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# Application of Behavioral Economics to the Central Bank's Communication with the General Public

## (Executive Summary)

Until recently, the central bank's main target for policy communication was financial professionals. However, major central banks have begun direct policy communication with the general public. The objective of such movements is to stabilize public inflation expectations to increase the effectiveness of monetary policy and improve the credibility of central banks. The latter's communication with the general public has generated new problems, such as how to attract the public's attention when most of them are indifferent to policy communications and how to support the public's understanding of policy communication. This study proposes applying behavioral economics to cope with such problems, which are closely related to three behavioral biases: information overload, myopic behaviors, and overconfidence. Reducing the volume of information provision, decreasing the difficulty of the content, and changing the design of banks' websites are required to offset information overload. Incentives are needed to restrain myopic behaviors. These include utilizing "teachable moments" and emphasizing "relativity." Countermeasures for overconfidence include encouraging citizens to take a mini-quiz.

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## 1. Introduction

This study discusses the behavioral bias affecting the central bank's communication with the general public and proposes measures to improve communication efficiency by deploying behavioral economics.

Until recently, central banks' main targets for information disclosure were financial professionals, including participants in financial markets, academics, the media focusing on financial markets, and politicians. Meanwhile, central banks' communication approach toward the general public, including consumers and business leaders with no special interest in monetary policy, depended mainly on mass media, such as TV broadcasts and newspapers.

However, central banks have gradually evolved their communication policy to communicate directly with the general public. Thus far, only a few trials have succeeded, as various behavioral biases have emerged and created new problems. The main causes of such behavioral bias are the general public's limited background knowledge and a lack of interest in monetary policy.

## 2. Development of central banks' communication strategy

The monetary policy communication of central banks has evolved significantly over time. For example, a famous governor of the Bank of England (BOE), who resided before World War II, explicitly said that his communication principle was "never explain, never excuse." Even after the war, when central banks started to communicate their policy measures, "constructive ambiguity" is considered the smart way of communication, and most central bankers' idea of transparency is out of sight.[2]

For example, the Federal Reserve Board (FRB) did not publish policy statement letters until 1994, so market participants closely monitored the movement of the Federal Fund rate and judged whether the Federal Open Market Committee (FOMC) made a policy change decision. The FRB has gradually opened its door for further disclosure since 1994, including (1) several revisions of its policy statements to increase related information, (2) releasing FOMC's minutes and transcripts, and (3) holding regular press conferences.

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[2] Bernanke (2022).

The Bank of Japan (BOJ) began releasing its Monetary Policy meeting minutes and transcripts after revising the Bank of Japan Law in 1998. In addition, it began publishing quarterly reports on the Japanese economy. This report contains the meeting participants' outlook for GDP growth rates and changes in CPI for 2 to 3 years ahead, which enabled readers to project the future path of the policy.

The above-mentioned communication efforts mainly targeted professionals, including market participants, academics, media reports, and politicians. Since these professionals have high incentives and sufficient capacities to digest the central bank's communication, central banks could concentrate on conveying the precise intention of the bank without being concerned with the difficulties of the contents. Therefore, the central bank's reports and statements contained many technical terms and numerous long sentences, making it difficult for the general public to understand.

Despite the statements' difficulty, financial professionals responded swiftly to them; financial media reported the policy decision results as quickly as possible, and the market participants reacted immediately to the report and made transactions on bonds, stocks, and foreign exchanges. Prices in financial markets reflect such transactions swiftly. In addition, related important information can be derived from market data: inflation expectations can be derived from inflation index bonds, and forward interest rates can calculate the path of future interest rates. Academics have also shown great interest in policy communication, and abundant research is available on inflation expectations, the effectiveness of monetary policy, and a detailed analysis of financial markets.

Deviating from its long history of communication with professionals, the central bank has recently begun direct communication with the general public. The examples show recent movements of major central banks, as indicated below.

In the case of the BOJ, an illustrated summary of the outlook report has been published since April 2022.[3] The summary indicated four short messages on two pages: business condition, price development, risk factors in business and financial conditions, and monetary policy principles. The summary is located on the third layer of the BOJ's website, top page>Monetary Policy>Summary.

In the case of the European Central Bank (ECB), Governor Lagarde pointed out that direct communication with the public is a frontier for the central bank's communication.

[3] BOJ (2022).

The ECB also published five principles of communication strategy: simplicity, repeating important messages, presenting simple scenarios, selecting explicit targets when emitting messages, and appealing directly to the general public. Following such principles, the ECB publishes "Our Monetary Policy Stance at a Glance," explaining the intention to change policy to the public. It contains information on policy changes, business conditions/price development, growth forecasts, and inflation rates. The summary uses large printing fonts with illustrations and has its banner on the top page of the ECB website.

In the case of FRB, FRB itself does not publish PR materials on policy changes or economic forecasts. However, the Federal Reserve Bank of San Francisco, one of the twelve regional reserve banks, posted a one-and-a-half-minute video on its blog to introduce the policy change determined in September 2022. The entrance to the video is available on the top page, similar to that for the ECB. In the video, two ordinary citizens discuss the meaning of policy changes.

