

Data from the Federal Reserve Bank for the United States mirrors the UK findings:⁴ 6% of all adult US citizens were unbanked in 2021, but while only 3% of all whites had no bank account, this share rises to 11% for Hispanics and 13% for Americans of African descent. Just 2% of Americans of Asian origin are unbanked.

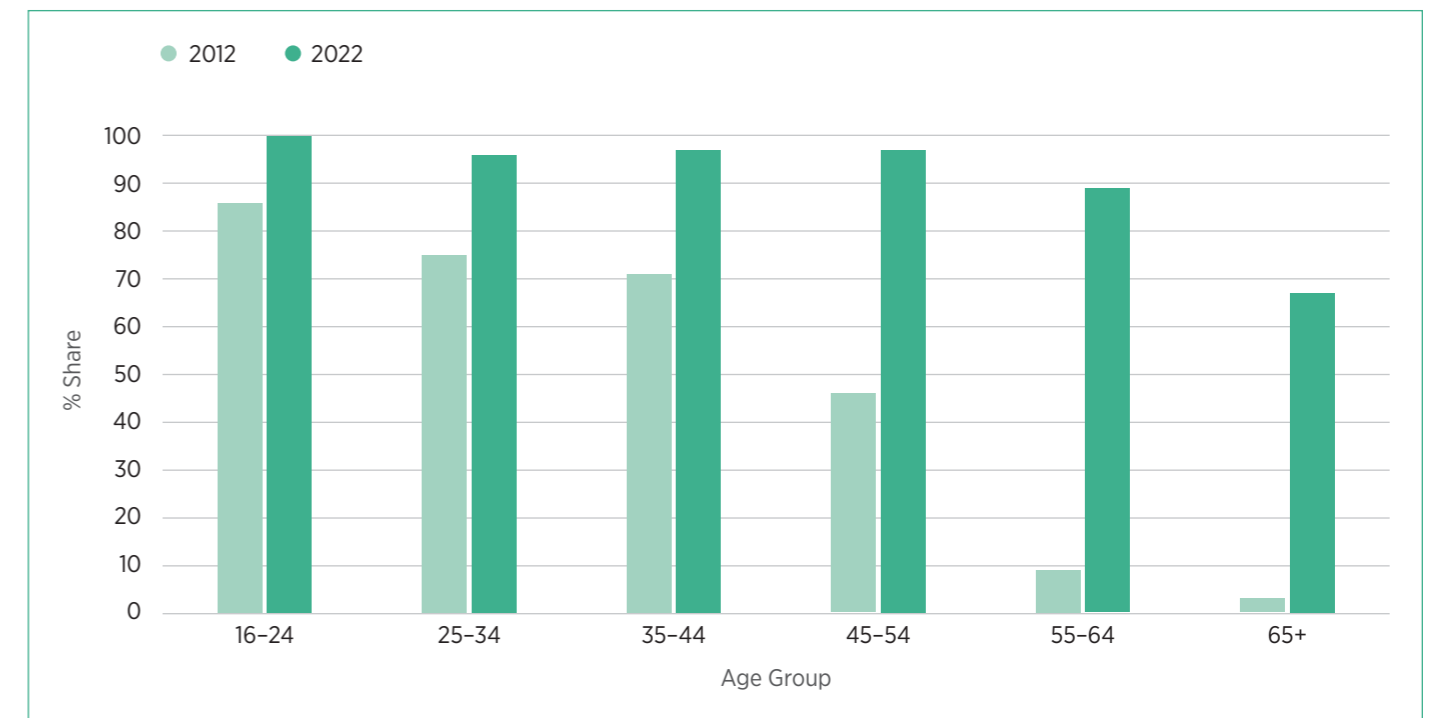
Meanwhile, from a generational point of view, the elderly are likely to be hit the hardest by a switch to a cashless economic system. This is ironic as, in theory, this group would benefit the most from a technology that requires less movement/travel and fewer personal safety concerns. That said, the inability or unwillingness to adopt new technologies will likely be most pronounced in this group.

Data from charity Age UK from mid-2021 (a period in which many older people were shielded amidst the COVID-19 pandemic) shows that 21% of all UK pensioners had used cash in the previous week, while two-thirds had used it in the previous month.⁵

Moreover, implementing a cashless society is coming at a time when the disappearance of ATMs and banks from UK towns, and especially villages, is already causing problems for this age group. According to government research, the number of ATMs dropped by 22% between 2018 and 2022, and the number of bank branches decreased by 40%.⁶

The lack of smartphone penetration in the 65+ age group is another obstacle to participation in cashless transactions as, besides having a bank account, ownership is a cornerstone of cashless payment infrastructure. Figures from Ofcom show that while virtually every British adult below the age of 54 now owns a smartphone, penetration rates drop to 89% for the 55-64 years cohort and below 70% for people older than 65 years.

