

Developments in Banknotes in Circulation since the Start of the Pandemic

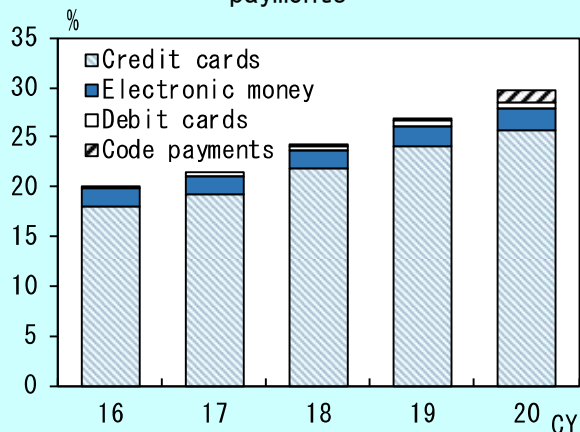
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In recent years, a phenomenon referred to as the “paradox of banknotes” has been observed worldwide: despite reduced opportunities to pay in cash due to the increase in cashless payments such as payment by credit card, the amount of banknotes in circulation has increased. Reasons that have been highlighted include the decline in the opportunity costs of holding cash amid the low interest rate environment as well as increased precautionary demand due to heightened economic uncertainty. Since the onset of the COVID-19 pandemic, this paradox has become more pronounced: cash in circulation has jumped even though opportunities to use cash have dropped sharply due to the economic downturn and the increase in e-commerce due to stay-at-home consumption. Our empirical analysis suggests that public health measures led to a significant increase in cash in circulation, with the effect being greatest immediately after the outbreak of pandemic and waning thereafter. It thus appears that developments in banknotes in circulation have been affected by precautionary demand for cash due to the heightened uncertainty brought about by the pandemic.

Introduction

In recent years, banknotes in circulation¹ in Japan have trended upward despite a decline in opportunities to pay in cash amid the increase in payments by credit card and electronic money (Charts 1 and 2). This phenomenon—the increase in cash² in circulation despite the decline in opportunities to pay in cash due to the spread of cashless payment methods—is referred to as the “paradox of banknotes.” This paradox has

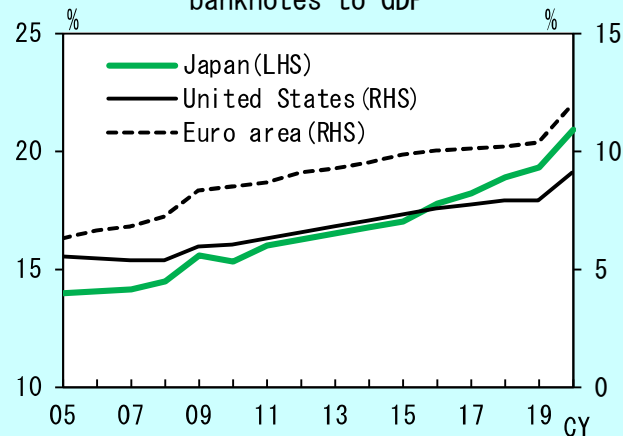
[Chart 1] Changes in the share of cashless payments



Note: Share of cashless payments in private consumption expenditure.

Sources: Japan Consumer Credit Association; Payments Japan Association; BOJ; Cabinet Office.

[Chart 2] Change in the ratio of banknotes to GDP



Sources: BOJ; Cabinet Office; FRB; BEA; ECB; Eurostat.

been observed not only in Japan but also in the United States and the euro area and has become more pronounced worldwide since the start of the COVID-19 pandemic in early spring 2020.³ Banknotes in circulation have increased substantially even though opportunities to pay in cash have declined considerably due to the economic downturn brought about by strict public health measures and other factors as well as the further increase in cashless payments as a result of the rise in e-commerce due to, among other things, stay-at-home consumption.

