



**The Coalition
of Finance Ministers
for Climate Action**

Annexes to the report:

A Global Survey of Ministries of Finance:

The pressing policy questions Ministries of Finance face in driving green and resilient transitions and their use of analytical tools to address them

ANNEX 1: Survey questions

ANNEX 2: Interview structure and information consent

Annex 1. Survey questions

Dear Respondent,

We invite you and your Ministry to participate in an important survey being conducted by the Coalition of Finance Ministers for Climate Action (CFMCA) led by the Co-Chairs of Helsinki Principle 4, which seeks to gather insights into the key climate policy priorities being considered by Ministries of Finance globally, and how climate considerations are currently integrated within economic analysis and modeling approaches and capabilities. The results of this survey will appear on an anonymized basis in a flagship report of the CFMCA for COP29. Current observer members or non-members of the Coalition of Finance Ministers are equally encouraged to participate.

Please review the key information and conditions of use before starting the survey:

- **Survey Objective:** The purpose of this survey is to gather information regarding the current status of climate-related economic policy and analytics within Ministries of Finance around the world. More specifically, the survey aims to collect data on potential concerns, priorities, and challenges within Ministries of Finance, with respect to both climate-related economic policies and the analytics used to support decision-making. It is important to clarify that the objective of the survey is NOT to evaluate or benchmark individual countries' progress; rather, it is **intended to serve as a stocktake, which can be used to identify gaps and areas where Ministries of Finance might require additional support**. The insights gathered will be crucial in developing tailored recommendations and mechanisms.
- **Time Commitment:** Your time is highly valued and, consequently, we have designed this survey to require only **approximately 30 minutes to complete**. Further time is likely to be needed for fuller responses in some of the optional sections, which we would especially welcome. Your participation during this brief period will significantly contribute to our global understanding of climate-related economic policy and analysis.
- **Survey Responses:** We recognize that you may not have immediate access to all the detailed data or official positions required by this survey. **Some sections may also require you to seek inputs from other parts of the Ministry**. Therefore, the online survey has the ability for you to save and return to later through the web platform (the survey can be returned to via your web browser automatically; no additional action required). **Some Ministries may prefer or need to use the Word version to seek inputs from other parts of the Ministry or for sign-off purposes**. You can then either enter the details on the online version or submit to us using the Word version. In addition, we recognize that **some of the questions may not be relevant, in which case we provide options for skipping those sections**. Please view this as a preliminary exercise to define the background understanding of climate-related economic policies and analysis.
- **Sign-offs:** We highly encourage that the survey be **reviewed and signed off by at least one senior individual working on domestic economic policy and one senior individual working on analytics** (both should have some knowledge of the Ministry's overall economic policy and analytical/modeling capabilities and its nexus with climate issues). The web function allows you to download in PDF the survey to share with officials for approval if needed.
- **Data and Privacy:** We assure you that the confidentiality of your responses is of utmost importance. Therefore, access to the raw data collected through this survey will be strictly limited to the HP4 Co-Chairs, Coalition Secretariat, and the project team working under the auspices of Grantham Research Institute, London School of Economics and Political Science (LSE). While **individual country-level information will remain strictly confidential and not publicly disclosed**, aggregated data will be analyzed and included in publicly available reports and journal articles to foster a global dialogue on enhancing climate-related economic policy and analysis. All data collection, storage, and ethics will be conducted under the official guidelines of the LSE.

We appreciate your willingness to contribute to this crucial survey effort. Your input is essential for shaping effective and inclusive climate policies and financial strategies by Ministries of Finance.

GENERAL INFORMATION ON RESPONDENTS
Contact Person 1
Full Name <i>Instruction:</i> State the full name of the individual filling out this form in the text box. [Short answer text box]
Title/Position <i>Instruction:</i> State the official title and position of the individual filling out this form in the text box (e.g., Director of Research, Fiscal Affairs Unit). [Short answer text box]
Department/Ministry <i>Instruction:</i> State the full official name of the government ministry/department the individual filling this form is employed by in the text box below (e.g., Department of Finance and Economy). If the official name of the government ministry/department is in a language other than English, please translate it into English. [Short answer text box]
Contact Information <i>Instruction:</i> State the official email of the individual filling out this form. [Short answer text box] [Short answer text box] - repeat email address
Contact Person 2
Full Name <i>Instruction:</i> State the full name of the individual filling out this form in the textbox. [Short answer text box]
Title/Position <i>Instruction:</i> State the official title and position of the individual filling out this form in the text box (e.g., Director of Research, Fiscal Affairs Unit). [Short answer text box]
Department/Ministry <i>Instruction:</i> State the full official name of the government ministry/department the individual filling this form is employed by in the text box below (e.g., Department of Finance and Economy). If the official name of the government ministry/department is in a language other than English, please translate it into English. [Short answer text box]
Contact Information <i>Instruction:</i> State the official email of the individual filling out this form. [Short answer text box] [Short answer text box] - repeat email address
Country Information
Country [Dropdown menu] - single choice
Other Information
Individuals Consulted How many individuals from the Ministry of Finance—including the person/s filling out this form—were consulted in filling out this survey? <i>Instruction:</i> Please state the total number in the box below. [Number box]
YOUR MINISTRY – BASIC INFORMATION
All Employees How many full-time staff members are employed by the Ministry of Finance? <i>Instruction:</i> Please write down a number in the textbox below. If you are unsure, please provide an approximate. [Enter number]

