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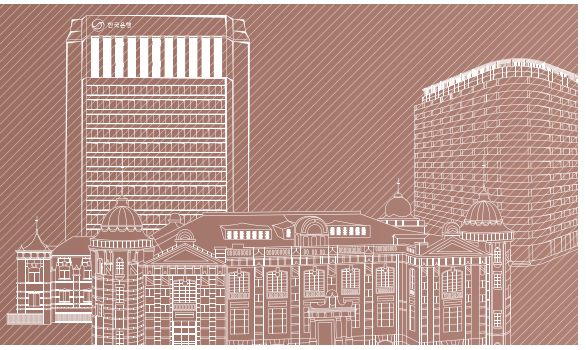
Public Demand and Financial Implications for Retail CBDC: A Randomized Survey Experiment



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The views expressed herein are those of the authors, and do not necessarily reflect the official views of the Bank of Korea. When reporting or citing this paper, the authors' names should always be explicitly stated.

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Public Demand and Financial Implications for Retail CBDC: A Randomized Survey Experiment

This study investigates the public demand for retail Central Bank Digital Currency (CBDC) and its implications for financial intermediation by focusing on its potential substitution effects on existing digital payment methods and viability as a store of value. Using an information-provision survey experiment, we analyze public responses to technically various CBDC issuance types, including online and offline applications and a physical card type, with and without interest payments. The survey experiment finds that, while CBDC design features do not significantly influence its demand as a payment method, offering positive interest payments can enhance its appeal as a store of value. Moreover, it indicates that payment practices and trust in central banks would have a greater impact on demand for CBDC than its technical design features.

Keywords: CBDC, Privacy, Demand for CBDC, Issuance Type, Survey Experiment

JEL Classification: E41, E58, G11

I. Introduction

Over recent years, a large number of central banks around the world have been engaged in Central Bank Digital Currency (henceforth, CBDC) works such as research and pilot tests.[1] According to Iorio et al. (2024), 94% of 86 central banks that responded to the survey on CBDCs and Crypto are working on CBDC projects as of late 2023.[2] A few countries, such as the Bahamas and Nigeria, have adopted CBDCs, and in their cases, the primary objective is to focus on financial inclusion to improve accessibility to financial markets and digital payment methods for the unbanked and underbanked population due to the underdeveloped financial infrastructure.

CBDCs are categorized into two types as a digital form of cash: retail and wholesale, depending on their target users. A wholesale CBDC is primarily intended for use by financial institutions, central banks, and other large-scale entities involved in financial markets. It is used for interbank settlements, payment and settlement systems, and the management of financial assets. On the other hand, a retail CBDC is designed for use by the general public. It operates as a digital version of cash and can be used for various transactions, including everyday purchases and online payments. In particular, a retail CBDC could have a significant impact on the overall financial market and payment systems since it is used by all economic agents within an economy. Above all, it can potentially weaken the financial intermediation and payment services functions of existing financial institutions by excessively replacing financial assets and payment methods, such as bank deposits. Moreover, this could limit the transmission channels of monetary policy and render the receiving end of financial institutions vulnerable, potentially leading to a weakening of the effec-

1) For instance, ECB announced, "After two years, the Governing Council will decide whether to move to the next stage of preparations, to pave the way for the possible future issuance and roll-out of a digital euro." on October 18th, 2023 (Source: Reuters, Last access on Dec. 21, 2024). South Korea will launch a central bank digital currency (CBDC) pilot program involving 100,000 citizens, jointly managed by the Bank of Korea (BOK), the Financial Services Commission (FSC), and the Financial Supervisory Service (FSS) in the fourth quarter of next year, as announced on November 23rd, 2023 (Source: ECB Press Release, and Korea Times. Last access on December 21, 2024).

2) According to the annual BIS survey report (Iorio et al., 2024), the share of central banks engaged in CBDC works has been monotonically increasing from about 65% in 2017 to 94% in 2023.

tiveness of monetary policy, financial instability, and a decline in real activities[3] (Williamson, 2022; Davoodalhosseini, 2022; Niepelt, 2020; Assenmacher et al., 2024). Therefore, if considering the issuance of retail CBDC, it is essential to conduct research on public demand for CBDC and the substitution effects of CBDC. However, our understanding of the demand for retail CBDCs and how responses of financial intermediaries such as banks to CBDCs affect the CBDC demand is still limited.

This study investigates the public demand for a retail CBDC across issuance types distinguished by whether they offer additional offline functionality: an online app, an online app with an offline app, and an online app with an offline app and a physical card.[4] The types determine the level of privacy protection, which has been discussed in existing literature as likely to significantly influence the demand for CBDC (Choi et al., 2025; Ahnert et al., 2022; Agur et al., 2022).[5] In addition, we consider cases where central banks pay positive interest on a CBDC in order to examine the demand for a CBDC as not only a medium of exchange (henceforth, MOE) but also a store of value (henceforth, SOV). More specifically, the questions that this study aims to address are the following. When introducing a retail CBDC, to what extent will the currently used digital payment methods such as bank deposits and credit cards be substituted with a CBDC? How will its issuance type, i.e., the level of privacy protection, influence the substitution effects of such a retail CBDC? Will interest payments on CBDC affect its demand? How will additional income affect liquid asset portfolios, including retail CBDC, and will they vary by issuance format? Furthermore, will societal factors such as public trust in the central bank, educational level, and gender influence the demand for CBDC?

We design an information-provision survey to answer those questions as follows.

3) As regards this issue, Fabio Panetta, Member of the Executive Board of the ECB, at the Committee on Economic and Monetary Affairs of the European Parliament expressed concerns that a Digital Euro is "too successful" and thus it can potentially crowd out private payment solutions and disturb financial intermediation in his speech on March 2022.

4) Throughout this paper, we succinctly refer to an information transmission technology that uses the Internet as 'online' and a technology that uses Near Field Communication (NFC) as 'offline.' For instance, an offline card refers to a physical card that operates via NFC.

5) The provision of transaction privacy has long been acknowledged as one of the key functions of money. Among others, Kahn et al. (2005) emphasize that money provides anonymity in purchases, which credit-based transactions cannot match. This underscores why privacy considerations are pivotal in determining public preferences for CBDC designs.

The survey considers technical issuance types with the main characteristics, such as on/offline use with/without transaction privacy protection and interest payments. Specifically, survey participants are randomly divided into one of five subgroups, and we introduce one of five different issuance types of CBDC to each subgroup to analyze the treatment effects across CBDC design types. The first type is an online mobile app-based CBDC, which can be built on mobile devices such as smartphones; the second is an online and offline mobile app-based CBDC; the third is an on/offline app-based CBDC and an offline physical form of CBDC storing card; the fourth is an online mobile app-based CBDC with positive interest; and the fifth is an on/offline app-based CBDC with positive interest and an offline physical form of CBDC storing card. What is noteworthy in CBDC types is that online mobile app-based CBDC is relatively inferior to offline mobile app-based CBDC and CBDC storing cards in terms of transaction privacy protection because detailed information about CBDC transactions is recorded in digital ledgers through Internet connections, but online CBDC is still superior to payment methods issued by commercial banks and private firms in the sense that the central bank does not use the transaction data for commercial use. The different types of CBDC discretely determine the relative level of privacy protection. Then the survey participants answer how much they are willing to substitute payment methods and liquid assets into CBDC, and how much the commercial banks and mobile pay service providers should provide additional benefits for using their payment methods to offset the substitution effects of the CBDC. Lastly, they are asked to report information on other individual characteristics that will be used as control variables.

The survey results show several novel findings. First, the overall frequency of CBDC usage as a payment method turns out to be 21.8%. This is similar to those of credit cards (21.7%) and mobile payment service apps (21.4%). The largest decrease (8.2%p) after the CBDC adoption is observed in the frequency of debit card usage. This would result from the facts that debit cards are relatively inferior to credit cards and mobile payment service apps in terms of convenience and benefits such as discounts and point accumulation, and that they play the most similar role as cash in transactions, compared with the others. Second, the specific design features of CBDCs do not significantly influence the demand for CBDC as a payment method overall. This may be due to respondents' limited concerns about transac-

tion privacy and their relatively low perceived need for offline functionality. Indeed, our survey shows that relatively few individuals use physical cash primarily for privacy protection, and awareness of offline functionality—namely, the importance of cash's independence from technology—remains low. Furthermore, this finding could be closely tied to the strong trust in the central bank and government, which reduces the impact of different CBDC types on demand, because, regardless of their design features, all CBDCs are ultimately issued by the central bank. Third, although overall CBDC demand as a payment method appears insensitive to design features, the physical card-type offline CBDC—which enhances privacy protection—significantly decreases carrying cash in respondents' liquid asset portfolios, including precautionary cash holdings, demand deposits, and savings deposits, by approximately 6 to 7 percentage points.[6] On balance, evidence on privacy protection design is mixed, as it affects cash substitution but not overall payment choice. Lastly, the portfolio choice for the newly endowed income is affected by interest payments. Offering positive interest rates on CBDC holdings increases the overall demand for CBDC. This suggests that survey participants might view the CBDC as an alternative store of value rather than a payment method in this scenario.

Based on our survey results, we discuss several policy implications. Setting an appropriate holding limit such as EUR 3,000—approximately equivalent to KRW 4,250,000—can be beneficial, as it can prevent excessive substitution away from bank deposits, while still allowing users to benefit from CBDC holdings. At the same time, the demand for CBDC is strongly influenced by individuals' willingness to adopt new technologies and their trust in the central bank, suggesting that effective communication and trust-building will be as important as technical design choices in shaping adoption. Finally, the results indicate that some individuals exhibit a persistent preference for CBDC that is not easily altered by financial incentives from banks or payment service providers. Taken together, these findings underscore the importance of a policy framework that balances innovation with the stability of the financial system.

A growing body of research explores the multifaceted factors that affect demand for CBDCs, financial intermediation, economic allocations, and welfare. We con-

6) However, the design features of CBDC do not significantly affect the other assets in the portfolio.

tribute to the literature in two ways. First, this study is closely related to the literature that utilizes survey data to investigate attributes that generate demand for CBDCs and demand itself. Utilizing a discrete choice experiment, Choi et al. (2023) investigate the preferences of individual respondents regarding the key attributes of payment methods. The estimated preferences were then used to forecast the payment preference for CBDC, characterized as a combination of payment attributes. The predictions from the simulation indicate that approximately 20% of the respondents selected CBDC as their most preferred payment method, closely aligning with our results. Fujiki (2023), using Japanese survey data, finds that consumers prefer payment methods with shorter transaction times and mobile functionality. Simulations suggest that while a mobile non-cash payment method would be widely adopted, its popularity would be lower among individuals facing financial constraints, such as limited income or economic hardships. This indicates the need for targeted policies by the Bank of Japan to encourage the widespread adoption of a CBDC. Huynh et al. (2020), using data from the Bank of Canada's survey, model how Canadian consumers choose between cash, debit, and credit, considering factors like transaction costs, ease-of-use, affordability, and security, along with demographic influences. They perform simulations with different designs of a CBDC and show that even an optimal CBDC combining the best features of cash and debit would not fully replace the existing payment methods; to do so, the CBDC must be significantly easier to use, more cost-effective, and more secure. Similarly, Li (2023) uses a Canadian survey and provides a structural model to predict household demand for CBDC under various design scenarios, finding that demand varies from 4% to 55% of liquid assets based on key attributes like anonymity, cost, and return. Gross and Letizia (2023) present a structural model assessing the impact of introducing an optionally interest-bearing CBDC on banking and monetary systems, predicting significant shifts in money shares, deposit rates, reserve needs, and monetary policy effectiveness. Our work is complementary to the previous studies but distinguished from them as we aim to enhance respondents' understanding of CBDC and other digital payment methods by directly and specifically presenting various forms of CBDC that are likely to be implemented in the future. Through this, we attempt to derive more direct and accurate preferences for CBDC.

Moreover, this study contributes to the literature on model-based studies that

analyze the effects of introducing a CBDC on financial intermediation, monetary policy, and financial stability. Strong demand for CBDCs might lead to decreased lending activities of financial intermediaries by substituting existing financial assets such as bank deposits. This undermines their roles of intermediating funds in financial markets through mitigating asymmetric information problems. Barrdear and Kumhof (2022) show that issuing a central bank digital currency (CBDC) could increase GDP by 3% and improve monetary policy effectiveness, as shown in a DSGE model calibrated to pre-2008 US data, with minimal risks to banks if managed correctly. Andolfatto (2020) explores the impact of central bank digital currency on monopolistic banks, finding it doesn't hinder lending and might enhance it by increasing deposits and financial inclusion. Chiu et al. (2023) models the impact of a central bank digital currency (CBDC) on private bank intermediation, finding it can boost competition, increase deposit rates and lending, and raise overall economic output, with effects persisting despite bank market changes. Similarly, Lee (2023), Davoodalhosseini (2022), and Keister and Sanches (2022) use monetary search models to analyze the effects of introducing CBDC on economic allocations and the optimal monetary policy. This study serves as an important foundation for subsequent research and policy discussions related to the economic model-based analysis of CBDC. In particular, the main findings of this study can inform policymakers and central banks in their approach to developing and implementing CBDCs.

The remainder of the paper is organized as follows. Section II describes how we designed and conducted the experimental survey. Section III presents the survey results to analyze the average treatment effects on demand for CBDC. In addition, we discuss the effects of limiting CBDC holdings and the average effects of socioeconomic variables such as gender and age in Section IV. Lastly, we conclude in Section V.