The remainder of this paper is organized as follows. We start by discussing reasons for the “paradox of banknotes” from a longer-term perspective based on a survey of the literature. We then examine the recent characteristics of this paradox since the start of the pandemic by conducting empirical analyses focusing in particular on developments in Japan. It should be noted, however, that our findings need to be interpreted with some latitude since we are still in the midst of the COVID-19 pandemic and its economic impacts.

Reasons for the paradox

Determinants of the demand for banknotes

The demand for banknotes can be broadly classified into the transaction demand for banknotes reflecting payments and receipts of banknotes linked to economic activities and non-transaction demand.⁴ While transaction demand essentially fluctuates with the business cycle, the spread of cashless payments is likely pushing down such demand.

On the other hand, reasons for the rise in non-transaction demand observed in recent years include (1) the decline in the opportunity cost of holding cash, (2) the increase in precautionary demand, and (3) structural factors. The opportunity cost of holding cash, i.e., the interest income forgone by withdrawing cash from the bank and keeping it in a wallet, has fallen in recent years due to the global low interest rate environment.⁵ Meanwhile, the increase in precautionary demand—a phenomenon that tends to be observed particularly during financial crises and the like—indicates that people tend to keep more cash at hand to be prepared for any contingencies, reflecting uncertainty regarding the economic outlook and financial system. Examples of structural factors include confidence in the political and economic system, demographic factors, the density of ATM networks, and public safety. Taking demographic factors as an example, the high share of the elderly may put upward pressures on cash in circulation at the macro-level, given that the elderly tend to prefer paying with cash.

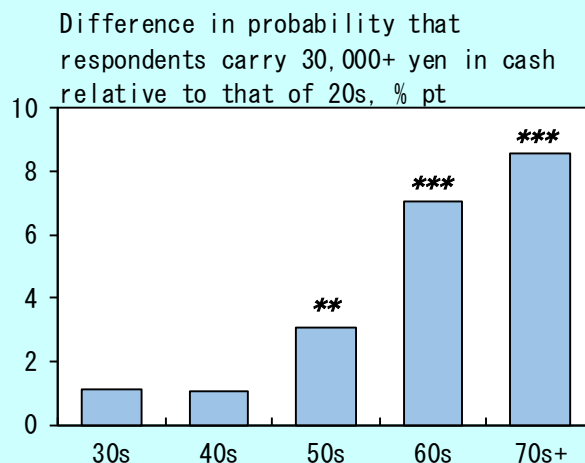
Many studies examine the link between these determinants of the demand for cash and the paradox. Williams (2012),⁶ for example, found that in the United States the main reason for the paradox was the prolonged low interest rate environment brought about by monetary easing by major central banks since the Global Financial Crisis (GFC). Meanwhile, the Bank of England (2020)⁷ argues that reasons for the paradox include increased precautionary demand due to the heightened uncertainty after the GFC as well as the

decline in opportunity costs due to the prolonged low interest rate environment. Further, Otani and Suzuki (2008)⁸ point out that a reason for the increase in banknotes in circulation in Japan is the strong preference of the elderly for cash.

Effects of the high share of the elderly in Japan

Against this background, using data from the Opinion Survey on the General Public’s Views and Behavior by the Bank of Japan (BOJ), we conduct empirical analyses to examine the relationship between the high share of the elderly in Japan and the demand for banknotes. The survey includes a question asking “how much money do you carry on average?”⁹ We examine the link between responses to this question and respondents’ age, controlling for other factors such as respondents’ income. Chart 3 shows the estimated differences in the probability that a respondent carries 30,000 yen or more in cash relative to that of 20s. While the differences of probabilities of 30s and 40s are not statistically significant, the differences for those of 50s, 60s, and 70s and higher are large and statistically significant. Furthermore, the difference increases with age.¹⁰

