1. Points of the FY2020 policy cost analysis

- The policy cost analysis based on FY2020 FILP Plan conducted 28 FILP agencies (compared with 27 FILP agencies for the previous analysis).
- Total policy cost: -1,438.8 billion yen (down 460.7 billion yen from the previous analysis)
  - ⇒ Effect to Opportunity cost due to a fall in the assumed interest rate for the analysis: -1.5 trillion yen
  - ⇒ Effect of revisions to assumptions for estimation of future policy cost: +1.2 trillion yen
- The sensitivity analysis estimated a case before the negative interest policy to find the effect of the low interest rate environment.
  - ⇒ Based on the assumed interest rate for the market environment on January 28, 2016, just before the Bank of Japan's introduction of the negative interest rate policy, the policy cost increases by 3.8 trillion yen.

Although the policy cost remains negative, it is important to identify policy cost trends under multiple assumptions while considering that risks regarding future interest rate changes are still great.

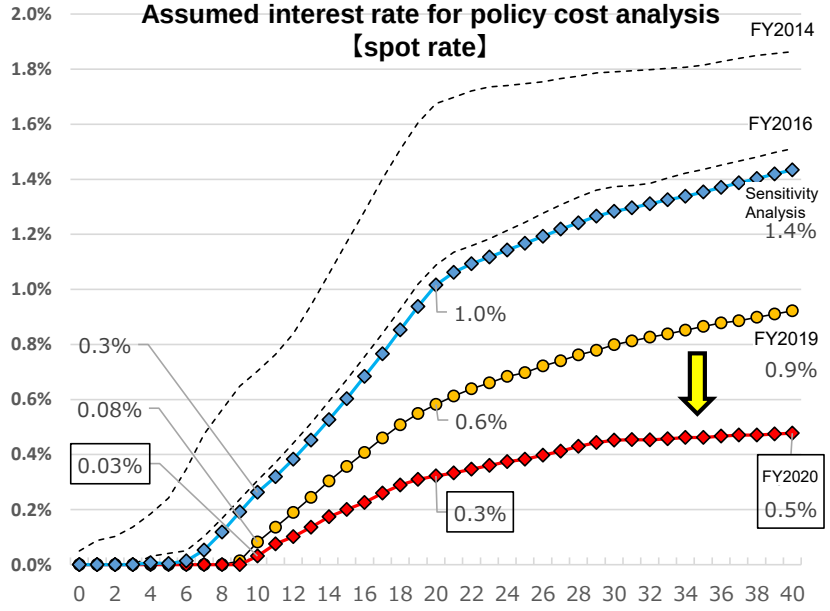
(Note) The policy cost does not indicate any fiscal burden regarding FILP projects.

Policy cost analysis results (by component)

(Unit: billion yen)

	Number of agencies	Policy cost	①Government expenditure (subsidies, etc.)	②Government revenue (payments to the government, etc.)	③Opportunity cost of government capital investments, etc.	Opportunity cost of investments, etc. provided before the beginning of the analysis period	Opportunity cost of surplus, etc. expected to be generated during the analysis period
FY2020 (A)	28	- 1,438.8	1,498.8	- 4,426.2	1,488.6	3,738.0	- 2,249.5
FY2019 (B)	27	- 978.1	1,612.9	- 5,625.6	3,034.5	6,696.8	- 3,662.2
Simple fluctuation (A-B)	+1	- 460.7	- 114.2	+ 1,199.4	- 1,546.0	- 2,958.8	+ 1,412.8

* As projects subject to the policy cost analysis differ by year, it is not adequate to use simple fluctuation of policy cost for assessing FILP projects. Considering this point, we excluded the effects of differences in analysis targets and assumptions and found a real policy cost fluctuation as an increase of 1,658.3 billion yen.【⇒ Past year comparative analysis】



Estimates are based on the market yield on Japanese government bonds on December 20, 2019, when the budget proposal for FY2020 was decided. Negative rates are regarded as 0% for calculating the discount factor and future interest rates as common assumptions for all FILP agencies.