Share of Smartphone Users in the UK by Age Group



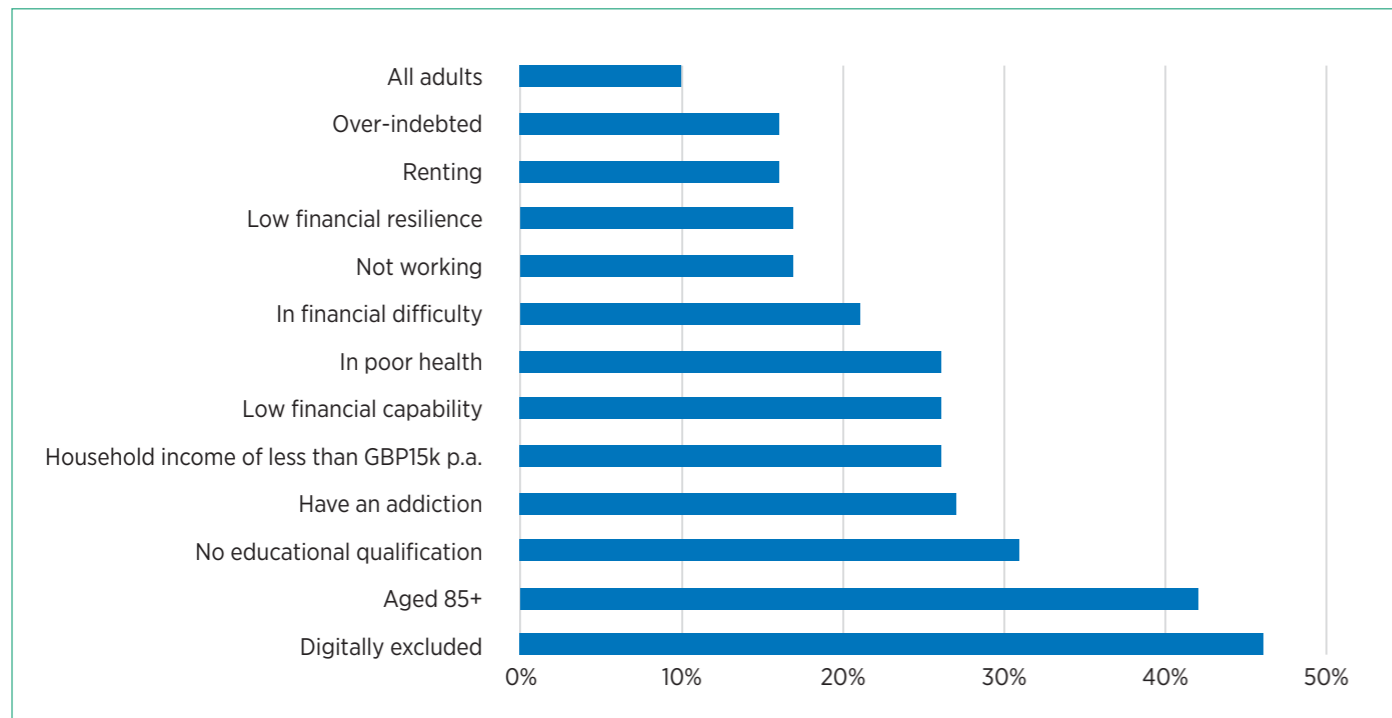
Source: Statista

On balance, the UK Parliament’s research body supports the view that economically vulnerable and older people are most likely to experience severe adjustment pains to a completely cashless world.

According to The House of Commons Library, 10% of UK citizens relied on a significant or very great amount of cash in February 2020.

However, this share rises to 46% amongst digitally excluded (people without access to the internet or never using it despite having access to it) and 42% in the 85+ age group. No educational qualifications (31%), having an addiction (27%) and a household income of less than GBP15,000 p.a. (26%) also increase the likelihood of relying upon cash to a great or very great extent.

Groups in the UK that Rely on Cash, February 2020



Source: The House of Commons Library⁸



Scenario two: Increased powers for the state

The abolition of cash is also strengthening the position of the government in several ways, from reducing consumers’ privacy rights (potentially, in a worst-case scenario, ending in a dystopian regime where undesired consumption patterns are punished) to increasing the likelihood of expropriation, either outright by seizing bank deposits or defacto by implementing an ultra-low interest rate policy.

