Mizuho Economic Outlook & Analysis

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Economic Impact of the Second Supplementary Budget

Early execution and recovery of trust in government are the keys

< Summary >

◆ Additional fiscal expenditures promised in the second supplementary budget amounts to 33.2 trillion yen, and it includes enhancing financial support and contingency funds. We estimate the budget's effect on GDP to be +0.9%, including its indirect impact by mitigating the fall in private consumption and investment.

◆ The progress of the budget execution appeared to be delayed. Amid strengthening employment adjustment pressure due to the tight cash position of companies, the government faces the pressing need to execute its economic policies quickly by making the most of ICT.

◆ To attain a sufficient fiscal stimulus effect, it is also important that the government improves public trust. Higher credibility of the government has proven effective in preventing a drop in consumer sentiment, which will prevent a decline in marginal propensity to consume and multiplier effect.

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1. Introduction

The coronavirus disease (COVID-19) pandemic is causing severe damage to the Japanese economy. The rate of GDP growth for the January-March quarter of 2020 stood at -0.6% q-o-q (an annualized -2.2%). The private consumption fell following the government's request in late February for the public to stay home and refrain from holding large events. Furthermore, exports also declined significantly centering on goods bound for the United States and Europe, as their major cities were forced into lockdown in March. GDP in the April-June quarter of 2020, a period when the negative impact on personal spending and production activities became serious, was dropped by around 30% on an annualized basis, which is far worse than the decline registered during the January-March quarter of 2009 (an annualized -17.8% from the previous quarter) after the Lehman Brothers collapse. Although the economy is expected to return to a positive growth track after the July-September quarter (assuming there is no second wave of coronavirus infections), the pace of economic recovery will most likely be gradual because of the certain period required for medicines and vaccines to become widespread. It is highly likely that the Japanese economy in FY2020 will contract more substantially compared with FY2008 (-3.4%) and FY2009 (-2.2%).

Amid such circumstances, the Cabinet of Japan approved on May 27 a draft second supplementary budget for FY2020, which was enacted by the Diet on June 12. The amount of additional expenditures totals 31.9 trillion yen, as a result of adding such items as enhancing financial support (11.6 trillion yen), establishing a rent support grant for SMEs (2.0 trillion yen), enhancing the Employment Adjustment Subsidy (0.5 trillion yen), supporting medical treatment providers (3.0 trillion yen), and above all, providing more contingency funds for COVID-19 (10.0 trillion yen). This second budget exceeds the first supplementary budget approved in April (25.7 trillion yen) and is the biggest supplementary budget ever enacted. The total size reaches 117.1 trillion yen (**Chart 1**) if we include fiscal investment and loan programs (FILP) and loans granted by private financial institutions.

Considering the on-going rapid deterioration of the Japanese economy, we believe few people would disagree with the government's move to implement fiscal stimulus measures to stave off the economic fallout caused by the pandemic. The problem is, however, whether the government's economic package can attain the expected economic effect (or what the prerequisites are to achieve the desired effect). In light of this question, this report reviews the latest supplementary budget (second supplementary budget), estimates its impact on GDP, and discusses the key two factors to maximize the effect.

2. Overview and economic impact of the second supplementary budget: Impact of measures that support and boost GDP is estimated to be +0.9%

While the total size of the second supplement budget is gigantic, the amount of additional fiscal expenditures accounts for a limited portion. Actual government spending is about 33.2 trillion yen, including the Special Account (transfer to the Special Account for Employment Insurance related to enhancing the Employment Adjustment Subsidy, etc.), and the amount of expenditures that can affect GDP is considered to be even smaller (**Chart 2**).