The BOE, the most active central bank in experimenting with policy communications with the general public, introduced a layered structure to its inflation reports (the details of the layered communication will be explained in a later chapter). Their basic communication strategy is to know the target well (stressing the importance of dual-way communications), so the younger generation and low-income households should be prioritized communication targets. That information should be concise and provided with a layered approach.

The above central banks have only recently started targeting the general public in their policy communication, and only a few PR contents are available at the time of writing.[4] This situation is the same in academic research. Prior research in this field has focused mainly on the public's inflation expectation formation, especially its mechanism and stability. Therefore, few practical studies are available on topics such as how far the central bank's information has reached the general public, to what extent such information is understood, and how the information affects the public's economic behaviors, such as consumption and business investments.

[4] Blinder et al. (2022).

## 3. Increasing need for central banks to improve policy communication with the general public

The next question is, what is the objective of central banks to set the general public as the next communication target? Two possible hypotheses are proposed, reflecting the economic and financial conditions of the U.S. and Europe.

The first objective of communication is to stabilize public inflation expectations, which enhances monetary policy effectiveness.

The importance of stabilizing inflation expectations was first recognized when the U.S. economy suffered from high inflation in the 1970s. High inflation increased inflation expectations, wages, and prices during this period, causing the "inflation spiral." Once inflation expectations began to rise, it took a long period of tight monetary policy to restrain high inflation and caused historically high unemployment (on the contrary, in the 1980s, when inflation expectations subdued, a long period of stable economic growth continued, dubbed "the Great Moderation.")

Other central banks, which suffered from high inflation in the 1990s, adopted inflation-targeting policies and increased policy interest rates significantly to subdue heightened inflation expectations.

In addition, the introduction of the untraditional monetary policy adopted after the financial crisis in 2008 required intense communication with the public compared with that of the traditional interest policy. The objective of an untraditional policy is to ease monetary conditions further, even when the policy interest rates reach zero percent, by purchasing government bonds, mortgage securities, and other financial assets. The introduction of untraditional monetary policy changed the central bank's attitude toward policy communication in the following ways.

First, the policy was difficult for the general public to comprehend since its scheme is very complex, unlike the traditional interest rate policy.

Second, a forward-guidance policy, often included in the untraditional policy, makes commitments about future policies, especially maintaining a low-interest rate policy for a certain period. The key to this guidance policy is communication since it does not rely on changing money flows or controlling interest rates.

Third, smooth communication with the public was critical when terminating the policy and returning to the traditional interest rate policy, often called the "exit policy."

To achieve a smooth exit, a detailed explanation of how and when to abort each complicated policy measure is required.

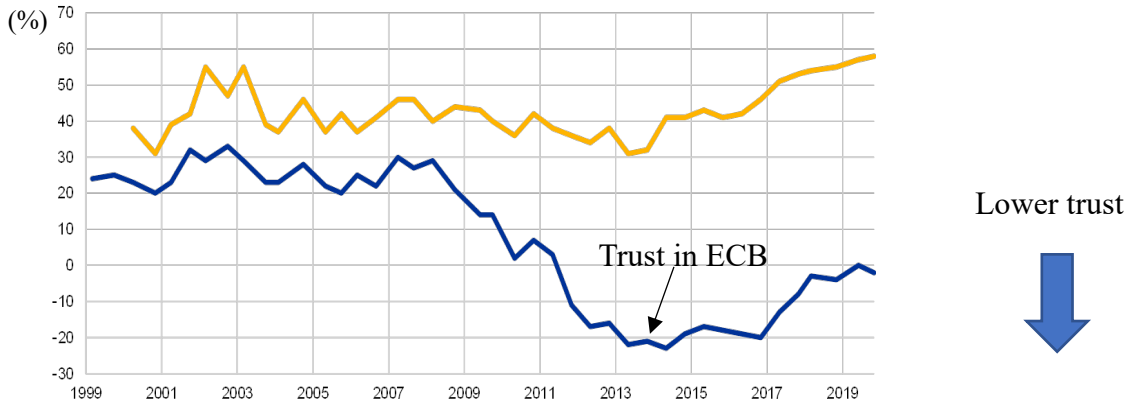
The second objective of communication with the general public was to improve the central bank's credibility by increasing accountability.

In particular, the FRB, ECB, and BOE suffered from low credibility from the public. The triggers of credibility decline were the global financial crisis in 2008 and the European financial crisis in 2010, when business conditions deteriorated rapidly. In addition, since the economic recovery from the crisis was very modest, and some critics even argued for "the secular stagnation," the general public's increased frustrations had long hampered the recovery of central banks' confidence.

Reflecting the above two objectives of central banks, their total volume of communication has significantly increased in recent years. However, as Figure 1 for the case of the ECB shows, public support has barely improved.[5] An executive of BOE called this phenomenon a big puzzle and said BOE was annoyed by the "twin deficit" of citizens' policy understanding and a lack of confidence in the BOE.[6]

Generally, there is a trade-off between the increasing provision of information and the receivers' level of understanding. Therefore, merely increasing the volume of information may be ineffective.