[Chart 3] Relationship between cash holdings and age



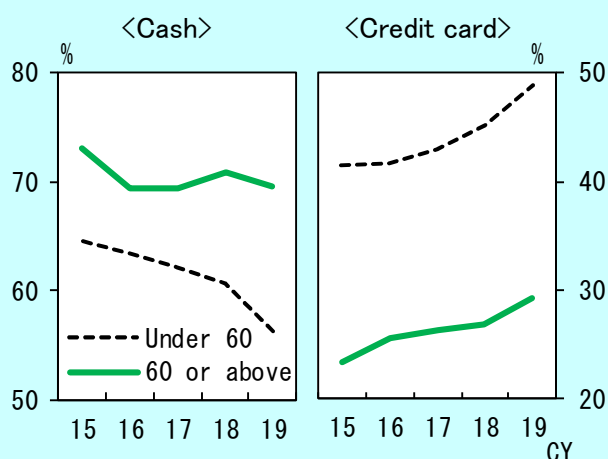
Note: Estimated using an ordered probit model in which the dependent variable is the response to the question “how much money do you carry on average?” and the independent variables are respondents’ age, sex, occupation, income, family size, and area of residence. *** and ** denote statistical significance at the 1% and 5% levels, respectively.

Source: BOJ.

This result suggests that today’s elderly tend to have a relatively stronger preference for cash, supporting the view that the high share of the elderly in Japan contributes to pushing up banknotes in circulation.¹¹ That said, in recent years, credit cards and other cashless payment methods have become

widely used as everyday means of payment even among the elderly (Chart 4). Moreover, from a longer-run perspective, by the time age groups accustomed to cashless payment become older, they may not have such a strong preference for cash as the elderly of today. It should therefore be noted that the high share of the elderly itself is not necessarily a factor that will push up the use of banknotes in Japan in the future.

[Chart 4] Primary payment means by age

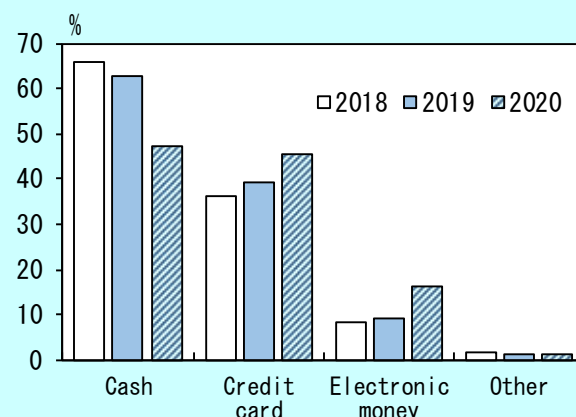


Note: The survey asked respondents about their primary means of payment for daily expenditures. Respondents were allowed to choose up to two answers from among the following: cash, credit card, electronic money (including debit cards), other. The shares of respondents aged 60 or above and under 60 are the averages of responses of each age group weighted by the age composition of respondents.

Source: The Central Council for Financial Services Information.

for using cash as a payment means (i.e., they have reduced the transaction demand for banknotes). Nevertheless, the year-on-year rate of increase in banknotes in circulation has increased rapidly not only in Japan but also in other countries since March 2020, when the pandemic started to have a significant and broader impact around the world (Chart 6). As a result, the paradox of banknotes has become more pronounced. In the United States, for example, the amount of banknotes in circulation has grown rapidly since the start of the pandemic even though the use of cash as a means of payment has decreased (Coyle et al. [2021a]).

[Chart 5] Primary payment means for daily expenditures



Note: Calculated based on the same survey as shown in Chart 4. The survey period for 2020 was from August 7 to September 15.

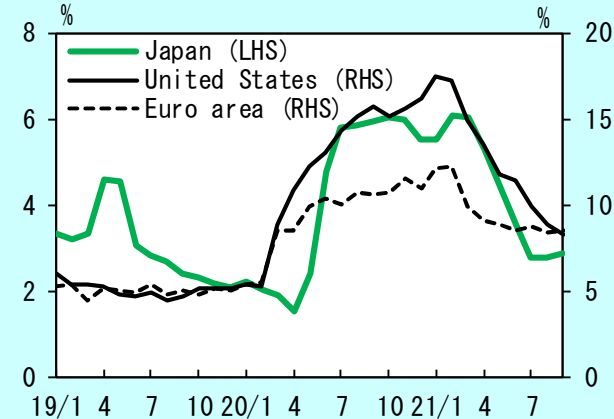
Source: The Central Council for Financial Services Information.