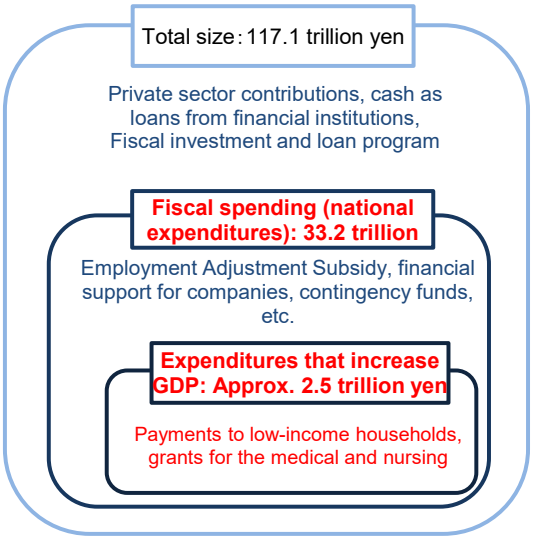
Chart 1: Overview of the second supplementary budget (general account)

(Trillion yen)

Major items	Budget
Enhancing the Employment Adjustment Subsidy	0.5
Enhancing financial support (loans to companies, providing capital)	11.6
Establishing a rent support grant for SMEs	2.0
Supporting medical treatment providers (emergency comprehensive support grant for novel coronavirus disease, etc.)	3.0
Expanding the "Special Allocation for Revitalization to Cope with COVID-19"	2.0
Enhancing the Subsidy Program for Sustaining Businesses	1.9
Additional payments to low-income single-parent households	0.1
Others (enhancing grants for micro, small-and medium-sized business operators, etc.)	0.6
Contingency funds for COVID-19	10.0
Total additional spending (national expenditures)	31.9

Source: Made by MHRI based upon the Ministry of Finance.

Chart 2: Size of measures (Fiscal Expenditures and the total size of the second supplementary budget



Source: Made by MHRI based upon the Ministry of Finance and various media sources.

As the government does not position the current second supplementary budget as a measure to stimulate demand, it does not contain such measures as additional public investment or cash transfer to households. Since cash distributed to enhance financial support for companies, boost the Employment Adjustment Subsidy, and establish a rent support grant will most likely be used to cover the fixed cost (personnel expenses and rent) of maintaining business activities, it is less likely that these funds will be used for additional capital investment. As contingency funds carry a degree of uncertainty as to whether they will actually be paid and how they will be used, it seems inadequate to include such funds in the estimation of economic impact now. Spending expected to generate an economic impact and push up GDP is estimated to be around 2.5 trillion yen, including

additional payments to low-income single-parent households and the Emergency Comprehensive Support Grant for the Coronavirus Disease (payments to medical care and long-term care providers and financial support to install equipment in medical and nursing facilities).

Based on the above analysis, we estimate the effect of the second supplementary budget on GDP to be approximately +0.2%. To elaborate, in the Emergency Comprehensive Support Grant for the Coronavirus Disease (about 2.3 trillion yen), we assumed that 50% of the spending, other than payments to medical care and long-term care providers (around 1.8 trillion yen), will be used for capital investment (e.g., air-conditioning-related facilities and medical equipment). This investment is expected to increase GDP by about +0.2%pt. The effect for payments to low-income single-parent households (around 0.1 trillion yen) and medical care and long-term care providers (about 0.4 trillion yen) is rather limited and their effect remains at +0.02%pt, assuming a marginal propensity to consume of 0.25[1]. Items to increase government spending, such as additional placement of teachers and assistant teachers (31.8 billion yen), which are part of the supplementary budget, have also small impact on GDP (+0.05%pt).

In sum, the positive impact of the second supplementary budget on GDP growth is not very significant. This is no surprise since the second supplementary budget, as mentioned earlier, is not aimed at stimulating demand, but rather at assisting companies to sustain their businesses and ensuring welfare, and this alone should not be the focus of concern.

However, payment measures, such as providing funds to companies, enhancing the Employment Adjustment Subsidy and offering a rent support grant for SMEs have the effect of mitigating the drop in consumption and capital investment, since they can reduce the financial burden of fixed expenses and protect the cash position of companies.