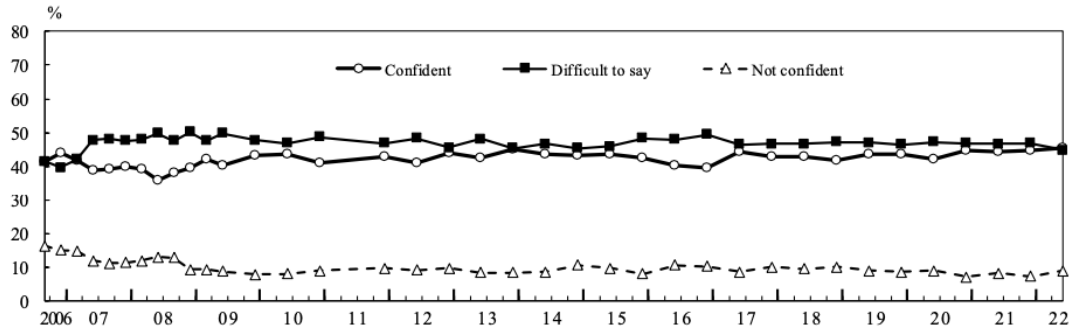
(Figure 1) The trust in the ECB




(note) ECB (2021) Chart 3.

[5] The BOJ's credibility remained stable during global financial crisis. See Figure 2.
[6] Haldane (2017).

（Figure 2） The confidence of BOJ




Notes: 1. The results shown in the line chart are those of the surveys conducted in and after September 2006, when the current mail survey method was introduced.
2. "Confident" comprises the choices "confident" and "somewhat confident" in the questionnaire.
3. "Not confident" comprises "not confident" and "not particularly confident."

(Source) BOJ (2022) "Opinion Survey on the General Public's Views and Behavior," Sept. 2022

## 4. The general public's attitudes toward the central bank's communication strategy

As described in the last chapter, policy communication with the general public is motivated by the needs of central banks. However, its effectiveness also depends on the public's attitude toward communication. This chapter discusses the public's attitude toward the central bank's policy communication.

### 4.1. The general public's advantages from listening to the policy communication

The general public's advantage of listening to policy communication can be summarized as "utilizing information such as interest rates and inflation rates on consumer or business activities and gain some benefits." The following are examples of the advantages of listening to the central bank's information.

(1) Business leaders can utilize relatively reliable information on future business conditions when making business plans or scheduling capital investments.

(2) Households can choose the optimal timing to buy durable goods by understanding the central bank's thinking about the inflation path. Similarly, information on future interest rates can be helpful when purchasing financial assets or mortgage loans.

(3) Avoid falling into money illusion by calculating the real value (for example, real wages, real deposit interest rate, and real asset returns) using the provided inflation

rates.

(4) The public needs not overreact to short-term inflation rate fluctuations, as they understand the central bank's inflation target.

These advantages differ from the central bank's objective of enhancing its communication. In particular, regarding the second objective of the central bank, records indicate that the credibility of central banks cannot be easily recovered without improvements in monetary policy performance.

In the case of FRB, the drastic fall in its credibility due to high inflation in the 1970s recovered only in the 1980s, when Governor Volcker adopted a significant monetary tightening policy. This episode illustrates that recovering the credibility of a central bank requires improvements in macroeconomic performance, such as high inflation, recovery in business conditions, and communication efforts.[7] Empirical studies have also supported this view.

4.2 The rationality of the general public

Traditional economics assumes that individuals are rational and always choose the best option by gathering the necessary information and processing it properly. Central bankers also seem to assume that people are always rational when they receive policy communication.

However, as Figure 3 indicates, consumers' actual behaviors often diverge significantly from the rational behaviors expected of central bankers. Actual public behaviors include (1) paying little attention to the information because of a lack of interest and (2) sparing little effort in seeking information and understanding technical terms and long sentences. Figure 3 shows that 42 percent of the general public has no interest in the BOJ, and 53 percent of respondents answered that the BOJ's message is challenging to understand.

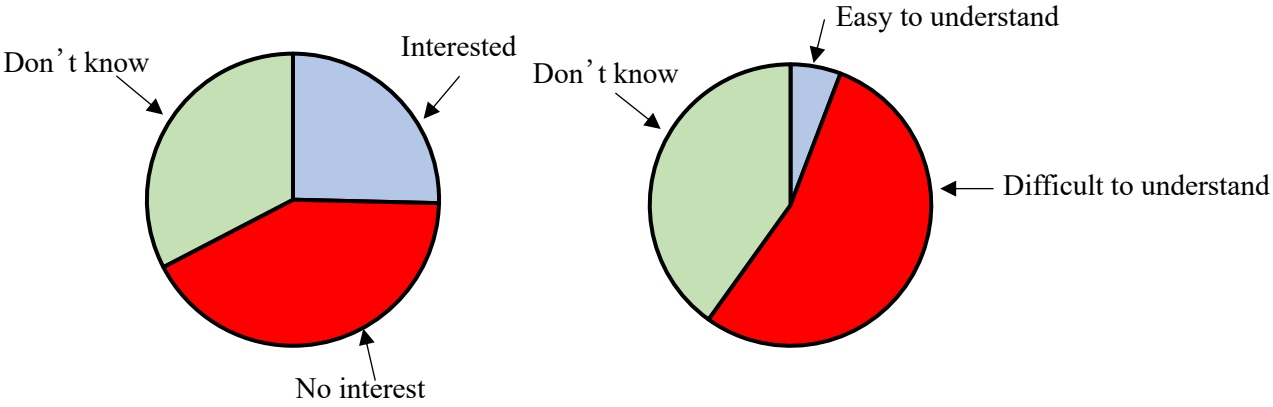
Furthermore, even if individuals accept the central bank's communication, they need adequate economic and financial knowledge to understand the exact meaning of the messages. In this regard, the general public's financial and economic literacy remains low in both developed and developing countries.