II. Experimental Design

To examine how the introduction of a retail CBDC with different types and features would affect public choices of media of exchange and stores of values, we conduct the information-provision experiment in a survey form. Information-provision

experiments aim to examine the treatment effects of the different information sets provided in the course of a survey, given that the survey samples are randomly drawn from the same population distribution. The literature using information-provision experiments has been fast emerging in economics, with applications in macroeconomics, finance, political economy, public economics, labor economics, and health economics (Haaland et al., 2023).

The information-provision experiment is best suited to address our research questions at least for two reasons. First, a retail CBDC has not been introduced to Korea, but the infrastructure for the introduction is well-developed. For example, the Internet penetration rate is 97.6% as of October 2023[7] and a total of 64.19 million cellular mobile connections were active in early 2023, with this figure equivalent to 123.9% of the total population.[8] Thus, the responses to the provided information are less likely to be affected by the survey respondents' subjective belief about the infrastructure enabling the presented digital form. Second, although many central banks have discussed many features and types of retail CBDCs, no known type is considered to be a "default," so the information can be provided without filtering survey respondents' subjective beliefs about what a retail CBDC ought to be. These two reasons make the interpretation of the treatment effects free from the concerns of compounding factors.

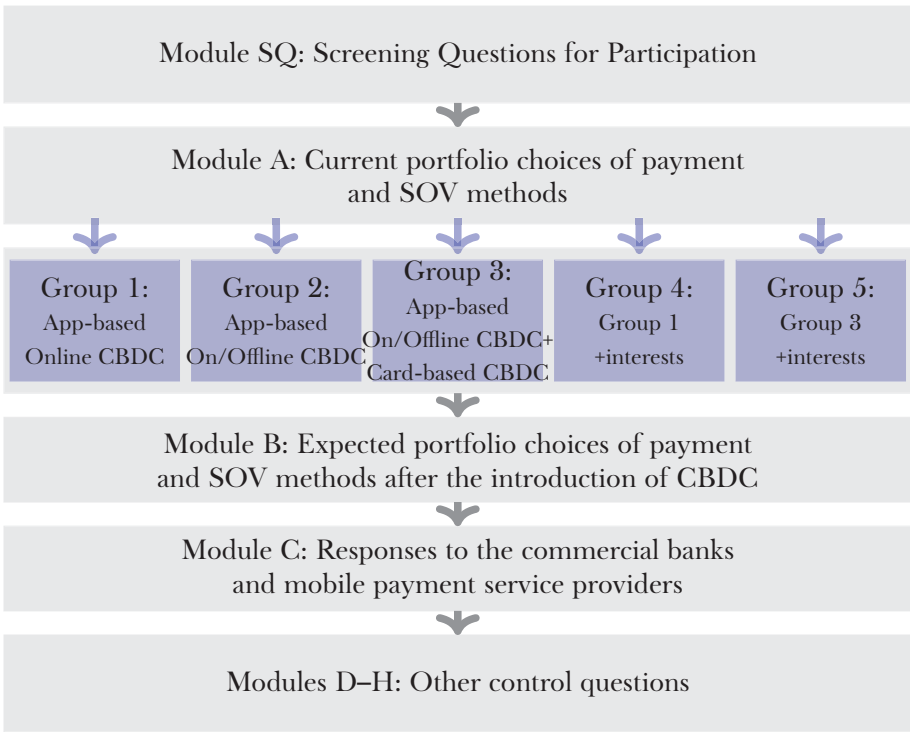
Beginning with a screening module on respondent characteristics, the whole survey consists of nine modules, including a module asking to recall the current use of payment methods and allocation of cash and cash-like products, and another module asking to anticipate the expected use of payment methods and allocation of cash and cash-like products. Our main treatment is to introduce a retail CBDC with different forms and features between such two modules. Figure 1 shows how the survey experiment is conducted. Upon participating in the survey, survey respondents answer their demographic characteristics in Module SQ so that each group is equally representative of the entire survey population in terms of gender, age,

7) DataReportal, und We Are Social, und Meltwater. "Countries with the highest internet penetration rate as of October 2023." Chart. October 19, 2023. Statista. Accessed November 14, 2023. https://www.statista.com/statistics/227082/countries-with-the-highest-internet-penetration-rate/

8) DataReportal, und We Are Social, und Meltwater. "Digital 2023: South Korea" retrieved from https://datareportal.com/reports/digital-2023-south-korea on November 14, 2023.

region of residence, and education attainment. Next, without knowing which type of information will be given, the respondents report the current ways of using various payment methods in Module A,[9] including cash, debit cards, credit cards, and mobile payment services[10], and the current ways of holding current liquid assets and hypothetically endowed liquid assets.

Figure 1. Experimental Design



Then, the survey participants are randomly split into one of the five subgroups, and participants in each group receive information about a retail CBDC with differ-

9) The (translated version of the) questionnaire is, "Which payment methods do you use in your household to make purchases? Please answer in 1% units for each entity so that the total sums to 100% of your spending."

10) Bank transfers, prepaid cards, and gift cards are collectively grouped as "other payment methods," which account for only a small fraction of the entire transactions. According to the Bank of Korea report "Survey results on the usage of payment methods and mobile financial services in 2021", only 7.9% of the entire transactions in 2021 were made by these other methods. In our survey, the other payment methods account for 10% of the transactions.

ent forms and features. Specifically, Group 1 participants were informed that the central bank considers introducing a retail CBDC, and its form will be a mobile application, a so-called 'online digital wallet' on mobile phones, working through the connection to the Internet. In addition, the following information is provided graphically: Users can pay and send money via this mobile application for transactions at online and offline stores. They are told that since the central bank issues the CBDC, there is no default risk, and the likelihood of using the transaction and transfer records for commercial use is low. Group 2 participants were informed that the retail CBDC will have two types of mobile applications or digital wallets, which work with the connection to the Internet and without the connection using the Near Field Communication (NFC) method, respectively. Furthermore, more details are explained as follows: a separate digital wallet for offline transactions, a so-called 'offline digital wallet,' will be provided and can be used without an Internet connection. This offline functionality protects the transaction privacy of its users because no information about transactions is recorded at all, and makes the CBDC closer to cash as both can be used without an Internet connection. CBDC users can transfer their balances between online and offline digital wallets without incurring fees. Therefore, they can choose either type of wallet for transactions, depending on their preferences or the value they place on transaction privacy. For Group 3 participants, it was graphically shown that online and offline digital wallets will be available for a retail CBDC, as introduced in Group 2, and additionally, a physical card-like form will be provided. They were also informed that a card similar to a typical prepaid card, the so-called 'CBDC card' that can store CBDC balances, would be offered. Payments and money transfers can be made using the NFC method, even directly between CBDC cards. The CBDC card protects transaction privacy in a similar way to offline digital wallets and does not need mobile devices. It is noteworthy that the CBDC issuance type introduced to Group 2 would be more preferred to Group 1 if participants care for protecting transaction privacy, and the CBDC introduced to Group 3 would be more preferred to Group 2 if participants were concerned about technology independence. Carrying the CBDC card provides an essentially similar experience of using cash for transactions and transfers because neither require additional devices nor need an Internet connection.

Groups 4 and 5 participants were given the same information as Groups 1 and

3,[11] respectively, but the only difference is that the balance in their online CBDC accounts is eligible to receive 0.6% to 0.7% of an interest. We set the rate to be similar to the commercial banks' average deposit interest rates as of Feb 2023.[12] Figure 2 presents a screenshot of sample graphics shown to respondents in Group 3. The corresponding screenshots for each subgroup are in the Appendix.

Figure 2. Group 3 (App+Card-Based Online+Offline CBDC)

In Module B, the respondents report ways of using a specific type of CBDC as well as several payment methods shown in Module A with knowing which type

11) We did not consider adding interests to the features introduced to Group 2 because the treatment effect to such a group, say, Group 2', can be interpolated by treatment effects from other groups jointly. If there were noticeable differences between Groups 1 and 2, then the differences can be understood as the treatment effect solely driven by the app-based offline CBDC. Hence, given that giving interests does not alter the effect of the app-based offline CBDC, the difference between Group 2 and Group 2' would be the average differences between Groups 1 and 4, and Groups 3 and 5.

12) Source: *Weighted-average interest rates of financial institutions, February 2023*, Press release of the Bank of Korea. Reported on March 31, 2023.

of CBDC will be available. When they answer their choice of payment methods and liquid asset portfolio, the answers that they reported in Module A are shown with the questionnaire. Figure 3 describes screenshots of sample graphics shown to respondents in Module B.

Figure 3. Questionnaires on Choices of Payment Methods and Asset Portfolios

For the following questions, we will assume that the entire population has the CBDC wallet described above.

B6. Assuming a scenario where the entire population uses CBDC, what payment methods would your household use for consumption purposes? Please answer the percentage of your spending for each item in 1% increments so that the total sums to 100%.

1. Cash	Coins, bills	( )%
2. Central Bank Digital Currency (CBDC)		( )%
3. Physical debit card	Payments are made directly from the account, including bank debit cards, using a physical card.	( )%
4. Physical credit card	A payment method that promises payment after a certain period, using a physical card for the transaction.	( )%
5. Mobile payments	Payments made via a mobile phone, using information of credit and debit cards, as well as convenient payment services (e.g., Samsung Pay, KakaoPay, Naver Pay), etc.	( )%
6. Other	Bank transfers, direct deposits without a bankbook, and gift certificates, etc.	( )%
7. Total		( )%

B7. Considering your typical carrying cash, emergency cash stored at home or in the office, checking account deposits, and savings deposits, how much of each of this would you be willing to replace with CBDC? (If you are not willing to replace any with CBDC, please enter the number 0 for that item.)

Previously, you indicated that you typically
carry [Display A2-1 response] ten thousand won in cash,
store [Display A2-2 response] ten thousand won as emergency cash,
have [Display A2-3 response] ten thousand won in checking account deposits,
and [Display A2-4 response] ten thousand won in savings deposits, respectively.

1. Of the carrying cash,	I would replace ( ) ten thousand won with CBDC to hold.
2. Of the emergency cash,	I would replace ( ) ten thousand won with CBDC to hold.
3. Of the checking account deposits,	I would replace ( ) ten thousand won with CBDC to hold.
4. Of the savings deposits,	I would replace ( ) ten thousand won with CBDC to hold.

Based on your answers, the total amount of CBDC you will hold will be //[Display the sum of B7-1–B7-4 responses]// ten thousand won.

For the remainder, the survey participants in all groups respond to the identical questionnaire. In Module C, the survey participants answer how much the commercial banks and mobile payment service providers should offer additional benefits of using their payment methods to offset the effect of the CBDC introduction. For example, when survey participants answered in Module B that they would reduce the usage of mobile payment services for using CBDC, we ask them to choose the minimum additional benefits that they are willing to revert the usage of mobile payment services. The remaining modules (D to H) collect information on other individual characteristics that might be used as control variables. For instance, the participants are asked to report their overall willingness to accept new technology-based services, recent changes to the use of services provided by commercial banks, concerns for privacy, trust toward the central bank, government institutions and policies, and other preferences such as risk preferences and time preferences.

1. Experimental Procedure

In October 2023, we conducted an online survey via Hankook Research, a survey company, using a nationally representative sample of 2,879 participants born in

South Korea and aged at least 19 years. Each participant received the participation fee of KRW 2,000 (USD 1.51, as of November 14, 2023) upon completing the survey. The full survey questionnaire written in Korean and its English translation are available in Online Appendix. Table 1 shows that our samples are reasonably representative of the South Korean population.

Table 1. Sample Characteristics

	This Survey	South Korea population
Female	0.50	0.50
Age		
19–29	0.15	0.15
30–39	0.15	0.16
40–49	0.18	0.19
50–59	0.20	0.20
60 or above	0.32	0.31
Living in Seoul	0.19	0.18
Marital Status	0.61	0.60
College Degree	0.49	0.47
Employment		
Employed	0.51	0.40
Self-employed	0.12	0.15
Not-employed	0.37	0.45

Notes: This table displays statistics for the overall South Korea population and compares it to the characteristics of the sample of surveys. National statics on gender, age, and place of residence are from the South Korea Demographic Statistics, December 2022. Marital status, and education levels are from the South Korea Population Census 2015, and employment data is from the 2019 Korea Labor Income Panel Study.

III. Average Treatment Effects on Demand for CBDC

We employ the following regression specification to estimate the impact of treatments regarding offline functionality and remuneration scheme on demand for CBDC as a payment method or a liquid asset:

$$Y_i = \beta_0 + \sum_{k=1}^{K} \beta_k T_i^k + \gamma X_i + \varepsilon_i \tag{1}$$

where Y_i represents the outcome variable of interest for individual i. In the right-hand side of the equation T_i^k is a binary indicator of the treatment group $k =$

$1, 2, ..., K$, where K denotes the number of treatment groups (that is, alternative CBDC design scenarios), excluding the control group. We consider a control vector X_i that includes individual socioeconomic characteristics such as gender, age, living region, education level, and household income and wealth. The control vector also includes variables such as technology acceptance attitudes, privacy knowledge and attitude, trust in commercial banks and the Bank of Korea, political tendency, and attitude toward public policies.

1. Demand for CBDC as a Payment Method: Use Frequency

In this section, we focus on how the introduction of a retail CBDC changes the choice frequencies of different payment methods.