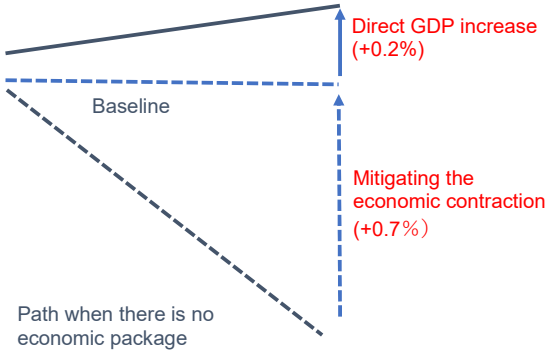
If we take into account these indirect GDP push-up effect (compared to the case where there are no economic measures), we estimate a GDP boost of roughly +0.9% (of which +0.7% comes from the indirect effect of alleviating the economic downturn) (**Chart 3**). Expenditures related to firms, such as the Subsidy Program for Sustaining Businesses and rent support, are regarded as factors that can increase company cash flow,[2] and the contribution of capital investment to GDP growth is expected to be about +0.8%pt, calculated based on the multiplier of the MHRI macroeconometric model. Concerning payments to households (we also included the Employment Adjustment Subsidy as one of the factors to increase personal consumption, since it will ultimately bring benefits to

[1] The Director General for Economic Research of the Cabinet Office (2012) pointed out the cash payments in 2009 increased consumption by an amount equivalent to 25% of the total cash received by households.

[2] We excluded enhancing financial support for companies (expanding loans to companies and so forth) from the calculation since it is not directly linked to GDP growth.

households), we assumed that the level of marginal propensity to consume is 0.25 and estimated the contribution of consumption growth to GDP to be around +0.1%pt (**Chart 4**).

Chart 3: Image of economic impact



Source: Made by MHRI.

Chart 4: Economic impact (by component)

	Economic Effect	
	Amount (Trillion yen)	Contribution to GDP (%pt)
Total	**4.9**	**0.9**
Household consumption	0.4	0.1
Capital investment	4.3	0.8
Public demand	0.3	0.0
Government consumption	0.3	0.0
Public investment	0.0	0.0

Notes: 1. Values in the table are estimated by MHRI based on information available at the time of writing this report, so they must be interpreted with sufficient latitude.
2. The total of each value may differ as a result of rounding off to the nearest unit.
Source: Made by MHRI based upon materials of the Ministry of Finance.

Although the budget will not be sufficient to cover the entire economic downturn, as GDP of the April-June quarter fell by about 30% on an annualized basis, we can still evaluate the supplementary budget as supporting the Japanese economy to a certain extent. Besides, a notable feature of the second supplementary budget is the huge amount of contingency funds for COVID-19 (10.0 trillion yen). These funds are intended to provide a "framework" in advance to enable swift payments to support the cash management of firms and to strengthen the medical system. While the government should provide a detailed explanation of how these funds will be used, allowing plenty of room for the government to react to the crisis is reasonable, considering that the risk of a second wave of coronavirus infections remains. It may contribute to GDP growth in the future depending on how the money is used.

It should be noted that the Cabinet Office has officially announced that the second supplementary budget is expected to boost GDP by around +2.0%.[3] The gap in the estimates made by the Cabinet Office and this report is due to the assumption of Cabinet Office that full portion of the budget amounts of the Employment Adjustment Subsidy,

[3] Refer to the Cabinet Office, "Economic Effect of the Emergency Economic Measures to Cope with COVID-19" (released on June 4, 2020).

rent support grant, and subsidy program for sustaining businesses affect GDP.

3. What are the required conditions for the policy package to generate sufficient economic stimulus?

(1) Prerequisites for effective economic measures

In the previous section, we estimated that the second supplementary budget will push up GDP by +0.9%, but to realize this expected magnitude of economic effect, the following two conditions must be fulfilled. The first condition is the quick implementation (execution) of the economic measures. Failure to execute the budget quickly may cause companies and households to miss the necessary timing for receiving subsidies or loans, thereby reducing the expected effect of the fiscal stimulus. The second condition is no change (or at least no reduction) in the marginal propensity to consume and multiplier effect applied in the estimates, as they are calculated based on data before the pandemic. According to an empirical analysis conducted by Sekizawa et al. (2013), the stronger the negative emotion (such as anxiety and depression), the worse consumer sentiment becomes. If negative emotions such as anxiety and fear spread throughout Japan due to the coronavirus, it may reduce the marginal propensity to consume (compared with normal periods) by exerting downward pressure on consumer sentiment. Moreover, the decline of consumer sentiment may also lead to a slash in corporate profit and capital investment (thereby lowering the multiplier effect). In the following section, we discuss what measures should be taken to maximize the impact of the government's economic package by analyzing these two conditions.