For example, in the case of Japan and the U.S., the results of the basic financial

[7] Bernanke (2022).

literacy test with six questions showed that the percentage of respondents answering correctly was 47 percent for Japan and 50 percent for the U.S. One of the six questions asked about basic knowledge about the inflation rate and the percentage of correct answers remained 50 percent for both countries. This test result implies that even if the central bank's communication reaches the general public, we cannot assume that the message will be understood. Therefore, the degree of rationality of the public is an important factor in central bank communication.

(Figure 3) Interest in BOJ (left), the difficulty of the message of BOJ (right).




(Source) BOJ (2022) "Opinion Survey on the General Public's Views and Behavior," June 2022

Various organizations, including central banks, governments, financial institutions, and NPOs, are engaged in financial education to improve the public's financial literacy. However, educational priority is usually placed on personal finance rather than economic education, including monetary policy. In addition, despite these efforts, the level of financial literacy remains low.

4.3 The two hypotheses

As mentioned above, the public often behaves irrationally, contrary to the central bank's assumption. There are two hypotheses to explain this irrationality:

(1) The rational inattention hypothesis advocates that once information processing and search costs are considered, which are neglected in traditional economics, seemingly irrational behaviors are indeed rational.

(2) Behavioral economics deals directly with irrational behavior by considering a person's psychology and attempting to detect the mechanism of irrational behavior.

This section explains the rational inattention hypotheses, and the next chapter discusses the behavioral economics approach.

### 4.4. Rational inattention hypotheses

When inflation rates are low and stable, the rational inattention theory assumes that people no longer consider the effect of inflation and neglect it when making various economic transactions. Such behavior can be explained by the limited information-processing ability of human beings, which makes them unconsciously indifferent to low-prior information. Although the hypothesis is named "rational," the idea of the limited ability of human beings is similar to the idea of bounded rationality.

According to the theory, "rational" people become indifferent to inflation rates when the cost of information seeking/processing is higher than the benefits of utilizing information to improve their activities.

The rational inattention theory even predicts that people stop searching for information about future inflation rates and assume that the future inflation rate will be the same as the present level when the inflation rates remain low and stable for a long period. A typical example of this is the Japanese economy from 2000 to 2020. This type of behavior is alternatively called "adapted expectation theory," and empirical studies support such behaviors prevailing in Japan during this period.[8]

In addition, when the BOE called for a twin-deficit puzzle in the 2010s, the European economy also suffered from low (perhaps too low) and stable inflation rates, similar to the Japanese economy.

An interesting point of rational inattention theory is that if inflation rates increase to a certain level, the public pays attention to the central bank's communication. This movement is caused by a change in the balance between the cost and benefit of listening to the central bank's communication. Once information on inflation rates becomes important for citizens, they begin searching for discount stores and insisting on wage increases on a real basis, which in turn increases people's inflation expectations.

As inflation rates began to rise rapidly from 2020 worldwide, this is a good time to evaluate the robustness of the rational inattention theory in practice. If the theory holds, the public will pay more attention to the central bank's communications and change its

[8] Ichinoe et al (2019).

consumption behavior.

## 5. Behavioral biases obstructing policy communication

This chapter explains the behavioral economics approach to irrational behavior related to policy communication.

### 5.1. The four conditions of exhibiting behavioral bias

According to behavioral economics, when the four conditions below are satisfied, they lead to irrational behaviors.[9]

(1) Decision-making with complicated information processing
(2) Decision-making with risks and uncertainty attached
(3) Decision-involving future events
(4) Decision-making with any reward attached.

We checked whether the above four conditions were satisfied when the public received the central bank's communication.

Condition 1 is satisfied, as understanding the contents of policy communication requires knowledge of economics and finance and the ability to digest long and technical sentences. In addition, the recent implementation of untraditional monetary policies has increased communication complexity.

Condition 2 is satisfied, as risk factors and uncertainties are crucial to analyzing future business conditions and monetary policy development. Condition 3 is also met, as communication contains information on the future development of business conditions and monetary policy. Finally, Condition 4 is satisfied, as discussed in Section 4.1. Reliable information provided by communication policies can be useful in consumer behavior and business activities.

As all four conditions are satisfied, behavioral biases may occur in policy communication aimed at the public. The first step is to identify the types of bias affecting communication.

[9] CCFSI (2012).

### 5.2. The public's behavioral bias hampering policy communications

This section discusses three types of behavioral bias which affect policy communication.[10]

#### 5.2.1. Information Overload

Consumers cease processing and become indifferent to information when too much information is provided simultaneously. Such behavior is called "information overload" and reflects an unconscious movement of avoiding complicated thought processes.