Firstly, many data privacy rights activists are worried that transactions in a cashless economy are creating an ‘electronic paper trail’ and removing anonymity when dealing with companies. The consequences of this data collection exercise range from personalized adverts (admittedly probably not the biggest threat of a cashless society) to government agencies obtaining this privately-collected information about citizens.

While certain safeguards against the misuse of this data are in place in liberal democracies (such as the EU’s Global Data Protection Regulation), the one-party regime in China offers a glimpse of what is already possible from a technological point of view.

In its Social Credit System (developed, implemented and fine-tuned since the 2010s), citizens obtain a national credit rating. While bonus points are awarded for “praising the government online”, ‘engaging in charity work’, or ‘taking care of elderly family members’, deductions occur in the case of ‘illegally protesting against the authorities’, ‘committing traffic offenses’ or ‘participating in anything deemed to be a cult’.⁹

The Chinese government system is expected to leverage credit scores from domestic private companies such as Alibaba and Tencent.¹⁰ These are also based on consumers’ shopping patterns, which can be easily monitored in a cash-free economy.

In such a scenario, citizens’ access to the social welfare state will, to a certain degree, depend on compliance with government-encouraged behavioral patterns, something inconceivable for many voters in Western democracies.

It is more than just the state that could access payment data more efficiently in cashless societies. Privately-owned credit referencing agencies (Experian, Equifax and Schufa, to name a few) will be in a position to obtain this information more comprehensively, even in democratic states.

In theory, credit reference agencies could, in the future, punish citizens with a bad score for risky consumption patterns (such as purchasing alcohol, cigarettes or unhealthy food). Such a scoring model would make it more difficult for parts of society to access credit, depending on their preference for certain goods and services.

Recent developments have shown that the presence of cash could act as insurance against savers' expropriation, even in EU member states.

During the height of the Eurozone crisis in 2013, the government of Cyprus requested a bailout from the EU, the ECB and the IMF. One of the conditions of the lenders was that Cypriot bank account holders with a balance of more than EUR100,000 (the limit of the EU Deposit Protection Scheme) would have to participate in the rescue package. Capital controls that limited credit card transactions, money transfers and cash withdrawals were also put in place.

Uninsured account holders lost a sizeable share of their deposits. Admittedly, it would be challenging to safely store savings above EUR100,000 in cash; however, bank vaults could be used to protect savers against future 'bail-ins.' Such an option would no longer exist in a cashless society, and other asset classes (such as shares and property investment) in which excess savings could be channeled are also easy to tax by the government as electronic records exist.

The low-interest rate environment following the global financial crisis also highlights the protection savers can obtain from holding cash reserves. Between 2008 and 2021, interest rates hit rock bottom around the globe as inflation rates were ultra-low, and central banks tried to create upward pressures on consumer prices.

However, central bankers faced the so-called 'zero lower bound' problem during that period: nominal interest rates cannot drop below zero by a far margin. Switzerland ventured into negative territory more than any other country, but even there, the key policy rate only reached -0.75% in 2015. The logic behind the zero lower bound is that commercial banks implementing negative deposit rates (which largely follow central banks' key policy rates) would incentivize customers to withdraw cash, invest in other assets, or store it at home or in bank vaults.

The lower zero-bound problems would be less pressing for central banks in a cash-free society. Admittedly, other investment classes would still be available to savers, but these need more cash liquidity. Hence, interest rates could drop into negative territory by larger degrees in cashless societies, thereby 'effectively' expropriating savers.



Scenario three: Cybersecurity and power outage issues

Undoubtedly, the transition to a cashless society has beneficial impacts on certain types of crime. Denmark recorded zero bank robberies in 2022, according to data from Finance Denmark, for instance. This was down from almost one robbery per working day twenty years earlier.¹¹ Attacks on cash machines have also dropped to zero as Denmark has become a largely cash-free society: only 12% of all purchases in 2021 were paid in cash, according to the Danish Central Bank.¹²

That said, cybercrime poses an ever-growing risk to society, a trend that may be accelerated by a cashless environment. According to Tech Business News, the financial service industry was already the second most targeted sector by cybercriminals in 2022, after healthcare and ahead of retail.¹³

In the UK, the Cyber Security Breaches 2022 Survey,¹⁴ compiled by the Department for Digital, Culture, Media and Sports, showed that 39% of businesses had experienced a cybersecurity breach or attack. Large companies (72%) and finance and insurance firms (54%) reported above-average attack rates. While hacking online banking accounts (8% of all companies surveyed reported this type of crime) remained a relatively rare phenomenon, a cashless and more cyber-oriented payment architecture inevitably presents more criminal opportunities in the future.