(2) Issues related to budget execution: Quick implementation is necessary by taking advantage of ICT

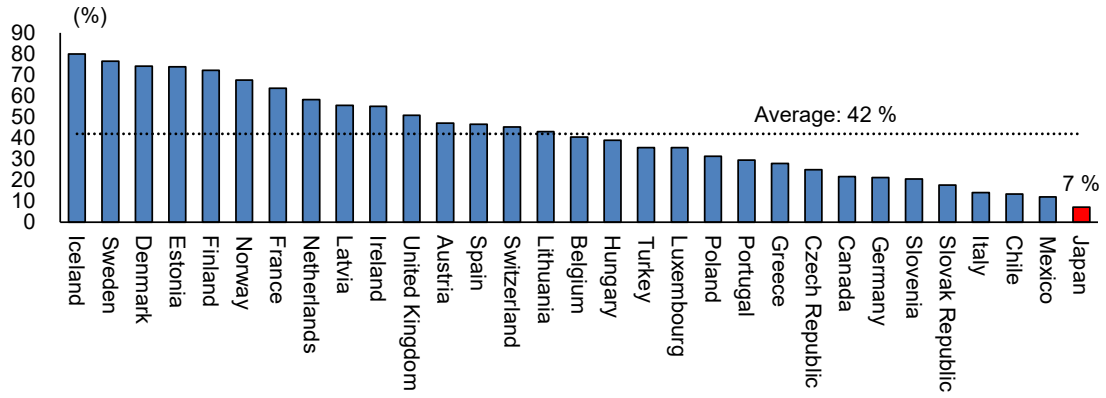
To realize sufficient fiscal stimulus, it is essential that measures be executed swiftly. But if we examine the actual progress of the various measures introduced by the "Emergency Economic Measures to Cope with COVID-19" (approved by the Cabinet on April 20, 2020), some delays in processing are observed.

For example, payment of the Employment Adjustment Subsidy was delayed due to the complicated application process, in addition to insufficient preparation of the counseling and screening system. According to the Ministry of Health, Labour and Welfare, as of June 12 the government has received 164,679 applications, but only 92,616 applications, or 56% of total applications, have been approved. Besides, for the direct transfer payment policy, some confusion in the processing had caused some local municipalities to suspend online applications. In major cities with a large number of households, such as the 23 wards of Tokyo, the media have reported that even dispatching the application forms to households

takes some time. The Ministry of Internal Affairs and Communications said that as of June 10, the amount of transfer payment made stood at 4.9 trillion yen, accounting for only 38.5% of the total budget amount (12.7 trillion yen).

Problems related to the execution of the economic package stem from the slow development of the electronic government initiative. **Chart 5** compares the ratio of individuals who use the internet for sending filled forms via public authority websites in OECD countries. While the average ratio of the depicted 31 countries is 42%, Japan remains only 7%, which is the lowest figure among these countries. While the Japanese government admits that the low percentage of online administrative services is a problem (the Cabinet Office, 2018), this issue has yet to be sufficiently addressed. As for the transfer payments mentioned earlier, it seems that the screening process is undertaken manually, with staff visually confirming the applicants' bank accounts. This suggests that the utilization of ICT remains limited in the arena of public administration. If the government continues to carry out tasks that can be performed electronically in such a labor-intensive manner, it may extend the civil servants' working hours and potentially damage their mental health.

Chart 5: Ratio of individuals using the internet for sending filled forms via public authority websites (2019)



Note: Data of Canada, Mexico, and Japan are of 2018. Data of Chile are of 2017.
Source: Made by MHRI based upon OECD.Stat.