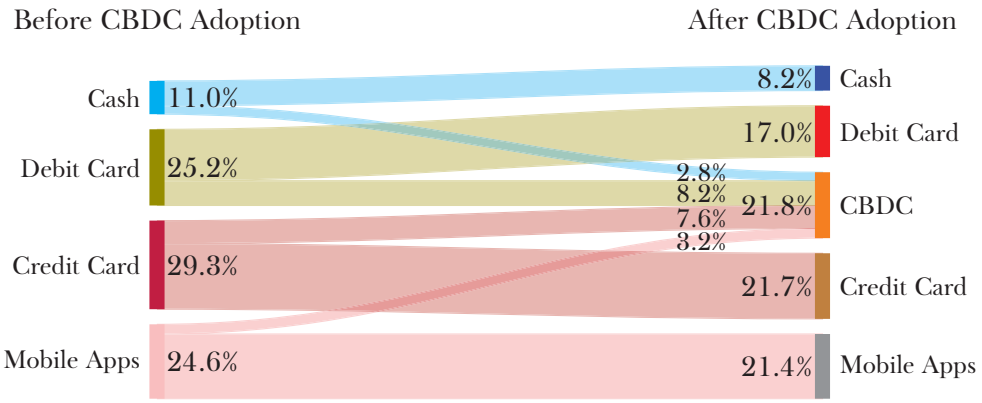
Figure 4 shows the flows from the current usage rates of payment methods (on the left end) to the anticipated usage rates of payment methods, including the retail CBDC (on the right end). As of October 2023, cash is used as a payment method in 11.0% of the total retail transactions and personal transfers, and debit cards are used in 25.2%. Also, credit cards are used in 29.3% and mobile apps are used in 24.6%. The total sum of percentage is not 100% because we exclude "other payment methods," which account for about 9.96% of the payments.[13] The thickness of each flow intuitively shows to what extent demand for CBDC substitutes each existing payment method. For example, a thick flow from debit cards to CBDC indicates that, on average, the introduction of CBDC replaces the use of debit cards by 8.2 percentage points. Overall, survey participants respond that for 21.8% of all typical situations involving retail transactions and personal transfers, they would demand CBDC as a payment method. The introduction of CBDC decreases the usage of debit and credit cards while the usage of cash and mobile payment services is less affected.

The similar Sankey diagrams for each survey subgroup are relegated into the Appendix. Survey participants respond that they would demand CBDC as a payment method for 22.0–22.9% of retail transactions and personal transfers. The highest

13) We exclude the other payment methods for the figure because "other methods" are not clearly specified, so the interpretation of them is unclear. Including it does not add any further insights about the changes in payment methods.

and second highest ratio is observed in Groups 3 (22.9%) and 5 (22.7%), respectively, where CBDC provides offline functionality services. On the other hand, the lowest ratio is in Group 1 (20.0%), where CBDC provides only online services. In a similar pattern, the ratios of debit and credit cards decrease more than mobile payment service apps and cash in Groups 3 and 5.

Figure 4. Sankey Diagram for Payment Methods Portfolio, All



To estimate the treatment effects on the demand for CBDC with different forms and features as a payment method, we regress each flow from the existing payments method to CBDC on the treatment dummies and control variables. Table 2 shows regression results of how much the usage of each payment method decreases after the introduction of CBDC.

First, Models (1) to (4) show regression results of how much the usage of cash or debit cards as a payment method decreases after the introduction of CBDC. Compared to the baseline Group 1, there are no significant treatment effects in the usage of cash and debit cards. However, in Models (3) and (4), we could find a minor, but consistent tendency that the introduction of card-type offline CBDC (in Groups 3 and 5) increases the outflow from debit cards to CBDC. This result would suggest that consumers consider the card-type CBDC as an alternative to physical forms of debit cards.

Models (5) and (6) show regression results of how much the usage of credit cards decreases if CBDC is introduced. Compared to the baseline Group 1, survey participants in Group 3 significantly respond more to use CBDC. They seem to see the

Table 2. Demand for CBDC: Changes in Use Frequency

	Cash to CBDC		Debit Card to CBDC		Credit Card to CBDC		Mobile Apps. to CBDC	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Group 2	0.521	0.475	1.350	1.304	2.040	1.992	-1.861	-1.875
	(0.85)	(0.78)	(1.05)	(1.01)	(1.45)	(1.44)	(-1.45)	(-1.45)
Group 3	-0.223	-0.239	1.792	1.740	3.300*	3.471*	-1.972	-1.675
	(-0.32)	(-0.34)	(1.41)	(1.37)	(2.37)	(2.51)	(-1.52)	(-1.31)
Group 4	0.876	0.882	-0.149	-0.274	0.725	0.749	0.036	0.063
	(1.30)	(1.29)	(-0.12)	(-0.21)	(0.52)	(0.54)	(0.03)	(0.05)
Group 5	0.283	0.230	1.969	1.927	0.124	0.155	0.304	0.414
	(0.45)	(0.37)	(1.49)	(1.45)	(0.09)	(0.11)	(0.24)	(0.32)
Cons	2.441***	-0.842	7.206***	9.727*	6.348***	-11.412**	3.993***	4.939
	(5.74)	(-0.35)	(8.07)	(2.26)	(6.39)	(-2.77)	(4.38)	(1.24)
Observations	2,879	2,879	2,879	2,879	2,879	2,879	2,879	2,879
R-squared	0.0011	0.0135	0.0016	0.0124	0.0029	0.0354	0.0022	0.0209
Control	No	Yes	No	Yes	No	Yes	No	Yes

Notes: The numbers in parentheses indicate *t* statistics. * implies $p < 0.05$, ** $p < 0.01$, and *** $p < 0.001$. The dependent variable is how much the usage of each payment method is replaced by CBDC. Control variables include socioeconomic characteristics such as gender, age, residential area, education level, household income, wealth, attitudes toward new technology-based services, privacy knowledge and attitude, trust in commercial banks and the Bank of Korea, political tendency, and attitude toward public policies.

card-type offline CBDC as an alternative to physical forms of credit cards. However, such a significant treatment effect is not observed in Group 5, where the card-type offline CBDC is available, and interests can also be paid on CBDC. Interest rates could reinforce the perception of CBDC as a store of value (henceforth, SOV) method rather than a payment method, thereby nullifying the treatment effect to some extent. We revisit this claim when investigating changes of SOV portfolios.

In Models (7) and (8) in Table 2, the regression results do not present any significant treatment effects on the usage of mobile applications as a payment method, compared to the baseline group.

Overall, the treatment effects of introducing CBDC with different technical features turn out not to be strong. This might be due to the respondents' limited concerns about transaction privacy concerns and the weak need for offline functionality in CBDC. Indeed, our survey (Table 3) shows that relatively few individuals use physical cash primarily for privacy protection, and awareness of offline functionality—namely, the importance of cash's independence from technology—remains low.

Table 3. Cash Usage

Statement	Respondent Ratio (%)
Congratulatory/condolence money (e.g., weddings, funerals)	30.1
Sending allowances to parents, children, or relatives	17.7
Traditional markets, apartment "7-day markets," etc.	16.0
Discounts for cash payments (e.g., clothing stores, nail salons)	13.8
Small transactions under KRW 1,000	11.0
Religious or charitable contributions (e.g., church offerings, Buddhist donations)	5.5
Areas or disaster scenarios where communication/IT systems are partially or fully unavailable	2.4
Situations where leaving a record is undesirable (e.g., motel stays, adult products, psychiatric treatments, cosmetic surgery)	1.9
Private lesson or tutoring fees	1.6
Total	100.0

Notes: The survey respondents were asked to answer the following question: "Please select up to three situations where you use cash (banknotes and coins) more often than other payment methods (e.g., bank transfers, cards, mobile payments, gift certificates) in order of priority from 1st to 3rd."

Furthermore, this finding could be closely linked to their trust in the central bank and government. Table 4 shows the survey result on why respondents think introducing CBDC would be useful. The ratios of the respondents who choose "A higher level of personal information protection compared to privately issued payment methods" and "The availability even in the event of computer failures or natural disasters that restrict electronic transactions" are relatively low to other ratios.[14] A large portion of respondents choose "Reduction in the issuance and circulation costs of physical cash" (22.0%) and "Safer from risks such as theft compared to physical cash" (22.7%).

The respondents' limited concerns regarding transaction privacy and the weak necessity of offline functionality in CBDCs might stem from their trust in the central bank. Table 5 shows to what extent respondents trust the Bank of Korea, compared to commercial banks. Most of the respondents (83.5%) trust the Bank of Korea more

14) This would be consistent with the result of the European Central Bank's survey regarding a digital euro, which revealed that offline capabilities are the least anticipated feature among respondents, with just 8% citing offline usage as their top preference (Thomadakis et al., 2023). Public users might expect to use CBDC on mobile devices such as smartphones. Meanwhile, our findings need not be considered inconsistent with those of Choi et al. (2025), who asked separate questions about consumption requiring privacy and that which does not, and found treatment effects mainly in consumption requiring privacy.

Table 4. Usefulness of CBDC

Statement	Respondent Ratio (%)
Reduction in the issuance and circulation costs of physical cash	22.0
Safer from risks such as theft compared to physical cash	20.7
No risk of default	13.8
A higher level of personal information protection compared to privately issued payment methods	13.3
It does not aim to profit from transaction intermediary fees	11.5
It does not commercially use transaction information	7.1
Availability even in the event of computer failures or natural disasters that restrict electronic transactions	6.6
Enables overseas remittances to be done more cheaply, faster, and more safely	5.0
Others	0.2
Total	100.0

or at least as much as commercial banks. Trust in the central bank appears to have an effect that makes one believe that, regardless of the form of CBDC issuance, the central bank would adequately protect transaction privacy and be well-prepared for offline transactions.

Table 5. Trust Levels in the Bank of Korea

Statement	Respondent Ratio (%)
1. Trust the Bank of Korea much more than private banks	32.4
2. Trust the Bank of Korea slightly more than private banks	30.6
3. Trust the Bank of Korea as much as private banks	20.5
Subtotal(1+2+3)	83.5
4. Trust private banks slightly more than the Bank of Korea	3.9
5. Trust private banks much more than the Bank of Korea	1.7
Subtotal(4+5)	5.6
Do not know the difference between the Bank of Korea and private banks	10.9
Total	100.0

2. Demand for CBDC as a liquid asset: Portfolio Changes

This section focuses on the effects of the introduction of CBDC on liquid asset portfolios. In particular, we estimate the treatment effects on the demand for CBDC as a liquid asset and subsequent changes in liquid asset portfolios. The main variable of interest is the extent to which CBDC replaces carrying cash, precautionary cash holdings, demand deposits, and savings deposits, respectively. The dependent variable in the following regressions is the ratio of the amount replaced by CBDC to

the amount previously held by each individual. The number of observations in each specification differs because participants who reported zero holdings are respectively dropped. Table 6 shows regression results.

Table 6. Demand for CBDC: Portfolio Replacement Ratio by CBDC

	Carrying Cash to CBDC		Precautionary Cash to CBDC		Demand Deposits to CBDC		Savings Deposits to CBDC	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Group 2	5.083	5.169	0.795	0.464	0.461	0.229	0.868	0.560
	(0.27)	(0.16)	(0.27)	(0.16)	(0.20)	(0.10)	(0.34)	(0.22)
Group 3	6.116*	6.789**	-0.707	-0.793	2.356	2.763	1.452	1.579
	(2.30)	(2.58)	(-0.24)	(-0.28)	(1.01)	(1.19)	(0.57)	(0.63)
Group 4	2.147	2.291	-1.040	-1.107	0.443	0.443	-0.944	-1.301
	(0.80)	(0.86)	(-0.35)	(-0.37)	(0.19)	(0.19)	(-0.38)	(-0.53)
Group 5	6.738*	7.325**	4.244	4.053	0.474	0.574	3.417	3.325
	(2.53)	(2.78)	(0.20)	(0.25)	(0.20)	(0.25)	(1.30)	(1.30)
Cons	52.82***	38.54***	53.54***	35.02***	41.33***	25.06***	27.66***	2.242
	(27.57)	(4.38)	(25.04)	(3.82)	(24.84)	(3.32)	(15.21)	(0.29)
Observations	2,641	2,641	1,977	1,977	2,836	2,836	2,327	2,327
R-squared	0.0035	0.0276	0.0022	0.0318	0.0004	0.029	0.0014	0.0429
Control	No	Yes	No	Yes	No	Yes	No	Yes

Notes: The numbers in parentheses indicate *t* statistics. * implies $p < 0.05$, ** $p < 0.01$, and *** $p < 0.001$. The dependent variable is the ratio of the amount replaced by CBDC to the amount previously held by each individual. Control variables include socioeconomic characteristics such as gender, age, residential area, education level, household income, wealth, attitudes toward new technology-based services, privacy knowledge, and attitude, trust in commercial banks and the Bank of Korea, political tendency, and attitude toward public policies.

Models (1) and (2) in Table 6 show the regression results for how much carrying cash as a liquid asset would be replaced by CBDC. We find that, as shown in Groups 3 and 5, the card-type offline CBDC significantly replaces carrying cash, compared to the baseline Group 1. That is, compared to the scenario where only app-based CBDC is available, the introduction of a card-type offline CBDC that enhances privacy protection leads to a further reduction in the reliance on carrying cash, by approximately 6 to 7 percentage points.