2. Breakdown of policy cost (by agency and time of provision of funds)

【Breakdown by FILP agency】

(Unit: billion yen)

	Institutions	Policy Cost (1)+(2)	(1) Policy cost estimated for the initial year of the analysis period	(2) Policy cost expected to be incurred during the analysis period
Financing Institutions	Japan Finance Corporation	336.1	423.3	-87.3
	Account for Micro Business and Individual Operations	30.6	153.5	-122.8
	Account for SME Loan Programs and Securitization Support Programs [Guarantee-type Operations]	9.1	107.2	-98.2
	Account for Agriculture, Forestry, Fisheries and Food Business Operations	81.4	105.8	-24.4
	Account for Operations to Facilitate Crisis Responses	214.2	56.8	157.5
	Account for Operations to Facilitate Specific Businesses Promotion, etc.	0.7	0.0	0.7
	Japan Bank for International Cooperation	38.0	146.1	-108.2
	Japan International Cooperation Agency (Incorporated Administrative Agency)	-188.4	1,711.2	-1,899.6
	Japan Student Services Organization (Incorporated Administrative Agency)	113.6	0.0	113.6
	Welfare and Medical Service Agency (Incorporated Administrative Agency)	-36.7	3.3	-39.9
	Japan Housing Finance Agency (Incorporated Administrative Agency)	37.1	4.5	32.7
	Development Bank of Japan Inc.	-971.2	255.6	-1,226.8
	6 other agencies	-2.0	29.4	-31.4
Project Institutions	National Hospital Organization (Incorporated Administrative Agency)	236.6	29.8	206.8
	National Cancer Center (National Research and Development Agency)	25.1	7.4	17.7
	Japan Railway Construction, Transport and Technology Agency (Incorporated Administrative Agency) (Construction Account)	844.5	-	844.5
	Urban Renaissance Agency (Incorporated Administrative Agency)	-2,825.2	235.4	-3,060.6
	Japan Expressway Holding and Debt Repayment Agency (Incorporated Administrative Agency)	622.7	589.5	33.2
	Japan Water Agency (Incorporated Administrative Agency)	67.7	0.7	67.0
	Forest Research and Management Organization (National Research and Development Agency)	693.7	285.0	408.7
	Narita International Airport Corporation	-417.8	12.9	-430.6
	Central Japan International Airport Co., Ltd.	-34.1	1.4	-35.5
	4 other agencies	21.4	2.5	18.9
Total		-1,438.8	3,738.0	-5,176.9

【Breakdown by time of provision of funds】

(Unit: billion yen)

Category	FY2020 (A)	FY2019 (B)	Fluctuation (A)-(B)
Policy cost (1)+(2)	- 1,438.8	- 978.1	- 460.7
(1) Policy cost estimated for the initial year of the analysis period (Opportunity cost of capital investments, etc. provided before the beginning of the analysis period)	3,738.0	6,696.8	- 2,958.8
(2) Policy cost expected to be newly accrued during the analysis period	- 5,176.9	- 7,674.9	+ 2,498.0
(a) Government expenditure (subsidies, etc.)	1,498.8	1,612.9	- 114.2
(b) Government revenue (payments to the government, etc.)	- 4,426.2	- 5,625.6	+ 1,199.4
(c) Opportunity cost of surplus, etc.	- 2,313.5	- 3,777.4	+ 1,463.9
(d) Opportunity cost of capital investments, etc.	64.1	115.2	- 51.1

【Notes】

- It must be noted that the policy cost estimate is based on analysis periods, project outlooks and individual assumptions that differ by FILP agency and could change considerably depending on the assumptions.
- The policy cost amount does not indicate any fiscal burden that would accrue from the implementation of FILP projects and be accompanied by future fund transfers.
- The policy cost should be assessed not simply according to its size but integrally along with social and economic benefits of relevant projects.