The cash flow of companies has been deteriorating day by day, and the number of bankruptcies related to COVID-19 has surged to about 250, centering on accommodations, eating and drinking establishments, and apparel retailers. With the decline in the number of employees (February to April period in 2020: -1.18 million) being close to the fall seen during the financial crisis (from August 2008 to July 2009: -1.16 million), the negative impact on the labor market is spreading. Under these circumstances, the government is required to establish a system or framework that enables the swift execution of various

policy measures. Should the payment of various benefits be delayed, the severe impact of the COVID-19 crisis may become even more widespread, triggering a hike in corporate bankruptcies and unemployment before the intended economic effect can be sufficiently attained. The government needs to make the most of ICT to realize early execution of its support measures; and at the same time, the government should strongly advance the establishment of an electronic government based on the lessons learned during this pandemic crisis.

(3) Issues related to credibility: Higher public trust in government is imperative to prevent worsening of the consumer sentiment

Even if the budget is executed smoothly, the economic effect of the policy package may prove smaller than expected if the marginal propensity to consume and multiplier effect decline due to people's heightened worries and uncertainties amid the COVID-19 crisis. To generate a sufficient stimulus from the government's policy package, it will be necessary to reduce people's anxiety as much as possible. This report uses the results and data of Fetzer et al. (2020)[4] to show that the credibility of the government can lower people's worries through the analysis of causal inference.

Fetzer et al. (2020) collected data by recruiting survey participants via Twitter using a method called snowball sampling. Survey questionnaires were translated into 69 different languages, including Japanese, and more than 110,000 responses were collected from 177 countries during the period from March 20 to April 7 in 2020.[5] Fetzer et al. (2020) selected the data of 58 countries (including Japan) where more than 200 samples were available to make an international comparison and reported there was a correlation between people's perception of government responses and the level of worries.

Chart 6 is a scatter diagram of data from 58 countries based on the results of Fetzer et al. (2020). The "worries index" on the vertical axis represents the level of worries, which is constructed by aggregating the five survey questions concerning mental health.[6] The data are standardized, and the highest score is 2.3 while the lowest is -3.3. The higher (lower) score indicates the people are more (less) worried. In **Chart 6**, we can observe that the worries index becomes lower when the ratio of people who "trust the government to take care of its citizens" is higher, and also when more people "think the government has

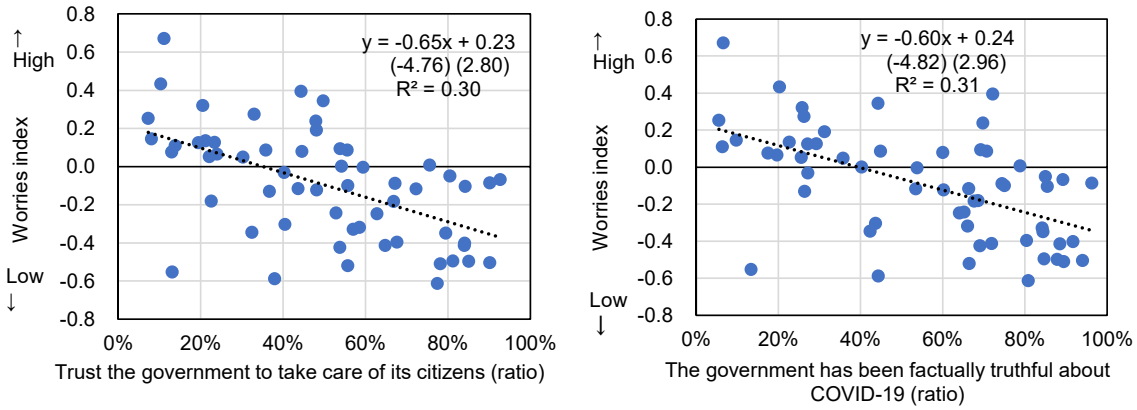
[4] The results and data of Fetzer et al. (2020) are available on the OSF website (https://osf.io/3sn2k/). Dataset used in this report was downloaded from the website on May 22, 2020.

[5] Fetzer et al. (2020) construct weights to correct for differences in income, education, age, and gender between the survey respondents and the general population in each country. These weights are applied in **Chart 6**, but not in the causal inference of **Chart 7**.