Models (3) to (6) demonstrate how much precautionary cash holdings and demand deposits could be replaced by CBDC. No significant treatment effects are observed. Somewhat surprisingly from the policy perspective, positive interest rates on CBDC in Groups 4 and 5 do not lead to a further reduction in the demand deposit holdings, compared to the scenarios such as Groups 2 and 3, where no interest rate is paid on the app-based CBDC.

Lastly, Models (7) and (8) show regression results of how much savings deposits

CBDC would replace. In comparison to the baseline Group 1, no significant treatment effects are observed, either. Additionally, in Model (8) with control variables, the constant term is not significant anymore.

Table 7. Total Demand for CBDC: Replacement Ratio by CBDC

	(1)	(2)
Group 2	0.001	-0.001
	(0.05)	(-0.05)
Group 3	0.011	0.015
	(0.51)	(0.67)
Group 4	0.006	0.006
	(0.30)	(0.28)
Group 5	0.015	0.016
	(0.69)	(0.73)
Cons	0.426***	0.215**
	(27.03)	(3.16)
Observations	2873	2,873
R-squared	0.0002	0.0319
Control	No	Yes

Notes: The numbers in parentheses indicate *t* statistics. * implies $p < 0.05$, ** $p < 0.01$, and *** $p < 0.001$. The dependent variable is the ratio of the total demand for CBDC to the total amount of money previously held by respondents. Control variables include socioeconomic characteristics such as gender, age, residential area, education level, household income, wealth, attitudes toward new technology-based services, privacy knowledge and attitude, trust in commercial banks and the Bank of Korea, political tendency, and attitude toward public policies.

Now, we estimate the treatment effects on the total demand for CBDC. The total CBDC demand is calculated as the sum of CBDC holding amount that replaces carrying cash, precautionary cash holdings, demand deposits, and savings deposits. we use the ratio of the total demand for CBDC to the total amount of money previously held by respondents as the dependent variable. Table 7 shows regression results. In comparison to the baseline Group 1, no significant treatment effects are found. In fact, these results align with the regression outcomes for the demand deposits replacement by CBDC because the majority of CBDC demand stems from demand deposits.

To further examine how different treatments affect CBDC demand, we asked participants how they would allocate a hypothetical KRW 1,000,000 (approximately USD 697.1 as of December 2024) among CBDC, carrying cash, precautionary cash, demand deposits, and savings deposits if they were to receive that amount. Table 8 shows the regression results. Compared to baseline Group 1, survey participants in Groups 4 and 5 significantly increase their CBDC holdings. This suggests that

participants might view CBDC as a more attractive store of value if a positive interest rate is offered to CBDC holdings.

Table 8. Demand for CBDC: Allocation of Newly Endowed Income (KRW 1 Million)

	(1)	(2)
Group 2	2.644	2.457
	(1.68)	(1.59)
Group 3	2.152	2.590
	(1.41)	(1.74)
Group 4	3.443*	3.320*
	(2.21)	(2.16)
Group 5	3.432*	3.474*
	(2.21)	(1.30)
Cons	22.49***	2.161
	(21.00)	(0.42)
Observations	2,879	2,879
R-squared	0.0022	0.0639
Control	No	Yes

Notes: The numbers in parentheses indicate *t* statistics. * implies $p < 0.05$, ** $p < 0.01$, and *** $p < 0.001$. The dependent variable is the amount of money that would be allocated to CBDC among carrying cash, precautionary cash, demand deposits, savings deposits, and CBDC, assuming the participants were to receive hypothetical KRW 1,000,000 (approximately USD 697.1 as of December 2024). Control variables include socioeconomic characteristics such as gender, age, residential area, education level, household income, and wealth. Control variables also include attitudes toward new technology-based services, privacy knowledge and attitude, trust in commercial banks and the Bank of Korea, political tendency, and attitude toward public policies.

IV. Discussions

1. Holding Limit of CBDC and Financial Intermediation

One of the main concerns about newly issued CBDCs is that their demand could be too strong and thus could substitute a significant amount of bank deposits, leading to financial disintermediation. To address this issue, Bindseil (2020) and Bindseil and Panetta (2020) suggest a Digital Euro holding limit of EUR 3,000 to reconcile payment efficiency with financial stability.[15] We use the survey result to examine whether this level of holding limit can become a binding constraint for most Korean consumers.

15) Likewise, Li (2023) structurally estimates household CBDC demand under various caps, finding that limits reduce substitution away from deposits.

Figure 5 demonstrates the distribution of CBDC demand. We calculate CBDC demand as the sum of the CBDC holding amount that replaces carrying cash, precautionary cash holdings, and demand deposits. The median CBDC holdings are KRW 400,000, and the 90th percentile is KRW 3,010,000. Less than 7 percent of participants are constrained if the Bank of Korea sets the holding limit at KRW 4,250,000, which is approximately equivalent to EUR 3,000, as of November 2023.

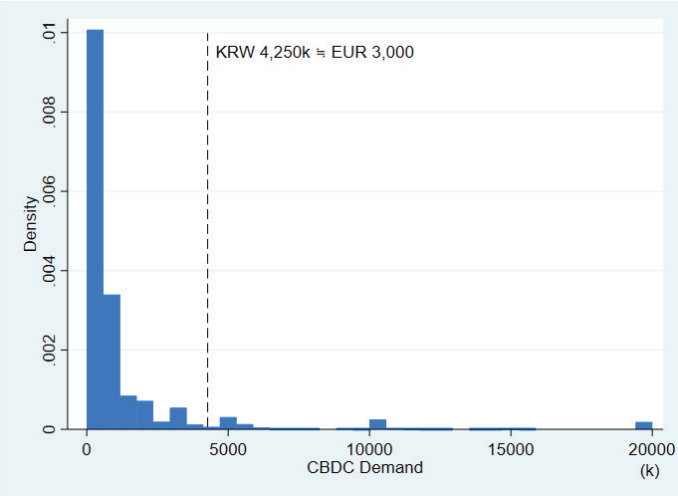
The average amount of CBDC that replaces demand deposits is KRW 750,000 with the holding limit and KRW 1,200,000 without the limit.[16] This implies that the total demand deposits would decrease by up to 19.6% with the holding limit but by up to 31.3% without the limit, providing a critical implication of introducing CBDC on financial intermediation. According to Cho and Hwang (2022), a 20% decrease in demand deposits reduced total production by 0.19%, and a 30% decrease reduced total production by 0.5%.[17] Therefore, setting the CBDC holding limit to around KRW 4,250,000 appears to appropriately maintain the financial intermediation without significantly restricting users' use and holding of CBDC.

In addition, Table 9 shows the ratio of survey participants constrained by CBDC holding limits and the deposit reduction ratio. It suggests that if the holding limit is set too low, the effect of introducing CBDC on financial intermediation would be minimal, whereas it could significantly constrain demand for CBDC. This aligns with ECB simulation studies and CEPR policy analyses, such as Meller and Soons (2023) and Bindseil and Panetta (2020), recommending conservative initial caps in the EUR 1,500–3,000 range. More generally, policymakers should treat the holding limit as a prudential tool: setting the cap too low may undermine the CBDC's usefulness, whereas setting it too high could heighten the risk of bank disintermediation.

16) For supplementary details, Figure A.6 shows the distribution of CBDC demand that additionally replaces savings deposits. In this case, the median CBDC holding amount is KRW 600,000, and about 17 percent of participants are constrained by the holding limit.

17) Cho and Hwang (2022) extended the New Keynesian Dynamic Stochastic General Equilibrium (DSGE) model of Smets and Wouters (2007) by incorporating CBDC and demand deposit and assuming perfect competition in the bank industry to analyze the impact of introducing CBDC on financial intermediation and monetary policy transmission mechanisms. They calibrate their model with parameter values for the Korean economy.

Figure 5. Demand for CBDC: Shift from Cash and Demand Deposits



Notes: CBDC demand denotes the sum of the amounts of CBDC that replace carrying cash, precautionary holding cash, and demand deposits. We set the demand for CBDC capped at KRW 20,000k.

Table 9. Holding Limit (KRW, Thousand) and Deposit Reduction

	2,000	2,500	3,000	3,200	5,000	10,000
Restricted Participants (%)	14	10	9	7	4	3
Deposit Reduction (%)	14.8	16.1	17.4	17.8	20.8	25.1

Notes: The Deposit Reduction is calculated as the ratio between the sum of CBDC that replaces demand deposits and the sum of demand deposits. Therefore, the Deposit Reduction implies that the total demand deposit would decrease by up to the figures in the table with the holding limit.

2. Individual Characteristics and Demand for CBDC

We now examine the individual characteristics that affect the demand for CBDC. Table A.1 presents regression results with a full list of control variables. A consistent pattern across regressions is that individuals who are willing to adopt the new mobile applications and technology services (New Mobile App. & Tech.) are significantly more inclined to hold CBDC. Specifically, regarding demand deposits, participants with the most positive attitude towards New Mobile App & Tech. hold CBDC by approximately 17.4 percentage points more than those with the weakest willingness. This seems to be because CBDCs could be regarded as a new technological device that provides a payment service.

Moreover, individuals who express greater trust in the Bank of Korea, as com-

pared to commercial banks, exhibit a stronger willingness to demand CBDC. These characteristics increase CBDC holding, replacing demand deposits by about 4.2 percentage points. Additionally, CBDC's substitution for cash increases by around 5 percentage points. This result could be considered as expected, as trust in payment methods or asset issuers is among the most critical factors considered when choosing a payment method or asset. Meanwhile, this is also consistent with the result that trust in privacy protection of financial institutions and big-tech companies significantly decreases cash and demand deposits whose uses can generate a vast of transaction information.

3. Strength of CBDC Demand

We further examine the strength of respondents' preference for CBDC as a robustness check of our experiment. Specifically, respondents who indicated they would hold or use CBDC instead of deposits were asked how much additional benefit commercial banks (or payment service providers) would need to offer for them to maintain their deposits (or continue using their payment methods), thereby offsetting the shift toward CBDC. We use an ordered logit model, including the treatment group indicators, the replacement ratio, and the willingness to use CBDC first at online and offline stores as control variables.

Table 10 presents the regression results for demand and savings deposit holdings. First, we find no significant treatment effects compared to baseline Group 1 in any of the specifications. Interestingly, respondents who exhibit a higher replacement ratio and indicate a willingness to use CBDC first for online payments require greater financial benefits to switch back to bank deposits. For demand (savings) deposits, a one-unit increase in the replacement ratio is associated with a 0.249 (0.447) increase in the log odds of moving to a higher benefit category. Similarly, respondents who intend to prioritize using CBDC for online (offline) payments have 0.518 (0.340) higher log odds of moving to a higher benefit category for demand deposits and 0.468 (0.245) higher log odds for savings deposits, compared to those who do not prioritize online (offline) payments.[18] The logit analysis in Table A.2, which focuses

18) The effect of priority use of CBDC for offline payments on savings deposits is not statistically significant.

Table 10. Strength of CBDC Demand

	Demand Deposits		Savings Deposits	
	(1)	(2)	(3)	(4)
Group 2	0.0932	0.0773	0.0323	0.0309
	(0.82)	(0.68)	(0.29)	(0.28)
Group 3	0.0338	-0.0155	0.0480	0.0100
	(0.29)	(-0.13)	(0.41)	(0.09)
Group 4	0.193	0.155	0.0728	0.0468
	(1.65)	(1.33)	(0.62)	(0.40)
Group 5	0.0801	0.0600	0.135	0.124
	(0.67)	(0.51)	(1.11)	(1.03)
Replacement Ratio	0.249*		0.447***	
	(2.39)		(4.18)	
Priority Use of CBDC for Online Payments		0.518**		0.468**
		(3.16)		(3.11)
Priority Use of CBDC for Offline Payments		0.340*		0.245
		(2.09)		(1.66)
Observations	2,596	2,601	2,469	2,474

Notes: The numbers in parentheses indicate *t* statistics. * implies $p < 0.05$, ** $p < 0.01$, and *** $p < 0.001$. The dependent variable is an ordinal variable indicating the level of economic benefit respondents require to maintain their deposits instead of holding CBDC. Higher response values correspond to greater required benefits.

on those unwilling to switch, aligns with these findings.[19] Likewise, the generalized ordered logit analysis in Table A.4, which examines usage frequency, also yields consistent results.[20]

In summary, our experimental findings indicate that individuals with a strong demand for CBDC prioritize factors other than financial incentives. Consequently, any measures taken by banks and payment service providers to counter the shift away from bank deposits (or other payment methods) may not effectively change the preferences of those who strongly favor CBDC.

V. Concluding Remarks

This study provides novel insights into the public demand for retail Central Bank Digital Currency (CBDC) and its potential impacts on the public asset portfolios as

19) By contrast, the logit analysis in Table A.3, which examines respondents reporting both the highest financial benefit requirements and unwillingness to switch, shows somewhat mixed results.

20) We employed a generalized ordered logit model with respect to usage frequency as a means of payment because the parallel lines assumption was violated.

a payment method and a store of value, and furthermore financial intermediation. Our information-provision experiment survey, encompassing various issuance types and features of CBDC, sheds light on how individuals might adapt to and use CBDC in their daily financial activities.