In 2021, a ransomware attack on US tech provider Kaseya forced Swedish grocery store Coop to close all of its 800 shops as customer payments (those made in cash) could not be processed.¹⁵ Although Visa, Mastercard and Kaseya's problems were rectified within hours, this example illustrates how the transition to a cash-free society would inevitably increase the risk of outages and payment system failures.

Worryingly, in this light, rogue states are increasingly involved in this type of crime. Russian hackers frequently force European and American banks offline, and attacks have risen sharply following the invasion of Ukraine in February 2022.

In August 2023, Russian hackers targeted five Italian banks,¹⁶ and according to figures from cybersecurity firm Netscout, a successful attack will cost banks between GBP140,000 and GBP2 million (with additional losses as a result of damage to brand and reputation).¹⁷

Meanwhile, North Korea follows a different modus operandi. Rather than creating economic upheaval by paralyzing homepages, the communist regime steals money from international banks and cryptocurrency exchanges. According to a report from the UN Security Council, North Korea managed to rob between USD600 million and USD1 billion in cryptocurrency alone in 2022, a very high figure given that the country's domestic GDP is estimated to stand at around USD20 billion–USD25 billion.¹⁸ Looting banks and exchanges are the vital source of hard currency for North Korea, some of which is inevitably used to finance the state's nuclear weapons program.

Business continuity concerns

Even without hacker armies from rogue states endangering cyber security, the transition to a cashless society can create other sources of business continuity risk, frequently highlighted by natural disasters and power outages.

In February 2023, a powerful cyclone hit New Zealand's northern island, killing 11 people and leaving 225,000 households without electricity. The power outage was the most severe in 35 years, and some areas were without electricity for ten days. The catastrophe made it difficult to pay using cash (as some ATMs were down and shops remained closed during the blackout), and cashless payment options were even more restricted.

In the aftermath of the cyclone, the Royal Bank of New Zealand's assistant governor noted, "During natural disasters, cash becomes incredibly important as the primary form of payment."¹⁹

Similar developments could be seen in Puerto Rico in 2017, when the US Federal Reserve had to fly in bank notes following Storm Maria.²⁰ With natural disasters becoming more frequent and severe, the persistent move away from cash towards electronic money across many countries is a worrisome trend, particularly when there is a risk of power cuts.

Even without natural disasters and malicious cyberattacks, electronic payment infrastructure can fail. Millions of Mastercard customers could not make payments in June 2023 as a result of a software problem at US payment provider Stripe.²¹ Five years earlier, European Visa cardholders experienced similar issues when a hardware failure led to a five-hour-long disruption of services.²²

Closing thoughts

The march towards cashless economies remains inevitable, with numerous advantages to be gained along the way. These include increased simplicity and convenience and a reduction in crime and tax avoidance. But resilience should not take a backseat to efficiency.

Over time, generations will adapt to cashless societies, and security around digital financial infrastructure will become more robust. Due consideration to major risk scenarios at this stage of the evolution will ensure business activities can resume as quickly as possible if and when future financial systems are tested.

It is only by thinking through some of the potential scenarios—aided by events that have already occurred—that financial institutions, supervisors, policymakers, and other major stakeholders will be empowered to make the right decisions. It is clear, based on just these three scenarios, there is an urgent need to prioritize a ‘just’ transition to cashless economies.

Meanwhile, investment in cyber security, stricter laws on data privacy and other mechanisms to protect banking systems from exploitation and sabotage are needed to prevent some of the more alarming ‘Big Brother’ and rogue state threats.

From a corporate risk management point of view, business continuity is the underlying message. What are your contingencies when payments cannot be processed, and how do you resume daily activities as quickly as possible in a world where cash is no longer king?

About the Author



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Markus Kuger is an economist specializing in labor markets, monetary policy and European economics with more than a decade of experience in analyzing the global risk landscape. After working for the Economic and Monetary Affairs Committee of the European Parliament in Brussels, Markus joined Dun & Bradstreet’s Country Insight Services in London in 2010 and from 2018 as their Chief Economist. After returning to Germany in 2021, Markus currently works as a freelance economic consultant to multinational clients.

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