[6] More specifically, the five questions are, (1) I am nervous when I think about current circumstances, (2) I am calm and relaxed, (3) I am worried about my health, (4) I am worried about the health of my family members, and (5) I am stressed about leaving my house. Each question is answered using a 5-point scale (from 1 = "Does not apply at all" to 5 = "Strongly applies"), and the sum of all five questions is combined as the "worries index" (question (2) is reversely coded).

been factually truthful about COVID-19." It should be noted that the diagrams contain the results of simple linear regression, and the coefficients of explanatory variables are statistically significant. It can be statistically shown that people's worries and trust in government are negatively correlated.[7]

Chart 6: Relationship of the ratio of government trust and worries index (international comparison)



Note: Values in the parentheses are t-values. The heteroskedasticity-robust standard error is used. The weight of each country is equal in the regression analysis.
Source: Made by MHRI based upon the data of Fetzer et al. (2020).

However, the above implications are obtained from the analysis of international comparison, and it does not necessarily mean that Japan carries the same tendencies. Therefore, we conducted an analysis using only data for Japan by employing the causal inference methodology to see whether people's worries lessen as their trust in government becomes higher (more specifically, we calculated ATT [average treatment effect on the treated] through the propensity score matching). The three variables are employed to represent people's trust in government : (1) Do you think the government has been factually truthful about the coronavirus outbreak? (Yes = 1, Others = 0) (2) Do you trust the government to take care of its citizens? (Yes = 1, Others = 0) (3) Do you think the reaction of the government to the current coronavirus outbreak is appropriate? (Yes = 1, Others = 0) (Hereinafter, these variables are referred to as "trust variables"). As the sample size of Japan's data is quite limited, data for the United States (US) and United Kingdom (UK) is added in our analysis[8], since the two countries offer a large number of samples and values concerning government trust (share of (1) to (3) as mentioned above) are closer to Japan. If our analysis of the US and UK shows similar results to Japan, we believe this will

[7] While **Chart 6** only shows the results of simple linear regression, Fetzer et al. (2020) report the results of the multiple regression analysis adding control variables such as the number of COVID-19 infections and deaths in each country. Although the coefficient values are different, both **Chart 6** and Fetzer et al. (2020) suggest the same implications.

[8] Sample size for Japan is 579, but that for the US is 11,476 and for the UK is 11,285.

enhance the robustness of our study results.

An intuitive description of our analysis method is as follows.[9] First, we match individual (A) who answered that he or she trusts the government (trust variable = 1) with an individual (B) who carries similar characteristics and perception of A (in term of age, education, age, income, perception of COVID-19, and so on) but does not trust the government (trust variable = 0). Next, we calculate the "worries index of A – worries index of B" (=treatment effect), and if the value derived from this calculation is negative (if the level of A's worry is lower than B's), it means that the presence of trust in government affects people's perception of worry (we assume that if A does not trust the government, the worries index of A is equal to that of B). The objective of this analysis is to go through this process for all respondents who trust the government (trust variable = 1) and calculate the average of differences in the worries index (treatment effect).

Chart 7 depicts this average of differences in the worries index (= ATT). The same tendency is observed in all three countries, and we can confirm that the differences in the worries index (ATT) resulted in negative figures for all trust variables. Our study also suggests that while "think the government has been factually truthful about COVID-19" has a larger impact in Japan, "think the reaction of the government to the current coronavirus outbreak is appropriate" matters more for people in the US and UK. Japan's values for "take care of its citizens" and "reaction is appropriate" show statistical significance at the 10% and 5% level respectively, but the rest are at the 1% level. These results indicate that the presence of trust in government has an impact on the level of people's worries from the perspective of causal inference.

According to the consumer survey conducted by the Hakuhodo Institute of Life and Living (2020) (survey period: May 7 to 11 in 2020), the ratio of respondents who answered they are "worried about the government's actions" reached 81%, suggesting the government is not sufficiently trusted by people and there is a significant room for improvement. To enhance people's trust in government, the government needs to deliver clear messages to the public and execute its economic measures quickly. As the central bank sends transparent messages to the market as part of the monetary policy, communication should also be an important tool for the government. For example, when the government announces a new economic package, it should endeavor to clearly