Our three main findings and implications are summarized as follows. Firstly, the introduction of a CBDC could lead to significant shifts in payment method preferences. The observed decline in debit card usage upon CBDC adoption underscores a preference for more convenient and beneficial payment options. Interestingly, the specific design features of CBDCs, such as online/offline accessibility and transaction privacy, did not significantly influence their demand as a payment method. This could be attributed to the strong public trust in central banks and governments, which seems to override concerns about transaction privacy and the need for offline transactions. Secondly, our study of the average treatment effects of CBDC types reveals that a physical card-type offline CBDC notably reduces the use of cash in liquid asset portfolios, suggesting a shift towards digital financial assets. However, these changes in portfolio composition do not appear to extend to other asset types, such as savings or investment products. This finding is critical for understanding the broader financial implications of CBDC implementation. Thirdly, and perhaps most importantly, the impact of interest payments on CBDC usage on the portfolio choice of newly endowed income is significant. Our results show that the provision of positive interests on CBDC holdings increases its attractiveness as a store of value, which could have far-reaching implications for monetary policy and financial stability. This shift in perception from a mere medium of exchange to a store of value could transform the role of CBDC in the financial system.

In conclusion, while the introduction of CBDCs presents opportunities for enhancing financial inclusion and improving payment system efficiency, it also brings challenges, particularly in terms of its impact on traditional financial intermediation and monetary policy transmission. Our study underscores the need for careful consideration of CBDC design features, particularly in terms of interest payments, to balance these opportunities and challenges. Further research is needed to understand the long-term effects of CBDCs on financial markets and economic stability, especially as more countries move towards their implementation.

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A. Appendices

1. Tables and Figures

Figure A.1. Sankey Diagram for Payment Methods Portfolio, Group 1

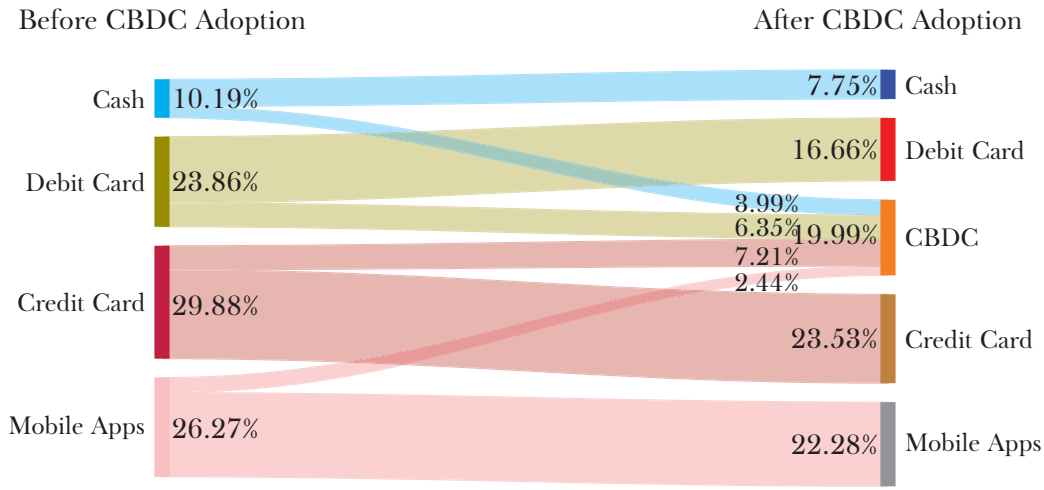


Figure A.2. Sankey Diagram for Payment Methods Portfolio, Group 2

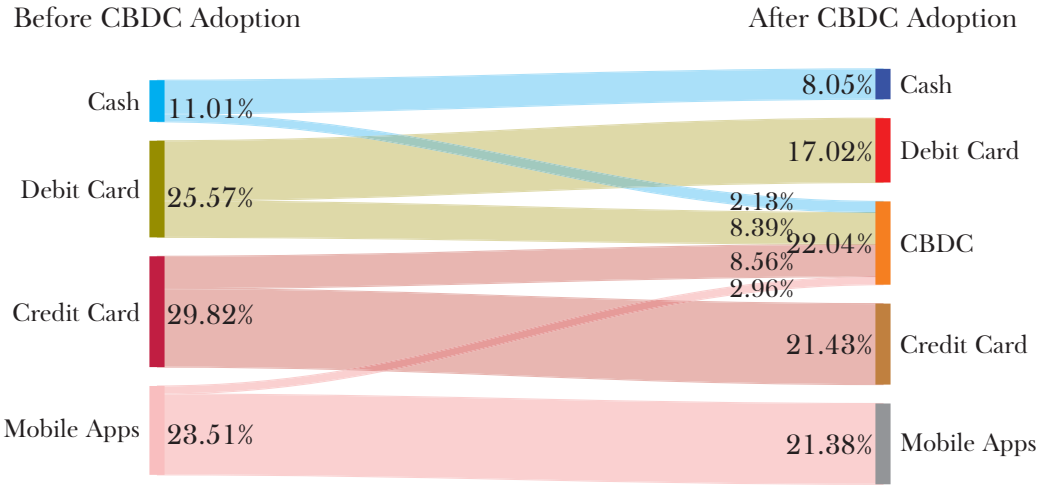


Figure A.3. Sankey Diagram for Payment Methods Portfolio, Group 3

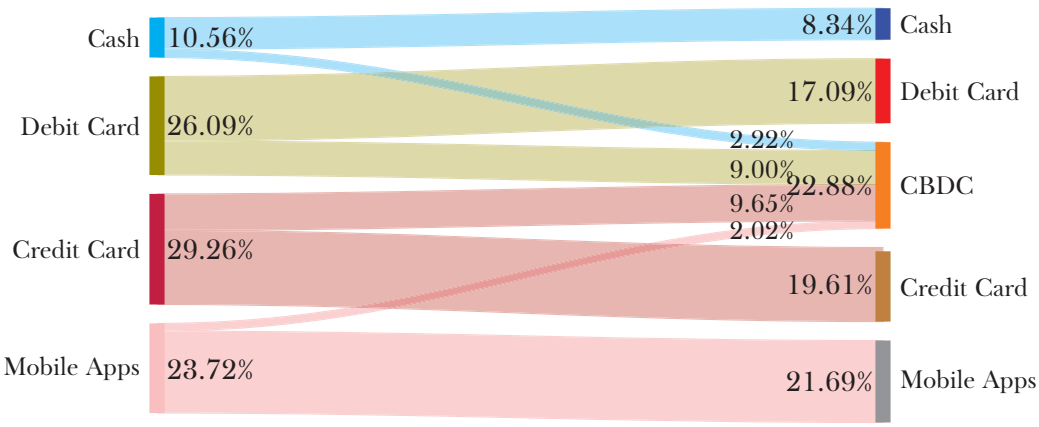


Figure A.4. Sankey Diagram for Payment Methods Portfolio, Group 4

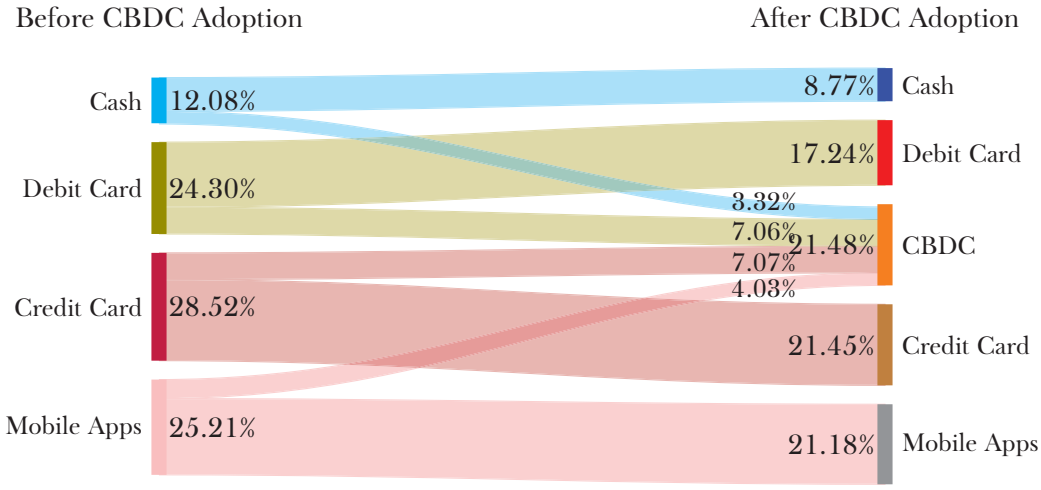
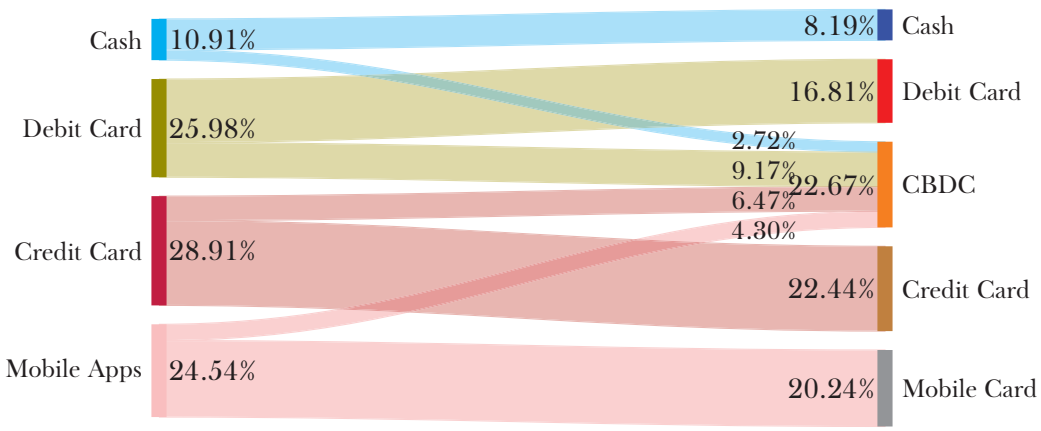


Figure A.5. Sankey Diagram for Payment Methods Portfolio, Group 5



2. Questionnaire and Screenshots

2.1. Korean Version

The original survey questionnaire in Korean is available at the following Open Science Framework repository: https://osf.io/34kyq

2.2. English Version

The translated survey questionnaire in English is available in the following Open Science Framework repository: https://osf.io/2v49t

3. Replacement Effects of CBDC

Table A.1. Demand for CBDC: Replacement Effects of CBDC with All Control Variables

	Carrying Cash		Precautionary Cash		Demand Deposit		Savings Deposit	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Group 2	5.083	5.169	0.795	0.464	0.461	0.229	0.868	0.560
	(0.27)	(0.16)	(0.27)	(0.16)	(0.20)	(0.10)	(0.34)	(0.22)
Group 3	6.116*	6.789**	-0.707	-0.793	2.356	2.763	1.452	1.579
	(2.30)	(2.58)	(-0.24)	(-0.28)	(1.01)	(1.19)	(0.57)	(0.63)
Group 4	2.147	2.291	-1.040	-1.107	0.443	0.443	-0.944	-1.301
	(0.80)	(0.86)	(-0.35)	(-0.37)	(0.19)	(0.19)	(-0.38)	(-0.53)
Group 5	6.738*	7.325**	4.244	4.053	0.474	0.574	3.417	3.325
	(2.53)	(2.78)	(0.20)	(0.25)	(0.20)	(0.25)	(1.30)	(1.30)
Attitude towards New Mobile App. & Tech.		2.659*		5.863***		5.791***		3.292**
		(2.31)		(4.63)		(5.78)		(2.95)
Attitude towards Interactive Kiosks		-1.682		-1.172		-1.564		-1.873*
		(-1.79)		(-1.14)		(-1.88)		(-2.05)
Use Frequency of Mobile Banking & Fast Payment		-1.793		1.592		-0.534		0.882
		(-1.66)		(1.33)		(-0.55)		(0.83)
Attitude Towards Telemarketing and Promotional Text Messages		2.249*		2.075		0.811		2.978**
		(2.21)		(1.86)		(0.88)		(2.96)
Trust in privacy protection of FI & Bigtech		-1.930*		-1.782		-1.823*		-1.509
		(-2.06)		(-1.73)		(-2.21)		(-1.72)
Withdrawal Failure Risk of Bank Deposits		0.540		1.317		0.477		2.466
		(0.38)		(0.83)		(0.37)		(1.76)
Perception of Commercial Banks' Default Risk		1.896		0.531		1.870		1.039
		(1.34)		(0.34)		(1.46)		(0.75)
Political Orientation		0.733		-0.457		2.070*		1.922*
		(0.74)		(-0.42)		(2.31)		(1.99)
Preference on Private vs Public Service		2.726		1.893		-0.292		2.333
		(1.44)		(0.91)		(-0.18)		(1.31)
Preference on Public Service Provided by Private Sectors		-4.421*		-5.934**		0.407		-3.235
		(-2.32)		(-2.84)		(0.25)		(-1.79)
Gender		-0.491		-0.827		-1.378		-0.218
		(-0.29)		(-0.44)		(-0.93)		(-0.13)
Age		0.777		-0.265		0.189		1.632**
		(1.15)		(-0.37)		(0.33)		(2.66)
Residential Region		2.229		1.605		-0.385		3.895
		(1.08)		(0.69)		(-0.21)		(1.84)
Education Level		-1.905*		-0.659		-1.259		-1.617*
		(-2.26)		(-0.73)		(-1.73)		(-2.10)
Trust in the Bank of Korea		4.804**		5.397**		4.231**		2.307
		(2.65)		(2.71)		(2.69)		(1.38)
Household Income		-0.0324		-0.0961		-0.284		-1.382**
		(-0.07)		(-0.18)		(-0.68)		(-3.00)
Household Wealth		0.652		-0.564		-0.682		-0.694
		(1.47)		(-1.19)		(-1.76)		(-1.65)
Cons	52.82***	38.54***	53.54***	35.02***	41.33***	25.06***	27.66***	2.242
	(27.57)	(4.38)	(25.04)	(3.82)	(24.84)	(3.32)	(15.21)	(0.29)
Observations	2,641	2,641	1,977	1,977	2,836	2,836	2,327	2,327
R-squared	0.0035	0.0276	0.0022	0.0318	0.0004	0.029	0.0014	0.0429
Control	No	Yes	No	Yes	No	Yes	No	Yes

Notes: Notes: The numbers in parentheses indicate *t* statistics. * implies $p < 0.05$, ** $p < 0.01$, and *** $p < 0.001$. The dependent variable is the ratio of the amount replaced by CBDC to the amount previously held by each individual.