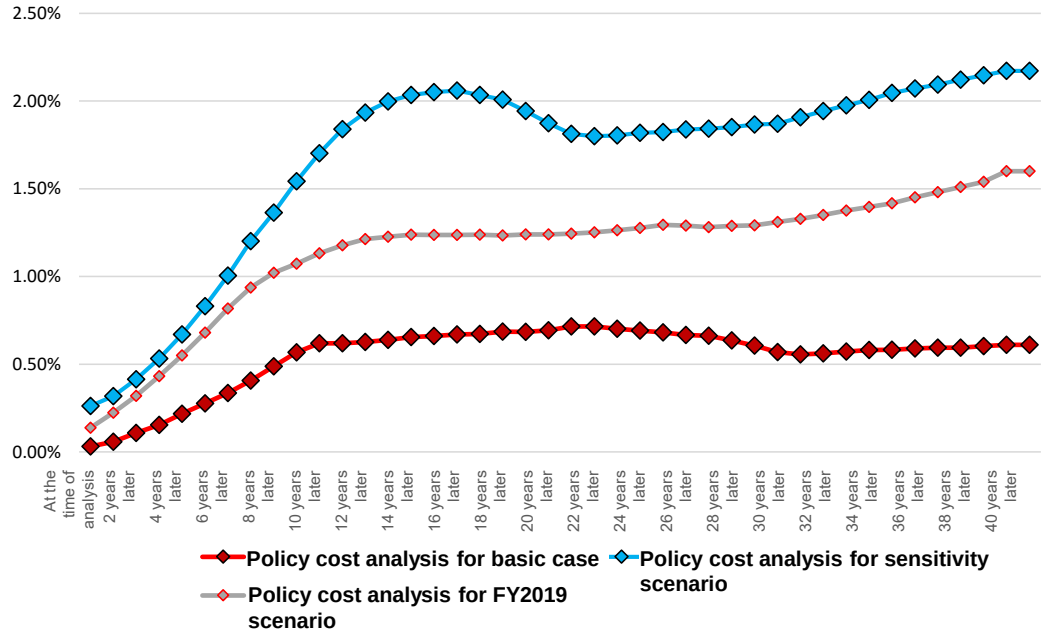
3. Sensitivity analysis

(Unit: billion yen)

	Institutions	Fluctuation (Case for the assumed interest rate for FY2019)	Fluctuation (Case before the negative interest rate policy)
Financing Institutions	Japan Finance Corporation	+33.3	+84.9
	Account for Micro Business and Individual Operations	-9.1	+10.3
	Account for SME Loan Programs and Securitization Support Programs [Guarantee-type Operations]	-11.2	+11.7
	Account for Agriculture, Forestry, Fisheries and Food Business Operations	+31.9	+70.6
	Account for Operations to Facilitate Crisis Responses	+21.7	-7.6
	Account for Operations to Facilitate Specific Businesses Promotion, etc.	+0.0	-0.0
	Japan Bank for International Cooperation	+31.2	+72.3
	Japan International Cooperation Agency (Incorporated Administrative Agency)	+190.3	+726.9
	Japan Student Services Organization (Incorporated Administrative Agency)	-5.8	-13.6
	Welfare and Medical Service Agency (Incorporated Administrative Agency)	+5.0	+11.9
	Japan Housing Finance Agency (Incorporated Administrative Agency)	-5.2	-0.8
	Development Bank of Japan Inc.	+565.2	+109.6
	6 other agencies	-4.6	+4.4
Project Institutions	National Hospital Organization (Incorporated Administrative Agency)	+27.7	+60.3
	National Cancer Center (National Research and Development Agency)	+5.5	+0.4
	Japan Railway Construction, Transport and Technology Agency (Incorporated Administrative Agency) (Construction Account)	-0.5	-4.3
	Urban Renaissance Agency (Incorporated Administrative Agency)	+793.9	+1,468.3
	Japan Expressway Holding and Debt Repayment Agency (Incorporated Administrative Agency)	+433.2	+1,064.1
	Japan Water Agency (Incorporated Administrative Agency)	-1.0	-0.5
	Forest Research and Management Organization (National Research and Development Agency)	+27.6	+42.5
	Narita International Airport Corporation	+65.3	+153.2
	Central Japan International Airport Co., Ltd.	+2.7	+6.1
	4 other agencies	+1.7	+3.9
Total		+2,165.6	+3,789.7

- The scenario analysis measures policy cost fluctuations on changes in specific assumptions for the time for estimating future cash flow.
- Based on discussions at the FILP Subcommittee of the Fiscal System Council, the FY2020 policy cost analysis pays more attention to future interest rate rise risk.
- A new future interest rate [implied forward rate] scenario is developed based on the market environment on January 28, 2016, just before the introduction of the negative interest rate policy.
- The policy cost in the implied forward rate scenario is 3,789.7 billion yen more than in the basic case based on the market yield on Japanese government bonds (the current interest rate environment).