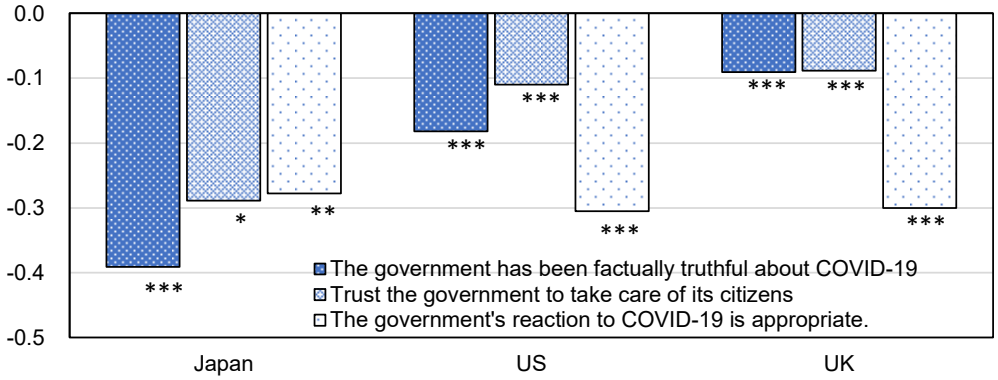
[9] Formally, the analysis method can be written as follows.

$$ATT = E(y_1 - y_0|d = 1) = E|_{P(x)|d=1}\{E(y_1|d = 1, P(x)) - E(y_0|d = 1, P(x))\}$$
$$= E|_{P(x)|d=1}\{E(y_1|d = 1, P(x)) - E(y_0|d = 0, P(x))\}$$

where y_1 is the worries index for those who trust the government, y_0 is the worries index for those who do not trust, d is the trust variable, and $P(x)$ is the propensity score. The propensity score (probability of $d = 1$) is estimated with a probit model using independent variables x. See appendix for the statistical tables.

articulate its underlying purposes and measures of higher priority.[10] It is also imperative that actions follow messages because if people do not receive the necessary support from the government in a timely manner due to delayed execution of the budget, it can weaken the public's trust in the government. If the government can transmit a clear message to the people and speed up its execution, such actions will serve to alleviate public worries and prevent a decline in the marginal propensity to consume and multiplier effect.

Chart 7: Impact of trust in government on the worries index (causal inference)



Note: The bar chart shows the values of ATT. ***, ** and * denote statistical significance at the 1%, 5% and 10% level, respectively. See appendix for the statistical tables.
Source: Made by MHRI based upon the data of Fetzer et al. (2020).

4. Conclusion

In this report, we provided an overview of the second supplementary budget, estimated its economic impact, and pointed out what should be done to maximize its effect. Additional fiscal expenditures of the second supplementary budget amount to 33.2 trillion yen and we estimate that it will increase GDP by +0.9%, including its indirect impact by mitigating the decline in private consumption and investment through payment of the Employment Adjustment Subsidy and support for company financing. The impact of the government's economic measures, however, depends on what the government does after formulating the measures. For the economic package to generate a sufficient effect, it is essential that the government executes the budget quickly by using ICT and increases the public trust in the government to prevent a deterioration in consumer sentiment (thereby, preventing a decline in marginal propensity to consume and multiplier effect).

[10] According to the empirical analysis of D'Acunto et al. (2020), to have a direct effect on the expectation of the households, the simplicity of the policy implication is critical so that even non-expert households can understand.