The central bank's policy communication involves complicated information, including the objective and measure of the monetary policy, policy decisions and background information, and the future inflation rate path. Although all the information is disclosed on the website of the central bank, the public with little background knowledge is easily trapped in information overload and fails to access the information they are seeking.

In addition, the chances of falling into information overload increase by adopting an untraditional monetary policy as it increases the complexity of policy measures.

Furthermore, information on monetary policy is published not only by the central bank but also by mass media and financial analysts, who intentionally criticize the central bank for attracting the attention of the public. As consumers may choose information that has a strong appeal but lacks reliability, the central bank's communication may not reach the intended audience.

Once citizens fall into information overload, they become indifferent to related information and lose interest in seeking further information. This tendency is stronger among people with low levels of financial literacy. Providing further information to such people is pointless in such a situation, as their thought processes become more complicated, and information overload persists.

#### 5.2.2. Myopic behavior

People tend to choose options that will become a disadvantage in the long term but have appealing points in the very short run. In addition, they often postpone actions that will be beneficial in the long run, as they would like to avoid doing the immediate and

[10] CCFSI (2012).

small actions required and escape from psychological pressures. Such unconscious behaviors are called “myopic behavior.” According to a survey on behavioral bias, 46 percent of the entire sample showed myopic behavior[11].

In the case of central bank communication, myopic behavior makes people inactive in policy communication. Since they underestimate the long-term benefit of policy communication, they become indifferent to the central bank’s communication by prioritizing other short-term activities with small immediate benefits. In addition, a small workload to obtain information from the central bank, such as accessing and searching the bank’s website and printing research papers, can impose a psychological burden.

Similarly, although understanding political messages require financial literacy, people may postpone engaging in financial education merely because of the psychological burden of small workloads such as application procedures and obtaining information booklets. This tendency strengthens as the level of financial literacy decreases, as indicated by the survey results.[12]

5.2.3. Overconfidence

Without evidence, people tend to overestimate their abilities. This is called “over-confidence” and has adverse effects on many behaviors. For example, people who took a test at school may unconsciously tend to overestimate their ability regardless of the test result; if the test results were excellent, they simply considered it to reflect their high academic abilities, and even if the results were poor, they tended to blame external factors such as any accident or bad luck.

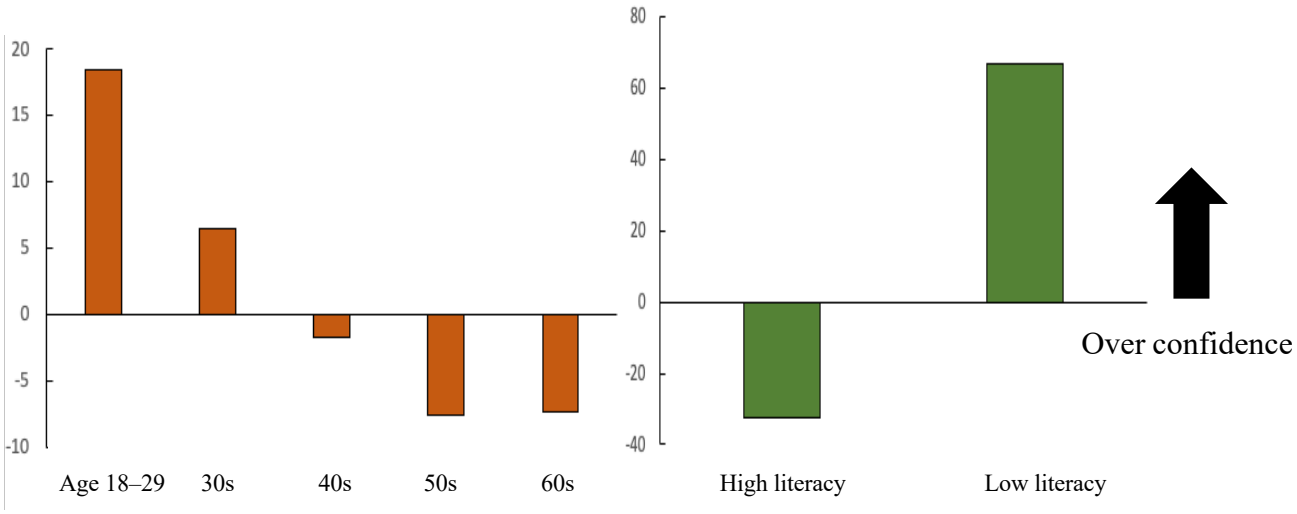
The results of a financial literacy test conducted in Japan showed that citizens tend to overestimate their financial knowledge. As Figure 4 shows, this tendency is especially strong among the younger generation and low financial literacy group.

Individuals who overestimate their financial and economic literacy cannot overcome their weaknesses. Therefore, people with low financial literacy may engage in inefficient financial and economic transactions. Such people may become indifferent to policy communication. As a result, even if a central bank enhances policy communication, its

[11] CCFSI (2022).
[12] Fear (2008).

effect will be limited because of overconfidence.