Comparison of future interest rate scenarios (theoretical yields on 10-year Japanese government bonds)



4. Past year comparison analysis/Analysis by causative factor

[Past year comparison analysis]

(Unit: billion yen)

	Institutions	Real fluctuation
Financing Institutions	Japan Finance Corporation	+0.8
	Account for Micro Business and Individual Operations	+16.3
	Account for SME Loan Programs and Securitization Support Programs [Guarantee-type Operations]	+1.1
	Account for Agriculture, Forestry, Fisheries and Food Business Operations	+32.8
	Account for Operations to Facilitate Crisis Responses	-49.4
	Account for Operations to Facilitate Specific Businesses Promotion, etc.	-0.0
	Japan Bank for International Cooperation	-13.9
	Japan International Cooperation Agency (Incorporated Administrative Agency)	-463.5
	Japan Student Services Organization (Incorporated Administrative Agency)	+4.9
	Welfare and Medical Service Agency (Incorporated Administrative Agency)	+8.6
	Japan Housing Finance Agency (Incorporated Administrative Agency)	+1.6
	Development Bank of Japan Inc.	+97.1
	6 other agencies	-1.5
Project Institutions	National Hospital Organization (Incorporated Administrative Agency)	+177.2
	National Cancer Center (National Research and Development Agency)	+28.3
	Japan Railway Construction, Transport and Technology Agency (Incorporated Administrative Agency) (Construction Account)	+4.7
	Urban Renaissance Agency (Incorporated Administrative Agency)	+1,783.2
	Japan Expressway Holding and Debt Repayment Agency (Incorporated Administrative Agency)	+33.5
	Japan Water Agency (Incorporated Administrative Agency)	+0.5
	Forest Research and Management Organization (National Research and Development Agency)	-13.1
	Central Japan International Airport Co., Ltd.	+11.3
	4 other agencies	-1.2
Total		+1,658.3

[Analysis by causative factor]

(Unit: billion yen)

	Institutions	Policy Cost (1)+(2)+(3)	(1) Effect of prepayments	(2) Effect of loan losses	(3) Effect of the others (profit margin, etc.)
Financing Institutions	Japan Finance Corporation	336.1	79.5	437.4	－ 180.9
	Account for Micro Business and Individual Operations	30.6	34.9	265.6	－ 269.9
	Account for SME Loan Programs and Securitization Support Programs [Guarantee-type Operations]	9.1	32.3	153.8	－ 177.0
	Account for Agriculture, Forestry, Fisheries and Food Business Operations	81.4	12.3	18.0	51.2
	Account for Operations to Facilitate Crisis Responses	214.2	—	—	214.2
	Account for Operations to Facilitate Specific Businesses Promotion, etc.	0.7	—	—	0.7
	Japan Bank for International Cooperation	38.0	34.4	559.5	－ 555.9
	Japan International Cooperation Agency (Incorporated Administrative Agency)	－ 188.4	—	－ 175.6	－ 12.8
	Japan Student Services Organization (Incorporated Administrative Agency)	113.6	－ 5.3	50.9	68.0
	Welfare And Medical Service Agency (Incorporated Administrative Agency)	－ 36.7	1.1	4.2	－ 42.0
	Japan Housing Finance Agency (Incorporated Administrative Agency)	37.1	－ 3.7	31.4	9.4
	Development Bank of Japan Inc.	－ 971.2	6.0	30.6	－ 1,007.8
	6 other agencies	－ 2.0	14.7	20.2	－ 36.9

<Reference> Real fluctuations for each fiscal year in the past year comparison analysis (FY2011-2020)

(Unit: trillion yen)

	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Policy cost in previous fiscal year	3.4	2.4	2.6	3.1	1.6	-0.6	0.2	-1.4	-0.8	-1.0
(1) After adjusting initial years of analysis periods	3.1	2.3	2.6	3.1	1.5	-0.5	0.3	-1.5	-0.8	-0.6
Policy cost in current fiscal year	2.4	2.6	3.1	1.6	-0.6	0.2	-1.4	-0.8	-1.0	-1.4
(2) After adjusting assumed interest rates	3.2	2.9	2.9	3.3	2.7	-0.4	0.5	-1.5	-0.5	1.1
Real fluctuation (2)-(1)	+0.1	+0.6	+0.3	+0.2	+1.1	+0.0	+0.3	+0.0	+0.3	+1.7

(Note) The above data represent real fluctuations in each fiscal year that are not suitable for year-by-year comparison because of differences in agencies and projects subject to analysis.