[Appendix] Estimates of Causal Inference

Table 1: Estimates of the probit model

	Japan			US			UK		
	(1) Truthful	(2) Trust	(3) Reaction	(1) Truthful	(2) Trust	(3) Reaction	(1) Truthful	(2) Trust	(3) Reaction
Depression index	-0.189**	-0.245***	-0.159*	-0.162***	-0.176***	-0.130***	-0.131***	-0.134***	-0.120***
	(0.0780)	(0.0785)	(0.0843)	(0.0177)	(0.0176)	(0.0211)	(0.0133)	(0.0140)	(0.0163)
SOB index	-0.0201	0.0492	0.131*	0.281***	0.311***	0.349***	0.269***	0.328***	0.285***
	(0.0699)	(0.0697)	(0.0744)	(0.0199)	(0.0197)	(0.0230)	(0.0154)	(0.0161)	(0.0181)
Number of infections per population	-22.38	40.01	-7.485	0.626**	0.554**	0.551*	0.275	-0.0642	0.859
	(27.82)	(25.91)	(28.83)	(0.248)	(0.256)	(0.295)	(0.526)	(0.520)	(0.558)
Case predictions	-0.203***	-0.179***	-0.161***	-0.127***	-0.109***	-0.177***	-0.0303***	-0.0534***	-0.115***
	(0.0423)	(0.0413)	(0.0422)	(0.0108)	(0.0108)	(0.0129)	(0.00902)	(0.00926)	(0.0105)
Health dummy	0.153	0.221*	0.152	0.0871*	0.0437	0.131**	0.162***	0.179***	0.132***
	(0.126)	(0.126)	(0.134)	(0.0481)	(0.0480)	(0.0565)	(0.0331)	(0.0346)	(0.0389)
Marital status dummy	-0.0893	-0.00933	0.312**	-0.0609*	-0.139***	-0.0449	-0.0359	-0.0674**	-0.00643
	(0.158)	(0.155)	(0.150)	(0.0355)	(0.0354)	(0.0412)	(0.0286)	(0.0294)	(0.0330)
Age dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Gender dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Responded week dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Income class dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Education dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant term	-0.803*	-0.698	-1.005**	-0.384***	-0.375***	-0.739***	-0.0644	-0.296***	-0.852***
	(0.484)	(0.437)	(0.466)	(0.102)	(0.103)	(0.120)	(0.0945)	(0.0966)	(0.108)
Pseudo R2	0.09	0.10	0.07	0.07	0.07	0.10	0.05	0.06	0.06
Sample size		579			11,476			11,285	

Note: Values in the parentheses represent heteroskedasticity robust standard errors. ***, ** and * denote statistical significance at the 1%, 5% and 10% level, respectively.
Each explanatory variable is as follows. The depression index is computed based on eight survey questions related to depression, and the higher the value the more depressed the respondent is. The SOB (second-order beliefs) index is derived by aggregating the respondents' belief on the ratio of people who agree with the four opinions related to COVID-19 (1. social gatherings should be cancelled, 2. one should not shake people's hands, 3. shops [other than supermarkets, etc.] should be closed, and 4. there should be a general curfew) in their own country. The depression index and the SOB index are standardized. The number of infections per population is the number of confirmed cases on the day of participating in the survey in their own country, and case predictions are variables derived by dividing the respondents' predictions on the number of people infected one month from now in their own country into five groups (integral number of 0 to 4). The health dummy is the respondents who answered they are healthy or very healthy. The age dummy is derived by subdividing the individuals into five-year bin groups and based on the sample size, Japan has 10 age bins, the US and UK have 13 age bins. The responded week dummy is derived by setting the three-period groups (March 20 to 26, March 27 to April 2, and April 3 to 7). The income class dummy is the respondents' income level divided into certain classes in each country. Based on the sample size, Japan has 4 income groups and the US and UK have 10 income groups. The education dummy is respondents with more than 16 years of education.
Source: Made by MHRI based upon the data of Fetzer et al. (2020).

Table 2: Estimates of ATT

	Japan			US			UK		
	(1) Truthful	(2) Trust	(3) Reaction	(1) Truthful	(2) Trust	(3) Reaction	(1) Truthful	(2) Trust	(3) Reaction
ATT	-0.391***	-0.289*	-0.278**	-0.182***	-0.110***	-0.305***	-0.0909***	-0.0886***	-0.300***
	(0.109)	(0.159)	(0.112)	(0.0375)	(0.0345)	(0.0429)	(0.0235)	(0.0241)	(0.0298)
n.treat	181	198	134	1,804	1,820	1,108	5,583	4,243	2,281
n.contr	124	119	107	1,473	1,498	956	2,994	2,689	1,800

Note: Values in the parentheses represent standard errors. ***, ** and * denote statistical significance at the 1%, 5% and 10% level, respectively. n.treat is the number of treatment samples. n.contr is the number of unique samples that matched with the treatment samples.
Source: Made by MHRI based upon the data of Fetzer et al. (2020).

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