Developments since the start of the pandemic: a more pronounced paradox

Changes observed since the pandemic

This section examines developments in banknotes in circulation since the start of the COVID-19 pandemic and reasons for these developments. Looking back at economic activity since early 2020, private consumption, particularly of contact-intensive services such as dining-out, sharply dropped due to factors such as self-restraint on going out and government requests for establishments to shorten their business hours. The survey results regarding daily payment means show that while the share of respondents using cash as their primary payment means clearly declined in 2020, the share of respondents using credit cards and electronic money increased due to the increase in e-commerce as a result of “stay-at-home consumption” and the point-reward program by the government and businesses that gave the use of cashless payment a further boost (Chart 5). Thus, the economic downturn and increase in cashless payments seem to have reduced opportunities

[Chart 6] Year-on-year change in banknotes in circulation



Sources: BOJ; FRB; ECB.

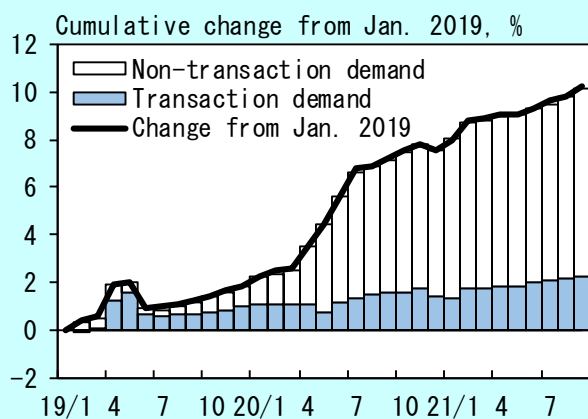
Reasons why the paradox became more pronounced

Looking at reasons why the paradox of banknotes has become more pronounced since the onset of the pandemic, studies abroad have pointed to an increase in non-transaction demand, especially precautionary demand. The Bank of England (2020), for example,

argues that although opportunities for using cash diminished due to the reduction in consumption opportunities as a result of lockdowns, people increased their holdings of banknotes for precautionary purposes due to the high degree of uncertainty brought about by the pandemic. Moreover, using the results of a household survey by the Federal Reserve, Coyle et al. (2021b)¹² found that, faced with greater uncertainty due to the pandemic, people increased their holdings of cash at hand, resulting in an increase in banknotes in circulation in the United States.

Following these studies, we decompose changes in banknotes in circulation in Japan into changes due to transaction and non-transaction demand using an approach¹³ that focuses on the difference in changes in 1,000-yen bills and 10,000-yen bills in circulation. Chart 7¹⁴ shows that most of the increase in banknotes in circulation since the start of the pandemic is due to an increase in non-transaction demand, while transaction demand declined in spring 2020 and early 2021, when the first and second states of emergency were declared, respectively. This finding suggests that in Japan, like in other countries, the paradox of banknotes became more pronounced as people, in the face of unprecedented uncertainty due to the pandemic, increased their precautionary cash holdings even though opportunities to use cash declined due to the fall in consumption¹⁵ and the further spread of cashless payment methods.

[Chart 7] Decomposition of changes in the demand for banknotes



Source: BOJ.

Public health measures and banknotes in circulation

The public health measures taken around the world have had a major impact on people's daily lives and economic activities. This section empirically examines

the impact of such measures on banknotes in circulation. On the one hand, the decline in economic activities due to the public health measures likely exerted downward pressure on banknotes in circulation through reduced transaction demand. On the other hand, the increased uncertainty regarding, for example, how large the impact of the unprecedented public health measures on socio-economic activities would be, how long these measures would be in effect, and whether opportunities to withdraw cash would be limited especially in countries under very strict lockdowns, is likely to have exerted upward pressure on banknotes in circulation through increased non-transaction demand. In the following, we quantitatively examine these effects using data for Japan and other countries.