(Figure 4) Overconfidence in financial literacy by age and financial literacy level




(Note) Source: CCFSI (2022). The level of over confidence is the difference between actual test score and self-reported score.

## 6. Application of behavioral economics to contain behavioral bias in policy communication

This chapter discusses ways to restrain behavioral bias when people receive policy communication.

One clue to the solutions is that the objectives of the central bank's policy communication are similar to those of financial education. Both activities share the problem of "how to increase knowledge and improve behaviors of the citizens with behavioral bias and with little interest in the subject."

Organizations engaged in financial education, including the OECD, have actively utilized behavioral economics to improve the efficiency of financial education.[13] Therefore, this chapter discusses countermeasures for the three behavioral biases described in Chapter 5 by applying the behavioral economics approach to financial

[13] OECD (2018), OECD (2019).

education.[14]

6.1.1 Countermeasures for information overload

The basic principle to cope with information overload is significantly reducing the volume of information the receiver must process simultaneously. In the case of policy communication, the measures shown below can be effective:

(1) Reducing the volume of information and stressing the relativity

Policy communication should be concise to reduce behavioral bias. However, merely reducing the number of words may deteriorate the exactness of the communication content, and rewriting the whole content is required. In the case of monetary policy communication, complex and technical policy measures such as types of market operations or untraditional policy measures should be excluded to reduce complexity. However, the central bank should emphasize information closely related to citizens, such as wage increases, employment conditions, and price development.

(2) Decreasing the difficulty of content

The current policy statements published by central banks are mainly aimed at professionals. A study by the ECB indicated that a university graduate level of comprehensive ability is required to understand policy statements. However, there is a trade-off between the difficulty and exactness of the policy statement. In addition, rewriting statements to lower the difficulty usually results in an increased number of words and sentences, which is contrary to the basic principle of reducing the volume of the contents.

(3) Improving website content by focusing on the general public

Websites have become major communication tools for central banks. To avoid information overload, the entrance to web pages for the general public must be placed on the top page of the central bank's website so that the public can easily detect it.

In addition, a general index page should be placed at the top of the web pages intended for general public use to serve as a one-stop service. Website users may be encouraged to take a mini-quiz, leading to webpages with appropriate difficulty and content. In addition, web pages may offer several options so that users can choose their

[14] CCFSI (2013).

interests.

An example of the inflation report of the BOE contains visual summary pages for the general public in addition to the main pages aimed at financial professionals. This type of report structure is called a layered-communication method, and links are placed on the visual pages to refer to the detailed explanation on the main page.

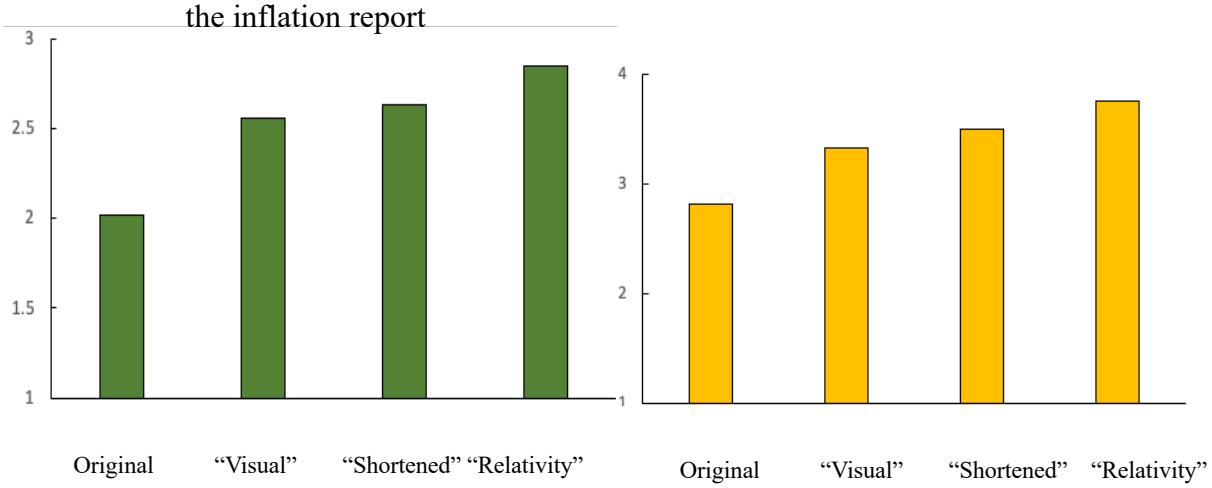
In addition, the BOE experimented with a test using its inflation report with corroboration with the Behavior Insight Team (BIT).[15] They used the February 2018 version of the report (monetary policy part) with three types of modifications to compare the test scores. The modifications are as follows:

(i) Visual summary version: Lower the difficulty of the original content (university-graduated level) to junior high school level and attached illustrations.
(ii) The shortened version: As the word count of the visual summary version increased compared to the original, they shortened the word count to half of the original.
(iii) The "relativity" stressed version: Applying behavioral economics, sentences and data were rewritten to stress "relativity" to the readers.[16]

A sample size of 2,275 was evenly divided between the original and the three modifications shown above. Figure 5 indicated that both the actual average scores and the average self-assessment scores are in order of "the original" < "visual summary" < "shortened version" < "relativity version." Therefore, the relativity stressed version had the strongest effect. On the contrary, BOE's credibility showed only minor changes, even in the case of the "relatively version" (Figure 6).