Overview of policy cost analysis

【Objective and significance】

Policy cost analysis is an initiative to estimate [future burdens on taxpayers] accompanying FILP projects under [specific assumptions] and publish the estimates to promote [the disclosure of FILP information].

【Framework of analysis】 [The policy cost] is computed from the following data calculated from future cash flow, etc. estimated by each FILP agency:

① Total amount of subsidies, etc. expected to be paid by the government in the future

② Total amount of corporation tax and other payments to the government expected in the future

③ Amount of opportunity cost of government capital investment, etc.

Policy cost =

①Subsidies, etc. − ②Payments to the government, etc. + ③Opportunity cost

* All estimates in the formula are given in present value.

【Analysis method】 In addition to basic case analysis, various analyses are implemented.

(1) Past year comparison analysis: Policy cost estimates made for the previous and current fiscal years under equal assumption are compared to find a real change. This analysis is also called real fluctuation analysis.

(2) Sensitivity analysis: This analysis estimates policy cost fluctuations on changes in some assumptions (e.g., changes to those before the negative interest rate policy) to find the effects of the changes.

(3) Analysis by causative factor: This analysis finds causative factors for a financing institution's policy cost.

【Utilization of analysis results】

(1) Examples of utilization for FILP formulation

① Checking [the redeemability and adequateness of FILP financing terms and conditions, etc.]

② Comparing past analysis results and latest settlement results, to confirm past project changes

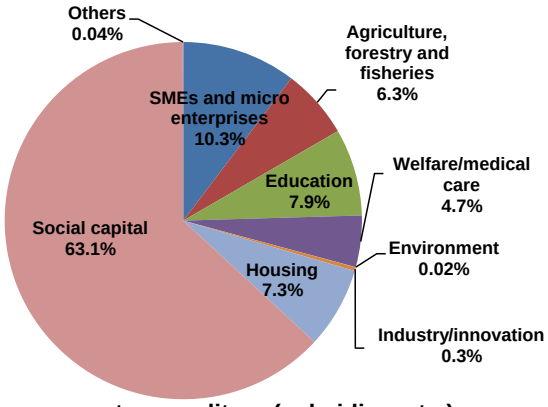
(2) Examples of utilization by FILP agencies

① Considering fiscal improvement and risk management

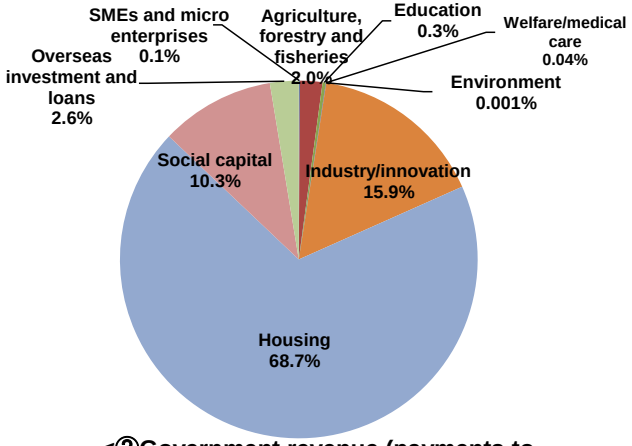
② Various disclosure initiatives

(Reference 1-1) Breakdown of FY2020 policy cost by investment field (by component)

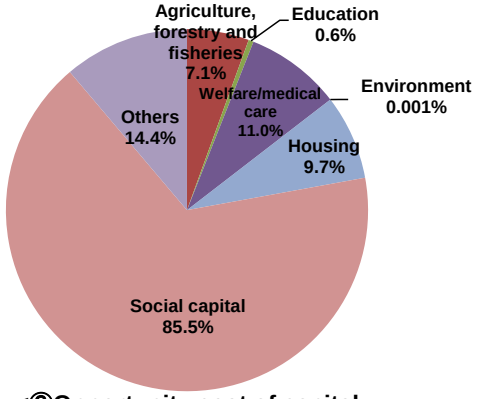
Broken down the FY2020 policy cost in line with the FY2020 FILP Classification Table by Purpose.
【Note】For agencies falling under multiple classification categories, their policy cost for FY2020 is prorated in accordance with the ratios appropriated at the time of preparing the abovementioned classification table.