Impact on banknotes in circulation: an international perspective

We begin with a simple panel regression based on data for Japan, the United States and the euro area to gauge the impact of the public health measures on banknotes in circulation. Concretely, we estimate the impact of (1) public health measures (for which we use the stringency index compiled by the University of Oxford¹⁶) and (2) changes in economic activity (for which we use the Services PMI¹⁷) on banknotes in circulation. As shown in Chart 8, the coefficient on the stringency index is positive and statistically significant,

[Chart 8] Panel analysis: international perspective

	Dependent variable	
	Banknotes in circulation (year-on-year rate of change)	
Independent variables:		
Stringency index (year-on-year difference)	0.054 (0.010)	***
Services PMI (year-on-year difference)	0.029 (0.006)	***
Number of observations	57	
Adjusted R-squared	0.959	

Note: Estimated using a fixed effects model for Japan, the United States, and the euro area. For the Services PMI, the year-on-year difference after converting it to levels is used. The Services PMI for Japan is the "au Jibun Bank Japan Services PMI." *** denotes statistical significance at the 1% level. Figures in parentheses are standard errors. The estimation period is from January 2020 to July 2021.

Sources: IHS Markit (© and database right IHS Markit Ltd 2021. All rights reserved.); Oxford COVID-19 Government Response Tracker, Blavatnik School of Government, University of Oxford; FRB; ECB; BOJ.

indicating that, after controlling for the impact of changes in economic activity, the stricter the public health measures were, the higher was the growth rate of banknotes in circulation. This result can be interpreted as follows. First, the introduction of public health measures increased uncertainty about the future, providing an incentive for the public to hold more cash for precautionary purposes. Second, in the United States and the euro area, where stricter public health measures were taken, the public might increase the amount of cash they withdraw per visit as they were forced to visit banks at lower frequency.¹⁸ Third, in addition to the abovementioned increased withdrawal of banknotes from banks to households and firms, the decreased deposit of banknotes from households and firms to banks would have pushed up the amount of banknotes in circulation. For example, firms may not have been able to smoothly deposit cash from sales proceeds due to restrictions on going out. That said, these points cannot be clearly estimated for the United States and the euro area because of data limitations.

Impacts on banknotes in circulation: developments in Japan

Next, using data on the BOJ's payments and receipts of banknotes at its headquarters and branches, we conduct a quantitative analysis of the impact of the public health measures on the circulation of banknotes in Japan. The data allow us to examine payments (the issuance of banknotes from the BOJ to private-sector banks) and receipts (deposits of banknotes from private-sector banks to the BOJ) separately, allowing us to conduct a more detailed analysis than the preceding one in which banknotes in circulation were used as the dependent variable.¹⁹

To start with, using the “stay-at-home rate” calculated based on mobile phone location data by Mizuno et al. (2021),²⁰ we estimate to what extent the fact that people stayed at home affected the payments and receipts of banknotes. In the estimation, we control for the impact of business sentiment²¹ and the period under the Special Cash Payments program.²² The results are presented in Chart 9 and show that an increase in the stay-at-home rate is linked with a significant increase in payments of banknotes and a significant decrease in receipts of banknotes. In other words, an increase in the stay-at-home rate due to public health measures pushed up payments from the BOJ to banks to meet their demand for banknotes in response to withdrawals for precautionary purposes, while receipts from banks to the BOJ declined as the public increased its holdings of cash.²³

[Chart 9] Panel analysis:
Japan (1)