4. Strength of Demand for CBDC

Table A.2. Strength of Demand for CBDC: Respondents Reporting Unwillingness to Switch Back

	Demand Deposits		Savings Deposits		
	(1)	(2)	(3)	(4)	(5)
Group 2	-0.0915	-0.131	-0.114	-0.104	0.00499
	(-0.47)	(-0.67)	(-0.51)	(-0.46)	(0.04)
Group 3	0.0107	-0.0683	0.212	0.216	-0.0281
	(0.06)	(-0.35)	(1.01)	(1.03)	(-0.23)
Group 4	0.279	0.214	0.387	0.399*	-0.105
	(1.53)	(1.16)	(1.91)	(1.98)	(-0.86)
Group 5	0.223	0.187	0.521**	0.518**	-0.0290
	(1.21)	(1.00)	(2.62)	(2.60)	(-0.24)
Replacement Ratio	0.737***		0.954***		
	(5.00)		(5.87)		
Replacement Ratio with Savings Deposits				0.925***	
				(5.81)	
Priority Use of CBDC for Online Payments		0.521*			0.392*
		(2.21)			(2.39)
Priority Use of CBDC for Offline Payments		0.613**			-0.110
		(2.63)			(-0.69)
Cons	-2.464***	-2.362***	-2.892***	-2.797***	0.526***
	(-15.83)	(-16.77)	(-16.36)	(-16.55)	(5.94)
Observations	2,873	2,879	2,873	2,873	2,879

Notes: The numbers in parentheses indicate *t* statistics. * implies $p < 0.05$, ** $p < 0.01$, and *** $p < 0.001$. The dependent variable is an indicator variable, which equals 1 if respondents indicate they are unwilling to switch back to bank deposits and 0 otherwise. Coefficients are estimated using the logit model.

Table A.3. Strength of Demand for CBDC: Respondents Reporting Both the Highest Financial Benefit Requirements and Unwillingness to Switch Back

	Demand Deposits		Savings Deposits		
	(1)	(2)	(3)	(4)	(5)
Group 2	0.133	0.127	0.00679	0.00540	0.00499
	(1.05)	(1.00)	(0.06)	(0.04)	(0.04)
Group 3	0.0615	0.0406	-0.0237	-0.0246	-0.0281
	(0.49)	(0.32)	(-0.19)	(-0.20)	(-0.23)
Group 4	0.0946	0.0713	-0.104	-0.106	-0.105
	(0.75)	(0.57)	(-0.85)	(-0.87)	(-0.86)
Group 5	0.00259	-0.00776	-0.0226	-0.0224	-0.0290
	(0.02)	(-0.06)	(-0.18)	(-0.18)	(-0.24)
Replacement Ratio	-0.350**		-0.152		
	(-3.29)		(-1.48)		
Replacement Ratio with Savings Deposits				-0.147	
				(-1.41)	
Priority Use of CBDC for Online Payments		0.391*			0.392*
		(2.18)			(2.39)
Priority Use of CBDC for Offline Payments		0.139			-0.110
		(0.81)			(-0.69)
Cons	0.834***	0.600***	0.639***	0.624***	0.526***
	(8.39)	(6.66)	(6.55)	(6.64)	(5.94)
Observations	2,873	2,879	2,873	2,873	2,879

Notes: The numbers in parentheses indicate *t* statistics. * implies $p < 0.05$, ** $p < 0.01$, and *** $p < 0.001$. The dependent variable is an indicator variable, which equals 1 if respondents indicate that they are unwilling to switch back to bank deposits or require more than 2 % points interest rate to switch back and 0 otherwise. Coefficients are estimated using the logit model.

Table A.4. Strength of Demand for CBDC: Use Frequency

Variable	Use Frequency	Use Frequency
Never use CBDC		
Group 2	0.399*	0.362
	(2.16)	(1.93)
Group 3	0.272	0.123
	(1.54)	(0.69)
Group 4	0.231	0.141
	(1.31)	(0.78)
Group 5	0.258	0.108
	(1.46)	(0.59)
Replacement Ratio	1.545***	-
	(7.44)	
Priority Use of CBDC for Online Payments	-	1.123***
		(3.84)
Priority Use of CBDC for Offline Payments	-	0.778**
		(2.92)
Cons	1.279***	1.712***
	(9.77)	(14.04)
0 – 0.5% point		
Group 2	0.301	0.258
	(1.78)	(1.52)
Group 3	0.138	0.0119
	(0.85)	(0.07)
Group 4	0.207	0.128
	(1.25)	(0.77)
Group 5	0.257	0.136
	(1.54)	(0.81)
Replacement Ratio	1.232***	-
	(6.70)	

Continued

Table A.4 – Continued

Variable	Use Frequency	Use Frequency
Priority Use of CBDC for Online Payments	-	1.019***
		(3.82)
Priority Use of CBDC for Offline Payments	-	0.795**
		(3.24)
Cons	1.177***	1.509***
	(9.51)	(13.29)
0.5 – 1.0% point		
Group 2	0.215	0.201
	(1.50)	(1.41)
Group 3	0.0269	-0.0226
	(0.19)	(-0.16)
Group 4	0.0463	-0.0141
	(0.33)	(-0.10)
Group 5	0.0152	-0.0444
	(0.11)	(-0.32)
Replacement Ratio	0.773***	-
	(5.63)	
Priority Use of CBDC for Online Payments	-	0.243
		(3.82)
Priority Use of CBDC for Offline Payments	-	0.755***
		(3.24)
Cons	0.839***	1.032***
	(7.71)	(13.29)
1.0 – 1.5% point		
Group 2	0.190	0.193
	(1.55)	(1.58)
Group 3	0.0676	0.0480
	(0.56)	(0.40)

Continued

Table A.4 – Continued

Variable	Use Frequency	Use Frequency
Group 4	-0.0551	-0.0715
	(-0.46)	(-0.59)
Group 5	-0.179	-0.188
	(-1.49)	(-1.56)
Replacement Ratio	0.597***	-
	(5.27)	
Priority Use of CBDC for Online Payments	-	0.281
		(1.78)
Priority Use of CBDC for Offline Payments	-	0.460**
		(2.98)
Cons	0.160	0.287***
	(1.66)	(3.31)
1.5 – 2.0% point		
Group 2	0.0770	0.0712
	(0.65)	(0.60)
Group 3	0.0851	0.0623
	(0.72)	(0.53)
Group 4	-0.113	-0.137
	(-0.95)	(-1.15)
Group 5	-0.183	-0.191
	(-1.54)	(-1.60)
Replacement Ratio	0.474***	-
	(4.42)	
Priority Use of CBDC for Online Payments	-	0.386*
		(2.51)
Priority Use of CBDC for Offline Payments	-	0.405**
		(2.70)
Cons	-0.261**	-0.194*

Continued

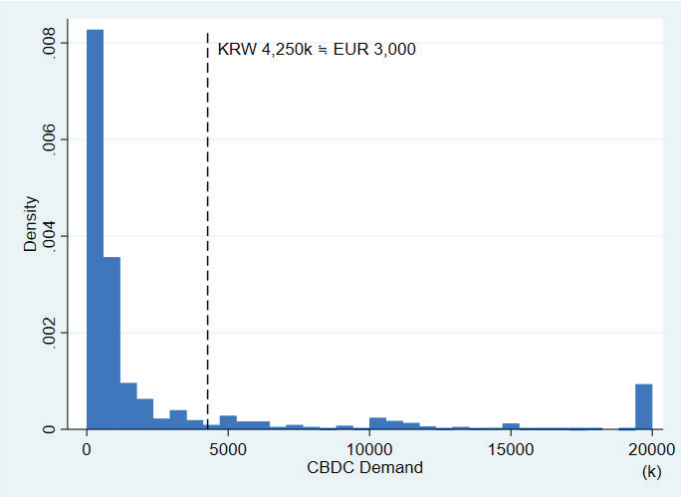
Table A.4 – Continued

Variable	Use Frequency	Use Frequency
	(-2.75)	(-2.27)
Above 2.0% point		
Group 2	-0.0546	-0.111
	(-0.23)	(-0.47)
Group 3	-0.201	-0.344
	(-0.84)	(-1.42)
Group 4	0.358	0.243
	(1.65)	(1.13)
Group 5	0.496*	0.484*
	(2.36)	(2.28)
Replacement Ratio	1.303***	-
	(6.98)	
Priority Use of CBDC for Online Payments	-	0.771**
		(2.90)
Priority Use of CBDC for Online Payments	-	0.938***
		(3.53)
Cons	-3.229***	-3.023***
	(-16.16)	(-17.87)
Observations	2,873	2,879

Notes: The numbers in parentheses indicate *t* statistics. * implies $p < 0.05$, ** $p < 0.01$, and *** $p < 0.001$. The dependent variable is an ordinal variable indicating the level of economic benefit respondents require to continue using their payment methods instead of adopting CBDC. Higher response values correspond to greater required benefits. Coefficients are estimated using the generalized ordered logit model.

5. Demand for CBDC including the amount from cash, demand deposit, and savings deposit

Figure A.6. Demand for CBDC: Shift from Cash, Demand Deposits, and Savings Deposits



Notes: CBDC demand denotes the sum of the amounts of CBDC that replace carrying cash, precautionary holding cash, demand deposit, and savings deposit. We set the demand for CBDC capped at KRW 20,000k.

6. Screenshots of the CBDC Design Module by Treatment

Figure A.7. Group 1 (App-Based Online CBDC)

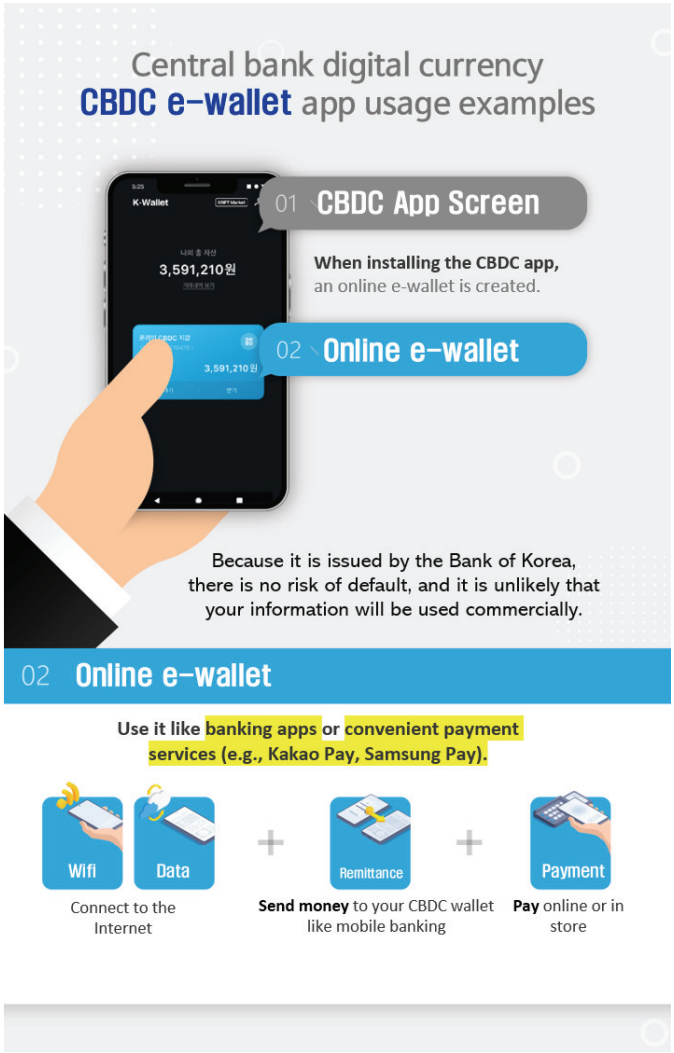


Figure A.8. Group 2 (App-Based Online + Offline CBDC)