<①Government expenditure (subsidies, etc.): 1,498.8 billion yen>



<②Government revenue (payments to the government, etc.): - 4,426.2 billion yen>



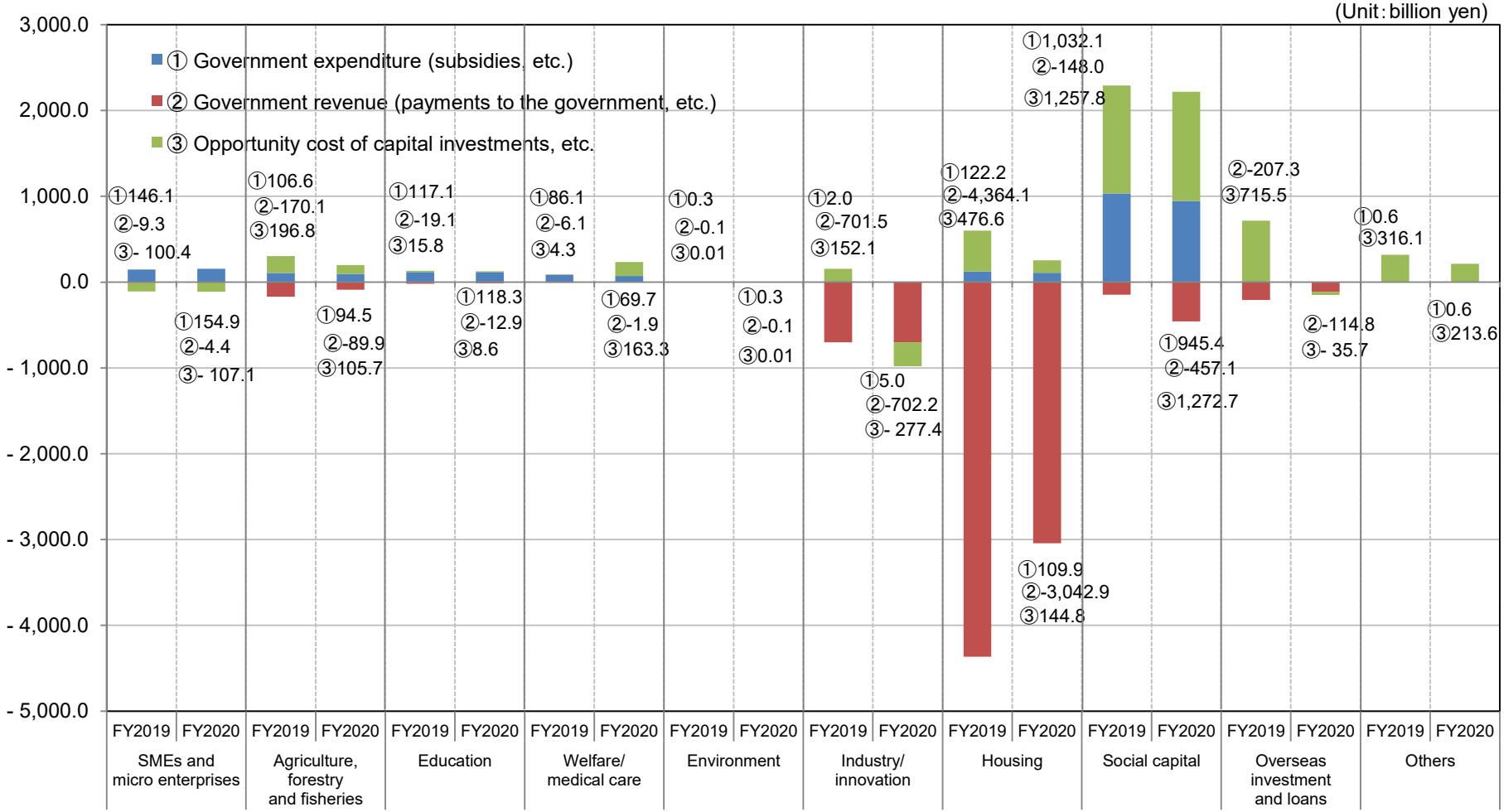
<③Opportunity cost of capital investments, etc.: 1,488.6 billion yen>