	Dependent variables	
	Payments (year-on-year rate of change)	Receipts (year-on-year rate of change)
Independent variables:		
Stay-at-home rate (year-on-year difference)	0.320 ** (0.122)	-0.961 *** (0.126)
DI for current economic conditions (year-on-year difference)	0.002 *** (0.000)	0.008 *** (0.002)
Dummy for the Special Cash Payments	0.287 *** (0.044)	0.127 *** (0.021)
Number of observations	154	154
Adjusted R-squared	0.219	0.511

Note: Estimated using a fixed effects model. The “DI for current economic conditions” is the diffusion index for current conditions from the Cabinet Office’s “Economy Watchers Survey.” For payments the one-period lead is used, while for receipts the one-period lag is used. The Special Cash Payments dummy takes 1 for June and July 2020, when payments were fully in progress. *** and ** denote statistical significance at the 1% and 5% levels, respectively. Figures in parentheses are standard errors. The estimation period is from January 2020 to March 2021.

Sources: BOJ; Cabinet Office; Mizuno et al. (2021).
<http://research.nii.ac.jp/~mizuno/>

Next, in order to quantify the impact of the states of emergency, we use dummy variables representing periods during which a state of emergency was in force as independent variables instead of the stay-at-home rate and estimate the link with payments and receipts of banknotes. The results are presented in Chart 10 and indicate that the first state of emergency led to an increase in payments and a decrease in receipts, as in the previous estimation results. However, the absolute values of the coefficients for the second state of emergency are smaller than those for the first one, and they are no longer statistically significant for the third one.²⁴ These estimation results imply that while uncertainty at the time of the first state of emergency was extremely high and the desire to hold more cash for precautionary purposes increased, over time, households and firms gradually gained a better understanding of the states of emergency and uncertainty decreased, leading to a decline in the

precautionary demand for banknotes.

[Chart 10] Panel analysis:
Japan (2)

Independent variables:	Dependent variables	
	Payments (year-on-year rate of change)	Receipts (year-on-year rate of change)
Dummy for the first State of Emergency	0.081 * (0.038)	-0.172 *** (0.031)
Dummy for the second State of Emergency	0.001 (0.033)	-0.056 ** (0.023)
Dummy for the third State of Emergency	-0.107 (0.063)	-0.040 (0.043)
DI for current economic conditions (year-on-year difference)	0.001 ** (0.000)	0.009 *** (0.002)
Dummy for the Special Cash Payments	0.308 *** (0.038)	0.118 *** (0.025)
Number of observations	187	187
Adjusted R-squared	0.174	0.555

Note: Estimated using a fixed effects model. The “DI for current economic conditions” and the Special Cash Payments dummy are the same as in Chart 9. The state of emergency dummies take 1 when a state of emergency was in force. The first state of emergency was from April 2020 to May 2020, the second from January 2021 to March 2021, and the third from April 2021 to June 2021. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively. Figures in parentheses are standard errors. The estimation period is from January 2020 to June 2021.

Sources: BOJ; Cabinet Office.

Concluding Remarks

This paper discussed and analyzed developments in banknotes in circulation in Japan from the perspective

¹ Banknotes in circulation are defined as the amount of “payment,” those flows out from the Bank of Japan (BOJ) to financial institutions minus “receipt,” those flow back from financial institutions to the BOJ. In other words, banknotes in circulation are equals to the amount of banknotes outstanding held by financial institutions other than the BOJ and non-financial institutions such as households and firms.

² In this paper, “cash” includes both coins and banknotes. In Japan, banknotes accounted for around 95% of cash as of the end of 2020.

³ For the United States, see, for example, O’Brien, S. (2021),

of the “paradox of banknotes,” focusing in particular on the period of the pandemic.

Reasons for the paradox observed globally before the pandemic were that while transaction demand for banknotes has been negatively affected by the increase in cashless payments, non-transaction demand for banknotes has increased reflecting low interest rates and precautionary demand. Moreover, in the case of Japan, it is likely that the high share of the elderly, who are relatively reluctant to use cashless payment methods, also contributes to the paradox. The paradox has become more pronounced since the pandemic. Reasons include that opportunities to pay in cash further declined due to the economic downturn and the increase in cashless payments amid stay-at-home consumption, while precautionary demand surged due to the extremely uncertain situation brought about by the pandemic. Both of these factors contributed to the increase in banknotes in circulation. Our empirical analysis suggested that staying at home due to the pandemic and the introduction of public health measures led to an increase in banknotes in circulation via two channels: an increase in payments of banknotes and a decrease in receipts of banknotes.