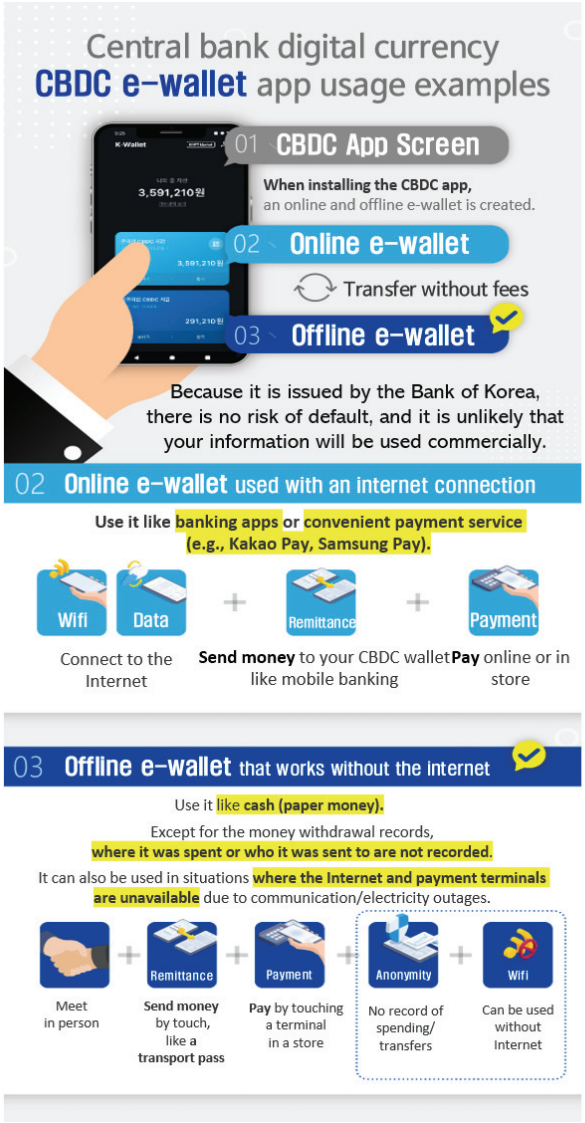


Figure A.9. Group 4 (App-Based Online CBDC + Interest)

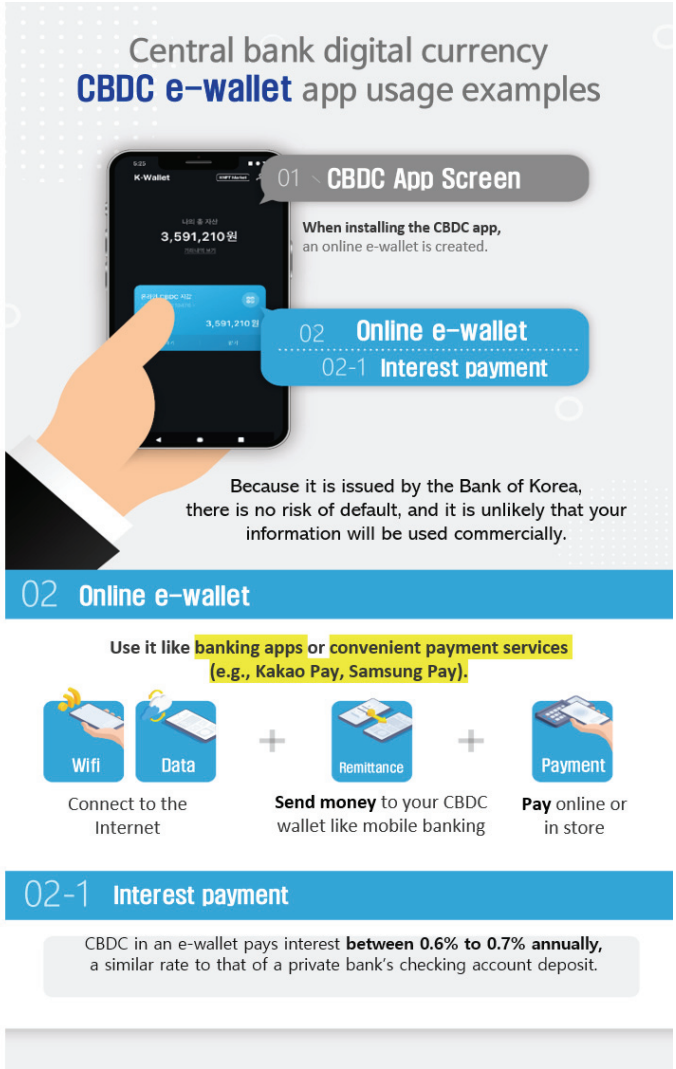
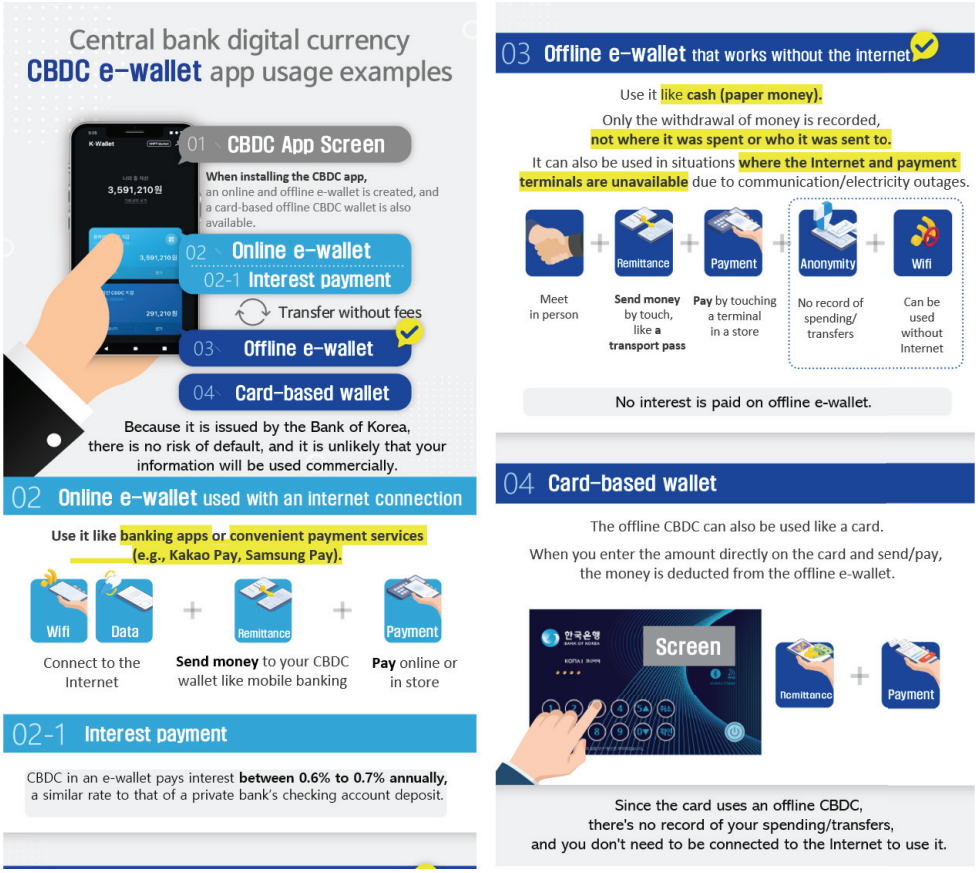


Figure A.10. Group 5 (App+Card-Based Online+Offline CBDC + Interest)



⟨Abstract in Korean⟩

소매용 중앙은행 디지털화폐(CBDC)에 대한 대중의 수요와 금융 중개에 대한 함의: 무작위 설문 실험 분석

김덕규*, 권오익**, 이승덕***

이 연구는 소매용 중앙은행 디지털화폐(CBDC)에 대한 대중의 수요와 금융 중개에 대한 함의를 무작위 설문 실험을 통해 분석하였다. 특히 기존 디지털 지급결제 수단을 대체하고 가치 저장 수단으로 기능할 수 있는 CBDC의 특성에 주목하였다. 이를 위해 다양한 발행 형태(온라인형, 오프라인형, 실물 카드형 등) 및 이자 지급 유무를 조합한 CBDC 디자인에 대한 정보를 제공하고, 이에 대한 실험 참가자의 수요 반응을 무작위 설문 실험을 통해 평가하였다. 분석 결과, 지급결제 수단으로서의 CBDC 수요는 기술적 설계 요소에 따라 유의미하게 달라지지 않으나, 이자 지급이 가능할 경우 가치 저장 수단으로서의 수요는 뚜렷이 증가하는 것으로 나타났다. 또한, CBDC에 대한 수요는 기술적 설계보다는 응답자의 기존 지급결제 사용 습관과 중앙은행에 대한 신뢰에 의해 더 크게 영향을 받는 것으로 나타났다.

핵심 주제어: 중앙은행 디지털화폐, 프라이버시, 수요, 발행 형태, 설문 실험

JEL Classification: E41, E58, G11

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	6	Central Bank Digital Currency and Financial Stability	Young Sik Kim · Ohik Kwon
	7	은행의 수익 및 자산구조를 반영한 통화정책 위험선호경로	김의진 · 정호성
	8	혁신기업에 대한 산업금융 지원: 이론모형 분석	강경훈 · 양준구
	9	가계부채 제약하의 통화정책: 2주체 거시모형(TANK)에서의 정량적 분석	정용승 · 송승주
	10	Alchemy of Financial Innovation: Securitization, Liquidity and Optimal Monetary Policy	Jungu Yang
	11	Measuring Monetary Policy Surprises Using Text Mining: The Case of Korea	Youngjoon Lee · Soohyon Kim · Ki Young Park
	12	Tracking Uncertainty through the Relative Sentiment Shift Series	Seohyun Lee · Rickard Nyman
	13	Intra-firm and Arm's Length Trade during the Global Financial Crisis: Evidence from Korean Manufacturing Firms	Moon Jung Choi · Ji Hyun Eum

14	특허자료를 이용한 우리나라 지식전파의 지역화 분석	이지홍 · 남윤미
15	Overhead Labour and Skill-Biased Technological Change: The Role of Product Diversification	Choong Hyun Nam
16	Does the Number of Countries in an International Business Cycle Model Matter?	Myunghyun Kim
17	High-Frequency Credit Spread Information and Macroeconomic Forecast Revision	Bruno Deschamps · Christos Ioannidis · Kook Ka
18	경제 분석을 위한 텍스트 마이닝	김수현 · 이영준 · 신진영 · 박기영
19	Takeover, Distress, and Equity Issuance: Evidence from Korea	Euna Cho
20	The Cash-Flow Channel of Monetary Policy: Evidence from Mortgage Borrowers	Sang-yoon Song
21	부의 효과의 분위 추정: 분위 정준 공적분회귀를 중심으로	김기호
22	Identifying Government Spending Shocks and Multipliers in Korea	Kwangyong Park · Eun Kyung Lee
23	Systemic Risk of the Consumer Credit Network across Financial Institutions	Hyun Hak Kim · Hosung Jung
24	Impact of Chinese Renminbi on Korean Exports: Does Quality Matter?	Jihyun Eum
25	Uncertainty, Credit and Investment: Evidence from Firm-Bank Matched Data	Youngju Kim · Seohyun Lee · Hyunjoon Lim
26	A Structural Change in the Trend and Cycle in Korea	Nam Gang Lee · Byoung Hoon Seok

제**2020** –1	인구 고령화가 실질 금리에 미치는 영향	권오익 · 김명현
2	달러라이제이션이 확산된 북한경제에서 보유외화 감소가 물가·환율에 미치는 영향	문성민 · 김병기
3	상태공간 벡터오차수정모형을 이용한 월별 GDP 추정: 깁스표본추출 접근	김기호
4	우리나라 외환시장 오퍼레이션의 행태 및 환율변동성 완화 효과	박준서 · 최경욱
5	Common Factor Augmented Forecasting Models for the US Dollar–Korean Won Exchange Rate	Hyeongwoo Kim · Soohyon Kim
6	북한「경제연구」로 분석한 경제정책 변화: 텍스트 마이닝 접근법	김수현 · 손 욱
7	북한의 광물 수출과 품목별 수입: 대중무역을 중심으로	김병연 · 김민정 · 김다울
8	Network–Based Measures of Systemic Risk in Korea	Jaewon Choi · Jieun Lee
9	Aggregate Productivity Growth and Firm Dynamics in Korean Manufacturing 2007–2017	Kyoo il Kim · Jin Ho Park
10	2001년 이후 한국의 노동생산성 성장과 인적자본: 교육의 질적 개선 효과를 중심으로	유혜미
11	House Prices and Household Consumption in Korea	Seungyoon Lee
12	글로벌 가치사슬 변화가 경제성장에 미치는 영향: 2008년 금융위기 전후 전·후방참여 효과의 국제비교를 중심으로	김세완 · 최문정
13	산업구조조정이 고용 및 성장에 미치는 영향	서병선 · 김태경
14	Cross–border Trade Credit and Trade Flows During the Global Financial Crisis	Moon Jung Choi · Sangyeon Hwang · Hyejoon Im

15	International Co-movements and Determinants of Public Debt	Hasan Isomitdinov · Vladimir Arčabić · Junsoo Lee · Youngjin Yun
16	북한 비공식금융 실태조사 및 분석·평가	이주영 · 문성민
17	북한의 장기 경제성장률 추정: 1956~1989년	조태형 · 김민정
18	Macroeconomic and Financial Market Analyses and Predictions through Deep Learning	Soohyon Kim
19	제조업의 수출과 생산성 간 관계 분석: 사업체 자료 이용	이윤수 · 김원혁 · 박진호
20	우리나라 제조업 수출기업의 내수전환 결정요인 분석	남윤미 · 최문정
21	A Model of Satisficing Behaviour	Rajiv Sarin · Hyun Chang Yi
22	Vulnerable Growth: A Revisit	Nam Gang Lee
23	Credit Market Frictions and Coessentiality of Money and Credit	Ohik Kwon · Manjong Lee
24	북한의 자본스톡 추정 및 시사점	표학길 · 조태형 · 김민정
25	The Economic Costs of Diplomatic Conflict	Hyejin Kim · Jungmin Lee
26	Central Bank Digital Currency, Tax Evasion, Inflation Tax, and Central Bank Independence	Ohik Kwon · Seungduck Lee · Jaevin Park
27	Consumption Dynamics and a Home Purchase	Dongjae Jung
28	자본유입과 물가상승률 간의 동태적 상관관계 분석: 아시아의 8개국 소규모 개방경제를 중심으로	최영준 · 손종칠
29	The Excess Sensitivity of Long-term Interest rates and Central Bank Credibility	Kwangyong Park