○The main classification of 28 agencies that analyze FY2020 policy cost

Classification	Institutions
SMEs and micro enterprises	Japan Finance Corporation (Account for Micro Business and Individual Operations, Account for SME Loan Programs and Securitization Support Programs), The Okinawa Development Finance Corporation
Agriculture, forestry and fisheries	Special Account for Stable Supply of Food, Japan Finance Corporation (Account for Agriculture, Forestry, Fisheries and Food Business Operations), The Okinawa Development Finance Corporation, Japan Water Agency
Education	Japan Finance Corporation (Account for Micro Business and Individual Operations), The Okinawa Development Finance Corporation, The Promotion and Mutual Aid Corporation for Private Schools of Japan, Japan Student Services Organization
Welfare/medical care	The Okinawa Development Finance Corporation, The Promotion and Mutual Aid Corporation for Private Schools of Japan, Welfare and Medical Service Agency, National Hospital Organization, National Cancer Center, National Center for Child Health and Development, National Center for Geriatrics and Gerontology, National Institution for Academic Degrees and Quality Enhancement of Higher Education
Environment	Japan Oil, Gas and Metals National Corporation (General Account for Metal Mining)
Industry/innovation	Special Account for Energy Measures, Japan Finance Corporation (Account for Operations to Facilitate Specific Business Promotion, etc.), The Okinawa Development Finance Corporation, Japan Railway Construction, Transport and Technology Agency (Maritime Affairs Account), Japan Oil, Gas and Metals National Corporation (Account for Oil and Natural Gas), Development Bank of Japan Inc.
Housing	Japan Housing Finance Agency, Urban Renaissance Agency
Social capital	Japan Railway Construction, Transport and Technology Agency (Construction Account, Local Public Transportation Account), Japan Expressway Holding and Debt Repayment Agency (including NEXCO East, NEXCO Central and NEXCO West), Japan Water Agency, Forest Research and Management Organization, Naritai International Airport Corporation., Organization for Promoting Urban Development, Central Japan International Airport Co., Ltd.
Overseas investment and loans	Japan Bank for International Cooperation (Ordinary Operations, Special Operations), Japan International Cooperation Agency
Others	Japan Finance Corporation (Account for Operations to Facilitate Crisis Responses)

(Reference 1-2) Breakdown of policy cost by investment field (FY2019-2020)

(Unit：billion yen)



	SMEs and micro enterprises	Agriculture, forestry and fisheries	Education	Welfare/ medical care	Environment	Industry/ innovation	Housing	Social capital	Overseas investment and loans	Others
FY2019 cost	36.3	133.2	113.8	84.3	0.2	-547.4	-3,765.3	2,141.9	508.2	316.7
FY2020 cost	43.4	110.3	114.1	231.1	0.2	-974.6	-2,788.1	1,761.0	-150.5	214.2

(Reference 2) Estimation of social and economic benefits

Given that the policy cost represents public financial burdens of FILP projects that are estimated under certain assumptions, it is important to integrally assess the policy cost and these projects' financial benefits for citizens and society. However, it is very difficult to assess benefits of characteristically different projects uniformly and quantitatively. Furthermore, some FILP projects bring about various benefits that cannot be converted into monetary values, including lives saved through the promotion of highly advanced medical treatments and the expansion of educational opportunities through scholarships.

Therefore, the policy cost analysis tries to explain how projects subject to analysis contribute to national life and society as specifically as possible, using quantitative social and economic benefits that each agency estimates on its own.

As the Cost-Benefit Analysis Manual and other guidelines prepared by the relevant government agencies can be utilized to quantitatively estimate social and economic benefits of public works projects under generally unified standards, policy cost analysis assumptions (including the discount factor and analysis period) are applied for their re-estimation and their comparison with the policy cost.