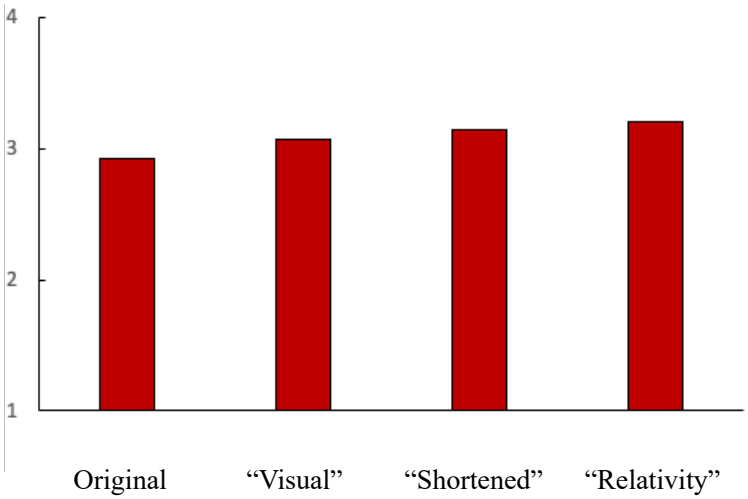
[15] BOE (2018).
[16] For example:
(1) use "we" instead of "BOE," and use "you" instead of "citizens."
(2) convert technical words to daily use ones, such as "price rise" instead of "inflation."
(3) instead of using nationwide macro figures, regional-based data are used to attract readers' interests.
(4) explicitly indicated the relation between each macro variable, such as GDP, price, and wages.

(Figure 5) Actual score (left) and self-assessment score (right) of the BOE's experiment with the inflation report




(Source) BOE (2018).

(Figure 6) Assessment of the BOE's credibility by type of report




(Source) BOE (2018).

6.1.2. Countermeasures for myopic behaviors

A person with myopic behavior responds strongly to immediate rewards and discounts the benefits of future rewards. The basic principle to offset this behavioral bias is to offer immediate and appealing incentives to change behavior.

(1) Offering incentives.

Offering incentives can change public behavior. Incentives can be highly appealing to the receiver, regardless of the value for money, such as issuing certificates when

completing the learning materials. Offering lotteries and mini-games may also increase the motivation to participate in communication.

(2) Utilizing "teachable moments."

As rational inattention theory advocates, citizens are indifferent to monetary policy in low and stable inflation periods because the benefit is lower than the cost when seeking policy communication. This benefit/cost balance changes when the public conducts financial and economic transactions. In such a situation, as citizens' interests in movements of interest rates and inflation rates increase, the benefit from listening to policy communication outweighs the cost; therefore, myopic behaviors will be diminished. These changes imply that if a bank can approach the public at the right time, behavior change is much easier than in normal times. Such timing is called "teachable moments." Examples of "teachable moment" include (1) people becoming interested in the interest rate movements when purchasing mortgage loans, (2) people paying attention to inflation rates when negotiating wages, and (3) people searching for projections for future business conditions when planning business fixed investments.

The key is to detect the timing of "teachable moments" of the general public. It might be necessary to develop apps or specially designed websites, tie up with other organizations, including financial institutions, and conduct seminars for business leaders.

(3) Emphasizing relativity

As the central bank's reports, such as inflation reports, are full of economic data, it is difficult to feel the relativity of monetary policy with our daily lives, and citizens lose interest in the reports. People may lose learning motivation if the content lacks relativity and becomes indifferent to central bank communication. To increase relativity, macro data should be transformed into micro data (for example, convert GDP to per capita disposable income) and stress the frequently mentioned data in our daily lives, such as wages, unemployment, price level, and interest rates.

(4) Using "framing effect" and "loss-aversion."

Behavioral economics tells us that when people gain or lose the same amount of money, the loss will cause approximately 2.5 times more sadness than happiness from gaining money. This is called loss aversion, and people are more sensitive to losing money. Therefore, instead of emphasizing the benefit derived from receiving policy communication, it may be more appealing to the public if the disadvantages of living without adequate knowledge of monetary policy are emphasized. Although the meanings

of the above two narratives are essentially the same, people dislike the story with potential loss because of people's tendency toward loss aversion. Examples of potential losses include losing the best opportunity to start a business fixed investment, incurring financial losses from financial asset investments, and unsuccessful wage bargains.

(5) Removal of small obstacles.

As described in section 5.2.2., citizens postpone access to policy communication because of small obstacles. To reduce such hurdles, the central bank needs to devise every measure, such as the structure of the websites, ease of print-out, and simple application forms for seminars, to ensure easy access to the information for which citizens are searching. In addition, various means of communication, including the Internet, paper, TVs, and seminars, should be prepared for use according to the needs of various user groups.

6.1.3. Overconfidence

It is challenging for people to realize their confidence. Therefore, the basic principle to offset the effect of overconfidence is to allow them to realize it based on a third party's suggestion.