30	Wage and Employment Effects of Immigration: Evidence from Korea	Hyejin Kim
제2021–1	외국인력 생산성 제고 방안—직업훈련 프로그램의 노동시장 성과 분석을 중심으로	김혜진 · 이철희
2	한국경제의 추세 성장률 하락과 원인	석병훈 · 이남강
3	Financial Globalization: Effects on Banks' Information Acquisition and Credit Risk	Christopher Paik
4	The Effects of Monetary Policy on Consumption: Workers vs. Retirees	Myunghyun Kim · Sang-yoon Song
5	북한지역 토지자산 추정에 관한 연구: 프레임워크 개발 및 탐색적 적용	임송
6	김정은 시대 북한의 금융제도 변화 – 북한 문헌 분석을 중심으로 –	김민정 · 문성민
7	Chaebols and Firm Dynamics in Korea	Philippe Aghion · Sergei Guriev · Kangchul Jo
8	한국의 화폐환상에 관한 연구	권오익 · 김규식 · 황인도
9	재원조달 방법을 고려한 재정지출 효과 분석 : 미국의 사례를 중심으로	김소영 · 김용건
10	The Impact of Geopolitical Risk on Stock Returns: Evidence from Inter-Korea Geopolitics	Seungho Jung · Jongmin Lee · Seohyun Lee
11	Real Business Cycles in Emerging Countries: Are Asian Business Cycles Different from Latin American Business Cycles?	Seolwoong Hwang · Soyoung Kim
12	우리 수출의 글로벌 소득탄력성 하락 요인 분석	김경근
13	북한의 경제체제에 관한 연구: 실태와 평가	양문수 · 임송
14	Distribution-Dependent Value of Money: A Coalition-Proof Approach to Monetary Equilibrium	Byoung-Ki Kim · Ohik Kwon · Suk Won Lee

15	A Parametric Estimation of the Policy Stance from the Central Bank Minutes	Dong Jae Jung
16	The Immigrant Wage Gap and Assimilation in Korea	Hyejin Kim · Chulhee Lee
17	Monetary Non-Neutrality in a Multisector Economy: The Role of Risk-Sharing	Jae Won Lee · Seunghyeon Lee
18	International Transmission of Chinese Monetary Policy Shocks to Asian Countries	Yujeong Cho · Soyoung Kim
19	The Impact of Robots on Labor Demand: Evidence from Job Vacancy Data for South Korea	Hyejin Kim
20	전공 불일치가 불황기 대졸 취업자의 임금에 미치는 장기 효과 분석	최영준
21	Upstream Propagation of the U.S.-China Trade War	Minkyu Son
제2022-1	Immigration and Natives' Task Specialization: Evidence from Korea	Hyejin Kim · Jongkwan Lee
2	Transmission of Global Financial Shocks: Which Capital Flows Matter?	Bada Han
3	Measuring the Effects of LTV and DTI Limits: A Heterogeneous Panel VAR Approach with Sign Restrictions	Soyoung Kim · Seri Shim
4	A Counterfactual Method for Demographic Changes in Overlapping Generations Models	Byongju Lee
5	Housing Wealth, Labor Supply, and Retirement Behavior: Evidence from Korea	Jongwoo Chung
6	Demand Shocks vs. Supply Shocks: Which Shocks Matter More in Income and Price Inequality?	Seolwoong Hwang · Kwangwon Lee · Geunhyung Yim

7	Financial Literacy and Mutual Fund Retail Investing: Evidence from Korea During the 2008 Financial Crisis	Jongwoo Chung · Booyuel Kim
8	Exchange Rate Regime and Optimal Policy: The Case of China	Yujeong Cho · Yiping Huang · Changhua Yu
9	북한 수출입단가지수 추정: 북중무역 데이터를 중심으로	이종민 · 김민정
10	탄소배출을 감안한 국가별 녹색 총요소생산성 분석	안상기
11	북한 소비자 지급수단 조사 및 분석	이주영
12	Selection into Outsourcing versus Integration Strategies for Heterogeneous Multinationals	Sangho Shin
13	Central Bank Digital Currency and Privacy: A Randomized Survey Experiment	Syngjoo Choi · Bongseop Kim · Young Sik Kim · Ohik Kwon
14	Technological Change, Job Characteristics, and Employment of Elderly Workers: Evidence from Korea	Jongwoo Chung · Chulhee Lee
15	Machine-Learning-Based News Sentiment Index (NSI) of Korea	Beomseok Seo · Younghwan Lee · Hyungbae Cho
16	빅데이터를 이용한 실시간 민간소비 예측	신승준 · 서범석
17	Fixed Effects Quantile Estimations with Extended Within Transformation and their Application	Ki-Ho Kim
18	글로벌 금융위기 이후 가계소비행태 변화 분석: 세대별 소비행태를 중심으로	최영준
19	Optimal Monetary Policy under Heterogeneous Consumption Baskets	Seunghyeon Lee

20	통화정책 충격이 생산과 물가에 미치는 효과의 국가별 차이 및 결정요인	임근형 · 나승호 · 오다운
제**2023**–1	Shocks, Frictions, and Inequality in Korean Business Cycles	Seungcheol Lee · Ralph Luetticke · Morten O. Ravn
2	소득동질혼과 가구구조가 가구소득 불평등에 미치는 영향: 국제비교를 중심으로	박용민 · 허 정
3	Dominant Currency Pricing: Evidence from Korean Exports	Minkyu Son
4	Banking Crisis, Venture Capital and Innovation	Chun–Yu Ho · Won Sung
5	Can Robots Save Workers? The Effects of Robots on Workplace Injuries and Workers' Health in Korea	Hyejin Kim
6	International Reserve Accumulation: Balancing Private Inflows with Public Outflows	Bada Han · Dongwook Kim · Youngjin Yun
7	Global Bank Branches and Financial Stability: How Do Global Bank Branches Amplify Financial Shocks?	Yoocheol Noh
8	인구구조 변화에 따른 산업별 고용인력 변화와 정책대안별 효과 추정: 여성, 고령자, 외국인 고용확대를 중심으로	김혜진 · 정종우
9	북한 장기 수출입 데이터 재구축 및 분석 : 1962~2018년	김민정 · 김다울
10	Econometric Forecasting Using Ubiquitous News Text: Text–enhanced Factor Model	Beomseok Seo
11	Changes in Inflation Dynamics in Korea: Global Factor, Country Factor, and their Propagation	Yun Jung Kim · Noh–Sun Kwark
12	Financial Technologies and the Effectiveness of Monetary Policy Transmission	Iftekhar Hasan · Boreum Kwak·Xiang Li

13	북한의 시장물가: 2006~2022	임 송 · 문승현
14	지난 60년 경제환경변화와 한국기업 재무지표 변화: 『기업경영분석』(1961–2021)에 나타난 지표를 중심으로 Korea's Economic Policy Changes: Reflected in the Corporate Financial Indicators During the Last 60 Years	조윤제 · 최연교
15	Extended Two-Way Fixed Effects Quantile Cointegration Regression and Its Application	Ki-Ho Kim
16	In Search of the Origin of Original Sin Dissipation	Bada Han · Jangyoun Lee · Taehee Oh
17	대규모·비선형 베이지안 VAR 모형을 활용한 한국 거시경제 전망 및 시나리오 분석	강규호 · 김도완
18	Does the Uncovered Interest Parity Hold in Korea?	Joonyoung Hur · Kwanho Shin
19	북한이탈주민의 건강과 경제적 적응에 대한 연구: 국민건강정보DB 분석을 중심으로	정승호 · 위혜승 · 이종민
20	The Credit-Driven Business Cycles in South Korea: How Important is the Credit Supply Channel?	Nam Gang Lee · Seungho Nah
21	The Effects of Monetary Policy Shocks on Inflation Heterogeneity: The Case of Korea	Seolwoong Hwang
22	Dollar and Government Bond Liquidity: Evidence from Korea	Jieun Lee
23	우리나라의 가계부채와 소득불평등	김수현 · 황설웅
24	초저출산의 경제적·비경제적 원인: 설문 실험을 통한 분석	남윤미 · 황인도
25	한국경제 80년(1970–2050) 및 미래 성장전략 Eighty Years of the Korean Economy (1970–2050): The Past and a Future Growth Strategy	조태형

	26	국내 기후변화 물리적 리스크의 실물경제 영향 분석	이지원
	27	Point and Risk estImation using an enSemble of Models for Nowcasting: PRISM-Now	Beomseok Seo · Hyungbae Cho · Dongjae Lee
	28	Does the Target Matter? Evidence from Labor Supply Decisions of Fishermen	Eseul Choi
	29	북한이탈주민 조사를 통해 본 북한 출산율 하락 추세와 남북한 인구통합에 대한 시사점	이주영 · 김선중
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	2	Uncertainty and the Impacts of Structural Oil Shocks on the Korean Economy	Soojin Jo · Myungkyu Shim
	3	수출대상국의 무역기술장벽(TBT)이 한국 수출에 미치는 영향 분석: 수출의 내·외연적 한계와 산업 특성에 따른 비교	장용준 · 신상호
	4	개인 특성별 이질적 인플레이션율과 실질 소비 탄력성	유재인 · 민찬호 · 정호성
	5	실업경험이 가계소비에 미치는 장기효과 분석	최영준
	6	Central Bank Digital Currency, Real Effect and Welfare	Seonghoon Cho
	7	우리나라 노동시장 상황과 인플레이션 간의 관계 변화	허준영 · 채민석
	8	Is there an information channel of monetary policy?	Oliver Holtemöller · Alexander Kriwoluzky · Boreum Kwak
	9	Inflation Disagreement and Monetary Transmission in Korea	Boreum Kwak· Seri Shim·Peter Tillmann
	10	Using Density Forecast for Growth-at-Risk to Improve Mean Forecast of GDP Growth in Korea	Yoosoon Chang · Yong-gun Kim · Boreum Kwak · Joon Y. Park
	11	수익률곡선 추세와 기간 프리미엄	강규호 · 구병수
	12	Digital Literacy and Physical Cash Demand during the COVID-19 Pandemic	Kyeongtae Lee · Jaevin Park
	13	Exploring the Natural Interest Rate in Korea: A Multi-Model Approach	Kyeongtak Do · Ju Hyun Ahn · Hae Ri Jung

제2025–1	북한지역 저출생 발생원인에 대한 실증적 접근	이주영, 김기호
2	The Impact of Global Supply Chain Shock on Production Costs	Bongseok Choi · Hyun Hak Kim · Sangho Shin
3	BOK–LOOK: A Semi–Structural Model for Koreais Open Economy and Monetary Policy Analysis	Seungryul Jeong · Seokil Kang · Hyungbae Cho · Jinwoon Yoon · Dongjae Lee
4	기후변화가 한국 노동시장에 미치는 영향	심명규, 조수진
5	인플레이션 경험이 주택수요에 미치는 영향 분석	최영준
6	A Properly Ordered Zero Sign Restrictions on VARX for a Small Open Economy	Ki–Ho Kim
7	Monetary and central bank information shocks: Tales from alternative identifications	Bosung Jang · Inhwan So
8	Monetary–Fiscal Policy Mix and Inflation in Korea	Sora Chon · Wongi Kim · Seri Shim
9	Investment Giants in Emerging Markets	Daisoon Kim · Jee Won Park · Inhwan So
10	Demand for Home Pension and Reverse Mortgage: An Information Provision Survey Experiment	Duk Gyoo Kim · In Do Hwang
11	A Large Bayesian Vector Autoregression of the Yield Curve and Macroeconomic Variables with No–Arbitrage Restriction	Sunho Lee · Kyu Ho Kang
12	Demographic Shifts and the Real Interest Rate in an Open Economy: The Case of Korea	Jae Won Lee · Woong Yong Park · Seolwoong Hwang
13	Population Aging and Financial Stability: An Empirical Analysis	Hun Jang
14	Macroeconomic Impacts of Climate Change under NGFS Scenarios	Young–Han Kim · Bok–Keun Yu

15	Effect of Climate Change on the Korean Economy: Aggregated VAR with Functional Data	Jihyun Kim · Boreum Kwak
16	인구변화가 지역별 노동시장에 미치는 영향 분석	이철희 · 정종우
17	Dollar Dominance and International Spillovers of US Financial Shocks	Minkyu Son
18	The Earned Income Tax Credit and the Tax-benefit Link of Public Pensions	Dongmin Chun
19	Diagnostic Expectations into Housing DSGE and Productive Investment Crowding-Out Effect	Junghyuk Lee · Jinwoon Yoon
20	Public Demand and Financial Implications for Retail CBDC: A Randomized Survey Experiment	Duk Gyoo Kim · Ohik Kwon · Seungduck Lee