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Should we fear a cashless society?

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Abstract:

The rapid development of digital payment technologies has accelerated the global transition toward cashless societies, raising important questions regarding financial efficiency, market competition, and strategic risk. While cashless payment systems can reduce transaction costs, improve payment efficiency, and promote financial innovation, they may also generate concerns related to market concentration, privacy protection, financial inclusion, and systemic vulnerability. This paper aims to examine whether a cashless society should be regarded as a source of economic progress or a potential threat to social welfare. This study adopts a qualitative analytical approach by integrating theories from industrial organization, digital finance, and welfare economics. It evaluates the economic benefits and potential risks of cashless payment systems through comparative analysis of digital payment platforms, network effects, market structure, and the emerging role of central bank digital currencies (CBDCs). Relevant theoretical literature and international case studies are used to support the discussion.

The findings suggest that the welfare consequences of a cashless society depend less on the disappearance of cash itself than on the institutional and competitive environment in which digital payment systems operate. Excessive market concentration resulting from network effects may weaken competition, reduce consumer welfare, and increase strategic risks. Conversely, effective competition policies, data governance, and well-designed CBDCs can mitigate these challenges while preserving the efficiency gains of digital payments.

This paper contributes to the literature by providing an integrated framework linking digital finance, market competition, and strategic risk. It further offers policy recommendations aimed at balancing technological innovation, financial inclusion, and market regulation, thereby supporting the sustainable development of future digital payment ecosystems.

Keywords: Cashless society, Digital payment, CBDC, Market power, Network effects

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1. Introduction

Most people believe that a cashless society represents higher efficiency, lower transaction costs, and a more advanced financial system. Therefore, people usually regard the disappearance of cash as a natural result of economic progress. However, this viewpoint overlooks a key economic question: Will the improvement in efficiency is at the cost of competition, privacy, and economic freedom, when the payment system shifts from a public currency issued by the state to a private network which controlled by a few digital platforms [1]?

This essay argues that what we really need to worry about is not the cashless society itself, but the concentration of market power that a cashless society may create. Although digital payments can reduce transaction costs and improve economic efficiency, Network effects and platform monopolies may gradually shift the payment market away from a competitive state, reducing social welfare [2]. Therefore, concerns about a cashless society do not stem from technological progress, but from the power imbalance that arises from the combination of technology and market structure.

Judging whether a cashless society is worth worrying about should not be based on personal preferences, but on whether it reduces social welfare. From an economic perspective, the social value of a payment system depends on whether the marginal social benefit (MSB) it creates exceeds the marginal social cost (MSC). The convenience, speed, and reduced transaction costs brought by cashless payments constitute social benefits; Monopoly, privacy loss, social exclusion, and systemic risk constitute social costs [3]. Therefore, this article will compare these benefits and costs to determine whether a cashless society is worth worrying about [4].

2. The Risks of a Cashless Society

From the perspective of supporting a cash flow society, cash flow society first leads to privacy breaches.

2.1 Privacy and Data Security

Privacy is not just a moral right, it is also an economic resource. Digital payment platforms can establish consumer profiles by collecting transaction data and utilize information advantages for price discrimination. When enterprises grasp consumers' consumption habits, income levels, and purchasing preferences, different consumers may be charged different prices. Although price discrimination can improve market efficiency in some cases, it may also transfer more consumer surplus to platform enterprises. Therefore, privacy issues in a cashless society not only involve individual freedom, but also involve the redistribution of market forces.

2.2 Consumer Choice and Financial Inclusion

Secondly, it will infringe upon consumers' right to choose. As consumers, one should be able to choose any payment method from cash, bank card, mobile phone, or other devices at will. Merchants cannot and should not force users to make payments using only bank cards or mobile phones. Thirdly, it will exacerbate social inequality. In addition to the population who can use cashless payment methods normally, there are also many vulnerable groups such as the elderly, children, people with disabilities, and those living in underdeveloped areas. They have a low acceptance of emerging payment methods, do not have smartphones, do not know how to access the internet, and even do not have bank accounts, making it difficult to promote and apply new payment methods among them.

2.3 Systemic Risk in Digital Payment Systems

Fourthly, a cash society heavily relies on information transmission technology, and once a network outage occurs, payments cannot be made. If natural disasters such as earthquakes occur and infrastructure is damaged, electronic payments cannot be made, and a society's normal life is paralyzed.

2.4 Platform Monopoly and Market Power

The last and most important point is that it is easy for payment to be monopolized by a few institutions, resulting in unreasonable pricing. A cashless society can lead to the evolution of the payment market towards a monopoly or oligopoly structure, resulting in a decrease in resource allocation efficiency [5]. Digital payment platforms typically have significant network effects, reflected in the fact that the more users there are, the higher the value of the platform to each user, which strengthens the winner takes all market landscape. Meanwhile, due to high capital investment, switching costs, and barriers to entry, new entrants find it difficult to form effective competition. So a cashless society will enhance consumers' dependence on a few platforms, giving the platforms stronger market power. Monopolistic enterprises follow the principle of maximizing profits, produce at the output level of MR=MC, and set prices based on the demand curve. Due to the downward slope of the demand curve, the MR curve is located below it, resulting in P>MC. At this time, the market has not achieved allocating efficiency. Compared to a perfectly competitive market, monopoly can lead to a decrease in production Qm<Qc and an increase in price Pm>Pc, typically due to WeChat's withdrawal fees, which compress consumer surplus and result in deadweight loss. China mobile payment market has long been dominated by Alipay and WeChat payment. According to open market research, the two platforms have long held the vast majority of the mobile payment market share. This

indicates that network effects can effectively improve payment efficiency, but at the same time, they may also form a duopoly structure, causing consumers and merchants to have strong dependence on a few platforms.