General Analytical Capability

How many Ministry of Finance staff members work specifically on economic analysis and modeling in general as a significant portion of their job?

Definition: In this context, "economic analysis and modeling" refers to the use of a wide range of macroeconomic and microeconomic methods (including quantitative modeling approaches) to evaluate policy options to optimize economic impacts. This process involves detailed evaluations of economic data, forecasting future economic conditions, analysis of fiscal policies, and analysis of the budget to support budget planning and economic stability. Additionally, it covers quantitative and other frameworks for policy evaluation and decision-making, such as cost-benefit analysis, cost-effectiveness analysis, among others (e.g., risk-opportunity analysis). Please note that this question refers to staff members that either have a qualification and/or work experience related to quantitative economic analysis.

Instruction: Please select one option and then enter the number of people working on this agenda as a significant portion of their job (defined as greater than 50% of their time). If you are unsure of the exact numbers, please provide an approximation.

- [Multiple options] – 1 choice plus number
 - [Actual number or approximation]
 - Not sure
 - Other (e.g., specify number of staff with small % of their role dedicated to this area) [explanation]

Climate-related Analytical Capability

Does the Ministry of Finance have climate-related economic analysis and modeling capacity and, if so, how many staff members have this as significant portion of their job in each core functional area of the Ministry?

Definition: In this context, the question is referring to individuals within the Ministry of Finance whose main role is economic modeling and/or other forms of economic analysis of climate policies (see definition above).

Instruction: Please select one option and then enter the number of people working on this agenda as a significant portion of their job (defined as greater than 50% of their time) in each key functional area. If you are unsure of the exact numbers, please provide an approximation or simply specify the core functional area the majority of staff are located in "other".

- [Multiple options] – Choice plus number or approximation
 - Yes – Climate-related quantitative modeling capability [specify numbers in each key functional area of macro-forecasting, budget, tax policy, financial policy]
 - Yes – Other climate-related economic analysis capability [specify numbers in each key functional area of macro-forecasting, budget, tax policy, financial policy]
 - No
 - Not sure
 - Other e.g., specify number of staff with small % of their role dedicated to this area

Collaboration on Analysis with Other Ministries and Parties Outside Government

Does the Ministry of Finance directly partner with the following external parties as part of its economic analysis and modeling of policy options?

Definition: "Economic analysis of policy options," same as above.

Instruction: Please indicate with a number from 1 to 4 how frequently the Ministry of Finance collaborates with each of the following groups on economic analysis of policy options including for climate-specific policy analysis and/or more broadly. Please note that in this case, 1 means "never" and 4 means "regularly."

- Other government departments/ministries
 - [1-4] single choice
 - 1 = Never
 - 2 = Rarely
 - 3 = Occasionally
 - 4 = Regularly
- Other public bodies or quasi-public bodies
 - [1-4] single choice

- 1 = Never
 - 2 = Rarely
 - 3 = Occasionally
 - 4 = Regularly
- Central bank and related financial bodies (e.g., financial supervisory authorities)
 - [1-4] single choice
 - 1 = Never
 - 2 = Rarely
 - 3 = Occasionally
 - 4 = Regularly
- Private-sector companies (e.g., private-sector consultants)
 - [1-4] single choice
 - 1 = Never
 - 2 = Rarely
 - 3 = Occasionally
 - 4 = Regularly
- Non-profit organizations (e.g., policy think tank)
 - [1-4] single choice
 - 1 = Never
 - 2 = Rarely
 - 3 = Occasionally
 - 4 = Regularly
- Universities and other research institutions
 - [1-4] single choice
 - 1 = Never
 - 2 = Rarely
 - 3 = Occasionally
 - 4 = Regularly
- International organizations (e.g., development banks)
 - [1-4] single choice
 - 1 = Never
 - 2 = Rarely
 - 3 = Occasionally
 - 4 = Regularly
- Other [text]

CLIMATE AS AN ECONOMIC ISSUE

Climate as an Overall Economic Issue

Does your Ministry of Finance see climate action as a core economic issue and central to its mandate, or is this seen primarily as the responsibility of other government departments/ministries?