(Unit: billion yen, years)

Institutions (Project name)	Social and economic benefits		(Reference) Estimation based on the same discount factor and analysis period as those for the policy cost analysis	
		Analysis period		Analysis period
Japan Railway Construction, Transport and Technology Agency (Incorporated Administrative Agency)				
Construction Account (Shinkansen project)	3,572.9	After commercial operation launching: 50	3,669.8	26
Urban Renaissance Agency (Incorporated Administrative Agency)	746.1		972.8	
Projects to renew urban functions (land readjustment)	224.7	After replotting disposition 50	205.4	After replotting disposition 50
Projects to renew urban functions (urban renewal)	243.1	After redeveloped buildings' entry into service 50	228.4	After redeveloped buildings' entry into service 50
Residential environment development project	278.3	After buildings' entry into service 47	538.9	After buildings' entry into service 47
Japan Expressway Holding and Debt Repayment Agency (Incorporated Administrative Agency)				
The Expressway project	9,544.4	35	16,717.2	35
Japan Water Agency (Incorporated Administrative Agency)				
Construction of canals	17,867.8	50	32,698.8	36
Forest Research and Management Organization (National Research and Development Agency)				
Forestation for water conservation	1,810.6	61	2,895.3	61
Narita International Airport Corporation				
Additional runway project	5,345.5	60	23,133.5	60
Central Japan International Airport Co., Ltd.				
Airport improvement project	2,028.1	35	1,568.8	15

(Note 1) The Cost-Benefit Analysis Manual and other guidelines fix the social discount factor to convert social benefits into present value. Based on the past average yield on long-term government bonds, or the average fundraising cost for social infrastructure development, the factor is set at 4% for the immediate future.

Here are estimates using the social discount factor (4%) and the same discount factor as used for the policy cost analysis.

Estimates are made for the analysis period (service period) chosen in consideration of the project implementation period specified in the Cost-Benefit Analysis Manual and other guidelines and the project's service life and for the policy cost analysis period (redemption period).

(Note 2) It should be noted that these social and economic benefits were estimated separately by each agency based on different business forecasts and other preconditions for different analysis periods and that calculation results vary considerably depending on the used discount factor.

(Note 3) Financing institutions do not calculate these benefits in the absence of uniform assumptions established for them.

(Note 4) Social and economic benefits for the Japan Expressway Holding and Debt Repayment Agency include those for NEXCO East, NEXCO Central, and NEXCO West.

<Reference> Manuals and items for estimation

Institutions	Project name	Manual	Item for estimation
Japan Railway Construction, Transport and Technology Agency (Incorporated Administrative Agency)	Shinkansen project	Railway project assessment manual 2012	User benefits from shortening of travel time, reduction of transportation costs and improvement of transfer convenience through Shinkansen development
Urban Renaissance Agency (Incorporated Administrative Agency)	Projects to renew urban functions (land renewal)	Cost-benefit analysis manual for land readjustment projects	Benefits from land price changes through improvement of profit for owners of redeveloped office buildings, and convenience and comfort for residents under land readjustment, urban redevelopment or resident land development projects in major urban regions
	Projects to renew urban functions (urban renewal)	Cost-benefit analysis manual for urban redevelopment projects	
	Residential environment development projects	Cost-benefit analysis manual for residential development projects	
Japan Expressway Holding and Debt Repayment Agency (Incorporated Administrative Agency)	Expressway projects	Cost-benefit analysis manual	User benefits from shortening of travel time, savings of fuel and other transportation costs and reduction of traffic accidents through use of expressways and other toll roads
Japan Water Agency (Incorporated Administrative Agency)	Construction of canals (for agricultural water)	Basic data required for cost-benefit analysis for land improvement projects, etc.	Farming cost savings, crop production effects, etc. through construction of canals (for agricultural water)
	Construction of canals (for city water)	Cost-benefit analysis for water supply projects	Reduction of water supply decline/disruption damage from drought and other disasters through construction of canals (for city water)
	Construction of canals (for industrial water)	Guidelines for policy assessment involving industrial water supply projects	Reduction of industrial water procurement costs through construction of canals (for industrial water) and avoidance of facility destruction risks through enhancement of earthquake resistance
Forest Research and Management Organization (National Research and Development Agency)	Forestation for water conservation	Project assessment manual for forestry public works projects	Reservoir recharging benefits, mountain conservation benefits, environmental conservation benefits and timber production benefits through forestation at water source forests
Narita International Airport Corporation	Additional runway project	Cost-benefit analysis manual for airport development projects, Ver. 4	User benefits, supplier benefits, residual value
Central Japan International Airport Co., Ltd.	Airport improvement project	Cost-benefit analysis manual for airport development projects, Ver. 4	User benefits, supplier benefits, regional business and resident benefits