Banknotes in circulation are closely linked to people’s daily lives and, as seen in this paper, developments in banknotes in circulation are greatly affected not only by the business cycle but also by perceptions of future uncertainty. The BOJ will continue to carefully monitor developments in banknotes in circulation and make efforts to ensure a smooth supply of banknotes.

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“Consumer Payments and the COVID-19 Pandemic: Findings from the April 2021 Supplemental Survey,” FEDNOTES, Federal Reserve Bank of San Francisco, and Coyle, K., Kim, L., and O’Brien, S. (2021a), “2021 Findings from the Diary of Consumer Payment Choice,” FEDNOTES, Federal Reserve Bank of San Francisco. For the euro area, see Zamora-Pérez, A. (2021) “The Paradox of Banknotes: Understanding the Demand for Cash beyond Transactional Use,” ECB Economic Bulletin, Issue 2/2021.

⁴ Saito and Takada (2004) argue that demand for banknotes is influenced mainly by (1) transaction demand, (2) the opportunity cost of holding them, (3) the degree of financial system stability,

and (4) the cost of withdrawing and depositing them. As discussed below, (2), (3), and (4) can be classified as non-transaction demand. For details, see Saito, Y., and Takada, H. (2004), “Background to the Recent Decline in the Growth Rate of Banknotes in Circulation,” Bank of Japan Review 2004-E-3.

⁵ As a flip-side of low interest rate environment, the low inflation environment would also lower the opportunity cost, as the fall in the real value of cash holdings between the time cash is withdrawn and the time it is spent is limited.

⁶ Williams, J. (2012), “Cash Is Dead! Long Live Cash!” Federal Reserve Bank of San Francisco 2012 Annual Report.

⁷ Bank of England (2020), “Cash in the Time of Covid,” Quarterly Bulletin 2020 Q4, Bank of England.

⁸ Otani, A., and Suzuki, T. (2008), “Background to the High Level of Banknotes in Circulation and Demand Deposits,” Bank of Japan Review 2008-E-5.

⁹ See Question 23 in the 85th Opinion Survey on the General Public’s Views and Behavior (March 2021 Survey). Respondents were asked to choose from the following eight options: (a) less than 1,000 yen, (b) 1,000 yen or more but less than 2,000 yen, (c) 2,000 yen or more but less than 5,000 yen, (d) 5,000 yen or more but less than 10,000 yen, (e) 10,000 yen or more but less than 20,000, (f) 20,000 yen or more but less than 30,000 yen, (g) 30,000 yen or more but less than 50,000 yen, (h) 50,000 yen or more.

¹⁰ It should be noted that the estimation results may not be stable, since the question has been included only since the March 2021 survey. The only other survey in which this question is included is the September 2021 survey. That said, using the September 2021 data produces very similar results: although the probability of those in their 50s is no longer significantly higher than that of those in their 20s, the probabilities of those in their 60s and their 70s and above remain significantly higher.

¹¹ The estimation results here capture a mixture of characteristics of a specific age group (i.e., age effects), a specific generation (cohort effects), and a specific year (period effects). They therefore do not mean that the same results hold, for example, for those in their 20s today, who are used to using cashless payment means, when they reach their 60s.

¹² Coyle, K., Kim, L., and O’Brien, S. (2021b), “Consumer Payments and the COVID-19 Pandemic: The Second Supplement to the 2020 Findings from the Diary of Consumer Payment Choice,” FEDNOTES, Federal Reserve Bank of San Francisco.