Instruction: Please choose one of the following options that apply.

[Single choice]

- Yes, climate action is seen a key economic priority and central to mandate of the Ministry
- Yes, climate action is an important economic consideration with support, but the Ministry mainly focused on helping accelerate action by other government departments
- No, climate action is mainly the mandate and responsibility of other government departments
- Other [short text]

Physical Climate Impacts

How significant are Ministry of Finance concerns about the impacts of physical climate change on your economy's key macroeconomic variables?

Instruction: Please rate each of the following answers with a number from 1 to 5. Please note that for this question, 1 means "not concerned at all" and 5 means "extremely concerned".

Definition: Please note that physical climate change refers to both acute climate-related events such as heatwaves, storms, wildfires and flash floods, as well as chronic factors (i.e., gradually

changing factors) such as average temperature increase, increased droughts and desertification, sea-level rise, coastal erosion, and ocean acidification.

[Rating of each option] 1-5

- GDP [1-5] single choice
- Inflation [1-5] single choice
- Real interest rates and credit ratings [1-5] single choice
- Employment [1-5] single choice
- Government revenues [1-5] single choice
- Government spending [1-5] single choice
- Competitiveness and trade balance [1-5] single choice
- Physical, human, and natural capital [1-5] single choice
- Value of publicly owned enterprises [1-5] single choice
- Other [short text]

Are there specific climate change risk drivers or channels that the Ministry of Finance is particularly worried about? Please provide some details.

[Optional text box]

Transition Impacts

How significant are Ministry of Finance concerns about the potential risks posed by the overall global transition to net zero on your economy's macroeconomic variables?

Instruction: Please rate each of the key variables with a number from 1 to 5. Please note that for this question, 1 means "not concerned at all" and 5 means "extremely concerned".

Definition: In the context of this survey, the impacts of the transition refer to potential macroeconomic implications resulting from a global transition to a low-carbon economy, including from the reduction in global fossil-fuel demand driven by climate policies, among another factors, across the world or the potential impact of other countries climate policies on competitiveness of existing exports.

[Rating of each option] 1-5

- GDP [1-5] single choice
- Inflation [1-5] single choice
- Real interest rates and credit ratings [1-5] single choice
- Employment [1-5] single choice
- Government revenues [1-5] single choice
- Government spending [1-5] single choice
- Competitiveness and trade balance [1-5] single choice
- Physical, human, and natural capital [1-5] single choice
- Value of publicly owned enterprises [1-5] single choice
- Other [short text]

How significant are Ministry of Finance concerns about the potential risks posed from your domestic transition to a low-carbon economy on your economy's macroeconomic variables?

Instruction: As above.

Definition: In the context of this survey, the impacts of the transition refer to potential macroeconomic implications resulting from the nationally driven transition to a low-carbon economy. For instance, electrification of transport might impact taxation from fuel taxation without measures to identify alternatives or the transition might impact jobs in certain sectors.

[Rating of each option] 1-5

- GDP [1-5] single choice
- Inflation [1-5] single choice
- Real interest rates [1-5] single choice
- Employment [1-5] single choice
- Government revenues [1-5] single choice
- Government spending [1-5] single choice
- Competitiveness and trade balance [1-5] single choice

- Physical, human, and natural capital [1-5] single choice
- Value of publicly owned enterprises [1-5] single choice
- Other [short text]

Are there specific global and national transition risk drivers or channels that the Ministry of Finance is particularly worried about? Please provide some details.

[Optional text box]

Assessing Economic Impacts

Does the Ministry of Finance undertake economic analysis to assess the impacts of policies aimed at creating green economic opportunities?

Definitions: In this context, the question is referring to the potential economic opportunities that might materialize for the overall macroeconomy or in key sectors from the impact of policies aimed at creating green economic opportunities on key economic indicators such as GDP, trade flows, competitiveness, employment, and productivity.

Please select the option that applies.