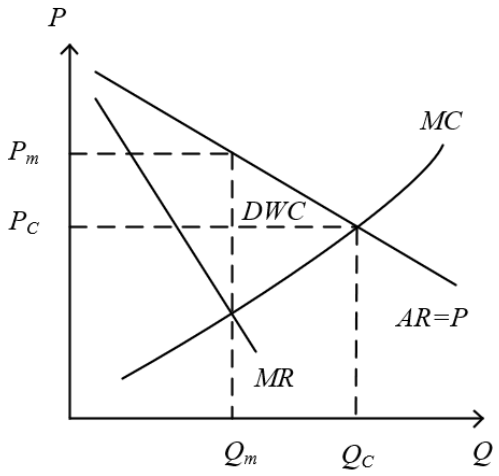

Figure1: Comparison of Monopoly and Perfectly Competitive Market Structures

3. Economic Efficiency versus Market Concentration

3.1 Network Effects and Economies of Scale

However, high concentration in the payment market does not necessarily mean a decline in social welfare. Unlike traditional monopolies, digital platforms have significant economies of scale and network economy. When more users join the same payment system, the value of the entire network will increase. If the market is excessively segmented, consumers will instead have to bear higher search and transaction costs. Therefore, a certain degree of market concentration may be a source of efficiency rather than market failure [6].

3.2 Government Regulation and Competition Policy

On the one hand, monopolistic platforms can reduce average costs, improve production efficiency, and compensate for efficiency losses caused by monopolies through economies of scale and economies of scope. On the other hand, in reality, the market pattern of the payment market is often oligopolistic competition, and companies can enhance market activity through behaviors such as price competition. The government can also weaken market power by government intervention such as anti-monopoly policies and price regulation. Whether a cashless society will inevitably lead to serious welfare losses depends on the degree of market competition and the effectiveness of regulatory mechanisms.

4. The Continuing Role of Cash and CBDCs

From the perspective of supporting cash retention, cash has at least four irreplaceable advantages.

4.1 Why Cash Still Matters

Firstly, cash is more inclusive. In areas with poor network signals or even no Internet coverage, cash is much more flexible than digital currency. Secondly, in response to unexpected situations such as power outages or natural disasters, electronic payment systems are likely to malfunction, while cash can still be used normally. The third is anonymity and privacy protection. Cash transactions have a level of privacy that electronic payments cannot match. For those who are concerned about their personal data being tracked, cash provides a way of consumption without leaving any digital traces. Fourthly, cash is crucial for the informal economy, such as street vendors and local service providers, as they rely on cash for instant settlement without the need to access complex electronic payment systems.

4.2 Limitations of a Fully Cashless Society

Overall, the advantages and disadvantages of a cashless society largely depend on the specific institutional environment and market structure. The viewpoint supporting a cashless society is often based on several ideal assumptions, such as a fully competitive payment market, strong government regulatory capabilities, and equal access to digital technology for the vast majority of people. However, in reality, not all of these conditions may be met.

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For example, if the digital payment market is highly concentrated due to "network effects," even if the technology itself improves efficiency, the pricing power and resource misallocation caused by monopoly may still harm overall welfare. In addition, although the traceability of transaction data helps improve policy efficiency, it must be based on strict restrictions on data use, otherwise privacy risks will significantly increase. It can be said that the advantages of a cashless society are more reflected in "ideal conditions", while its risks are more easily exposed in "real conditions".

4.3 Central Bank Digital Currency as an Alternative

A often overlooked issue is that a cashless society does not necessarily mean private platform domination [1]. Central bank digital currency (CBDC) may provide a third option [7]. Unlike Alipay or Visa, CBDC is issued by the Central Bank, so it can retain the public attributes of currency. If designed properly, CBDC can provide convenience for digital payments while also limiting the market power of private platforms [8]. Therefore, what we need to worry about may not be a cashless society, but a cashless society lacking public digital currencies.

5. Conclusion

This paper has argued that the central issue surrounding a cashless society is not the disappearance of physical cash itself, but the concentration of economic and informational power that may emerge within digital payment ecosystems. While cashless payment systems can significantly reduce transaction costs, improve efficiency, and promote financial innovation, they may also generate substantial risks associated with market concentration, data privacy, financial exclusion, and systemic dependence on a small number of dominant platforms.

Drawing upon theories of network effects, platform competition, and social welfare analysis, this study demonstrates that the overall impact of a cashless society depends largely on the institutional environment in which digital payments operate. In highly competitive and well-regulated markets, digital payment systems can enhance welfare and stimulate economic growth. However, when network effects create barriers to entry and strengthen monopoly power, efficiency gains may be accompanied by reduced consumer welfare and weakened market competition.

The emergence of Central Bank Digital Currencies (CBDCs) provides a potential solution to this dilemma. By preserving the public nature of money while maintaining the convenience of digital transactions, CBDCs may help balance efficiency, competition, and financial inclusion. Consequently, policymakers should focus not on resisting technological progress, but on designing regulatory frameworks that prevent excessive market concentration, protect consumer data, and ensure equal access to digital financial services.

This study contributes to the growing literature on digital finance by linking the debate on cashless societies to issues of market structure and strategic risk. Nevertheless, the analysis is primarily conceptual and qualitative in nature. Future research could employ empirical methods to investigate the relationship between payment market concentration, consumer welfare, and financial inclusion across different countries and institutional contexts.

Ultimately, the question is not whether society should fear a cashless future, but whether it can develop governance mechanisms capable of ensuring that the benefits of digital finance are distributed broadly rather than concentrated in the hands of a few powerful actors. The future of money will be determined not only by technology, but also by the institutions that govern it.

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