In the case of policy communication, one way to create such an opportunity is to let the participants, who visited the website or participated in a seminar, take a short quiz about monetary policy or the macroeconomy. Participants with overconfidence will realize their overconfidence when the test score is lower than their self-estimated score.

## 7. Remaining issues

7.1. Improvement of the general public's financial and economic literacy

Policy communication with the public does not end when information reaches citizens. Communication is considered a success when citizens correctly understand the messages and change their behaviors according to the information. As discussed in Section 4.2, citizens' ability to understand messages depends on their level of financial literacy. Therefore, there is an urgent need to promote financial education to improve the current low level of financial literacy.

7.2. Targeting people with low financial literacy

People with low financial literacy have a poor understanding of economics, are mostly indifferent to policy communication, and are overconfident. A study indicated that

the lower the financial literacy, the higher and more unstable the expected inflation.[17] Therefore, to increase the effectiveness of policy communication, central banks should target people with low financial literacy.

The first target group will be women whose financial literacy is lower and more risk-averse than men. Communication aimed at women should consider such tendencies and choose appropriate means of communication.

The second target group was the young generation and low-income groups. For the young generation, communication content should stress relativity and utilize new media, such as the Internet and gamification. For the low-income group, relativity is also important, and using the peer effect by corroborating with related NPOs would be helpful.

The last target is the aged group, as financial literacy is known to peak in people in their 50s. In addition, as the percentage of people using the Internet is lower than that of the younger age group, the choice of means of communication is important. For example, making presentations at meetings for the elderly and using paper-based media would be effective.

### 7.3. Running Randomized Controlled Trials (RCTs)

When applying behavioral economics to public policy, the efficiency of such tests should be examined using RCTs. The BOE experiment, described in section 6.1.1, also employed RCTs, randomly dividing subjects into four versions of the inflation report and statically testing the difference in percentages of understanding each content. Reaping the experiment and RTC, in turn, will increase the efficiency of experimental communication methods.

## 8. Conclusion

This study discusses the application of behavioral economics to the central bank's communication with the public.

Until recently, the central bank's main targets for policy communication were financial professionals. Banks relied on the mass media to communicate with the general public. However, major central banks have recently begun direct policy communication

[17] Blinder et al. (2022).

with the general public. Such movements aim to stabilize public inflation expectations to increase the effectiveness of monetary policy and improve the credibility of central banks.

Central banks' communication with the general public requires significantly different approaches than those for communication with financial professionals. Specifically, two main issues are attracting the public's attention when most are indifferent to policy communication and encouraging public understanding of policy communication.

This study proposes applying behavioral economics to cope with these two issues. When faced with policy communications, three major behavioral biases were found to affect the public: information overload, myopic behaviors, and overconfidence.

Offsetting information overload requires reducing the volume of information provision, decreasing the difficulty of the content, and changing the design of banks' websites. Restraining myopic behaviors requires offering incentives, utilizing "teachable moments," and emphasizing "relativity." Countermeasures for overconfidence encourage citizens to take mini-quizzes.

Behavioral economics can be applied to various social problems, such as public policy, medical services, and pension plans. As described in this study, it can also be a helpful tool for central banks' communication policies.

## References


CCFSI (2012) “The importance of applying behavioral economics to financial education,” The Central Council for Financial Service Information (Japanese only)

—— (2013) “Consumers’ gain in learning incentives and behavior change by application of behavioral economics” (Japanese only)

— (2022) “Financial Literacy Survey”

Bank of England (2018) “Enhancing Central Bank Communications with Behavioural Insights,” Staff Working Paper No.750, D. Bholat, N. Broughton, A. Perker, J. Ter Meer, E. Walczak

Bank of Japan (2022) “Nichigin” No.71 Autumn 2022, p. 20-21 (Japanese only)

Bernanke (2022) “21st Century Monetary Policy—the Federal Reserve from the Great Inflation to COVID-19”

Blinder et al. (2022) “Central Bank Communication with the General Public: Promise or False Hope?” NBER Working Paper No. 30277 July 2022, A. Blinder, M. Ehrmann, J. de Haan, David-Jan Jansen

ECB (2021) “Clear, Consistent and Engaging: ECB Monetary Policy Communication in a Changing World” Work Stream on Monetary Policy Communications, ECB Strategy Review

Fear J. (2008) “Choice Overload, Australians Coping with Financial Decisions,” The Australia Institute, Discussion Paper No.99, May 2008

Haldane (2017) “A Little More Conversation, A Little Less Action,” Speech by A.G. Haldane at Federal Reserve Bank of San Francisco Macroeconomics and Monetary Policy Conference

Ichiue et al. (2019) “Recent inflation dynamics: a case of Japan,” H. Ichiue, Y. Uno, T. Okuda, T. Fueki, K. Maehashi, Bank of Japan Working Paper Series No.19 J-3, March 2019, (Japanese Only)

OECD (2018) “The Application of Behavioural Insights to Financial Literacy and Investor Education Programmes and Initiatives”

—— (2019) “Smarter Financial Education, Key Lessons from Behavioral Insights in to Financial Literacy Initiatives”