¹³ Specifically, we employ an approach that focuses on differences in the trends of 1,000-yen bills and 10,000-yen bills in circulation, assuming that all 1,000-yen bills are held for transaction purposes. Meanwhile, 10,000-yen bills are assumed to be held partly for transaction purposes and partly for non-transaction purposes. The growth rate of 10,000-yen bills held for transaction purposes is assumed to be the growth rate of 1,000-yen bills plus the difference between the historical average growth rates of 1,000-yen bills and 10,000-yen bills in circulation. Finally, the total amount of 10,000-yen bills outstanding minus the amount of 10,000-yen bills held for transaction purposes thus calculated is regarded as the amount of banknotes held for non-transaction purposes. For details, see Otani, A., and Suzuki, T. (2008).

¹⁴ The hump in spring 2019 was due to the 10 consecutive national holidays to celebrate the start of Reiwa, the new era.

¹⁵ The accumulated disposable income due to the lack of

consumption opportunities during the pandemic is called “forced saving,” as described in the BOJ’s April 2021 Outlook for Economic Activity and Prices (Box 3, “Effects of Widespread Vaccinations and Outlook for Private Consumption”). This mechanism is thought to have contributed to the increase in banknotes in circulation, particularly at the start of the pandemic, when households were unable to spend cash already withdrawn for spending purposes.

¹⁶ Hale, T., Angrist, N., Goldszmidt, R., Kira, B., Petherick, A., Phillips, T., Webster, S., Cameron-Blake, E., Hallas, L., Majumdar, S., and Tatlow, H. (2021), “A Global Panel Database of Pandemic Policies (Oxford COVID-19 Government Response Tracker),” *Nature Human Behaviour*, <https://doi.org/10.1038/s41562-021-01079-8>.

¹⁷ The reason for using the Services PMI is that the use of cash in transactions is relatively limited in the manufacturing sector compared to the services sector. However, similar estimation results were obtained when using the Composite PMI instead of the Services PMI.

¹⁸ As of April 2020, the stringency indices for the United States and the euro area were 72.7 and 83.4, respectively, higher than 45.7 for Japan.

¹⁹ To be exact, the data we used did not directly capture withdrawals and deposits of banknotes between private-sector banks and firms discussed in the previous section. However, given that payments and receipts of banknotes between the BOJ and private-sector banks have proceeded smoothly even during the pandemic, the data is considered to fairly approximate developments between private-sector banks and firms.

²⁰ Mizuno, T., Ohnishi, T., and Watanabe, T. (2021), “Visualizing Social and Behavior Change due to the Outbreak of COVID-19 using Mobile Phone Location Data,” *New Generation Computing*, <https://doi.org/10.1007/s00354-021-00139-x>.

²¹ Specifically, we use the diffusion index (DI) for current economic conditions in the Economy Watchers Survey. The sectoral composition of respondents in the October 2021 is as follows: retail: 39.8%; food and beverages: 5.1%; services: 19.6%; housing: 4.1%; manufacturing firm operators and employees: 9.3%; non-manufacturing firm operators and employees: 11.8%; employment-related: 10.0%; other: 0.3%. Thus, the share of respondents from non-manufacturing-related sectors is high.

²² The statistically significant coefficients on the dummy for Special Cash Payments suggest that these payments made a positive contribution to the demand for banknotes. In fact, around the time of these payments, holdings of banknotes in circulation first increased at financial institutions and then, as disbursements progressed, holdings by entities other than financial institutions such as households and firms increased.

²³ Around 90% of banknotes in circulation are held by non-financial entities and it is therefore reasonable to assume that changes in banknotes in circulation discussed here were driven primarily by the behavior of households and firms.

²⁴ This estimation includes dummy variables for the states of emergency as well as the DI for current economic conditions as independent variables. Therefore, the coefficients on the state of emergency dummies represent the impact of the declaration of the states of emergency themselves on payments and receipts of banknotes, after controlling for the impact of the states of emergency on the economy. In other words, they do not represent the impact of the states of emergency on the economy.