[Single choice]

- Yes, the Ministry plays a leading role in designing and considering the impacts of policies aimed at creating green economic opportunities
- Yes, but the Ministry mainly supports other government departments to consider the impacts of policies aimed at creating green economic opportunities
- No, but some consideration is being given to identifying policies aimed at creating green economic opportunities
- No, assessing the impacts of policies aimed at creating green economic opportunities is not a priority for the Ministry
- Other [short text]

What does your Ministry consider to be the most important positive potential economic impacts or opportunities from climate action, and over what time horizons might these accrue? Please provide some details.

Definition: In this context, "climate action" refers to policy efforts undertaken to address climate change by both limiting its impacts and adapting to them. This encompasses policies and initiatives focused on adaptation, mitigation, and economic diversification, all aimed at reducing both physical climate risks and emissions.

Instruction: Please list a small number of the potential positive economic impacts or opportunities identified by decision-makers and over what time horizons you expect the benefits to accrue. Please note that short term refers to 1-2 years, medium term refers to 2-5 years, and long term refers to 5-25 years.

[Optional text box]

CLIMATE-RELATED POLICY PRIORITIES

Policy Criteria

What are the most important impacts to consider when designing climate-related policies within the Ministry of Finance?

Instruction: Please rate each of the key variables with a number from 1 to 5. Please note that for this question, 1 means "not important at all" and 5 means "extremely important".

- Economic growth and efficiency (e.g., impacts on GDP and productivity) [0-5]
- International competitiveness (e.g., impacts on exports in key sectors) [0-5]
- Distributional and employment impacts (e.g., the distributional impacts of policies and risks across households, income groups, and sectors) [0-5]
- Fiscal sustainability/affordability (e.g., overall public capital expenditure/operating expenditure costs, sustainability of current spending, tax and other policies in the long run) [0-5]

- Legal obligations (e.g., UNFCCC submissions or Paris Agreement or domestic legal) [0-5]
- Other [short text]

Climate Policy Priorities and Actions

Is the Ministry of Finance engaging in climate action in the following key policy areas?

Instruction: Please select the option that applies.

OPTIONAL: Please provide a brief explanation of the reason for the selection (e.g., if not being considered, it may be because the policy area is not within the Ministry's jurisdiction; or due to equity considerations; fiscal constraints; public opinion considerations; technical gaps).

- Shaping national climate and development strategies (e.g., formulation of Nationally Determined Contributions, green growth strategies, low-carbon industrial and innovation strategies etc.)
 - [0-4] single choice
 - 1 – Currently not being considered by the Ministry of Finance [Explain why]
 - 2 – Currently under consideration (please choose sub-option A or B)
 - A: The Ministry of Finance is considering supporting other government departments in this area
 - B: The Ministry of Finance is considering leading these efforts across the government in this area
 - 3 – Currently being implemented (please choose sub-option A or B)
 - A: The Ministry of Finance is currently supporting other government departments in this area
 - B: The Ministry of Finance is leading these efforts across the government in this area
 - 4 – Other [Text]
- Shaping dedicated national plans for adaptation and/or resilience (e.g., formulation of National Adaptation Plans)
 - [0-4] single choice
 - 1 – Currently not being considered by the Ministry of Finance [Explain why]
 - 2 – Currently under consideration (please choose sub-option A or B)
 - A: The Ministry of Finance is considering supporting other government departments in this area
 - B: The Ministry of Finance is considering leading these efforts across the government in this area
 - 3 – Currently being implemented (please choose sub-option A or B)
 - A: The Ministry of Finance is currently supporting other government departments in this area
 - B: The Ministry of Finance is leading these efforts across the government in this area
 - 4 – Other [Text]
- Shaping low-carbon, climate-resilient investment strategies (e.g., systematically assessing climate-related investment needs, developing investment programs and building specific project pipelines)
 - [0-4] single choice
 - 1 – Currently not being considered by the Ministry of Finance [Explain why]
 - 2 – Currently under consideration (please choose sub-option A or B)
 - A: The Ministry of Finance is considering supporting other government departments in this area
 - B: The Ministry of Finance is considering leading these efforts across the government in this area
 - 3 – Currently being implemented (please choose sub-option A or B)
 - A: The Ministry of Finance is currently supporting other government departments in this area
 - B: The Ministry of Finance is leading these efforts across the government in this area
 - 4 – Other [Text]

- Taxes or pricing mechanisms to change market incentives (e.g., through carbon pricing or taxation or phasing out fossil-fuel subsidies)
 - [0-4] single choice
 - 1 – Currently not being considered by the Ministry of Finance [Explain why]
 - 2 – Currently under consideration (*please choose sub-option A or B*)
 - A: The Ministry of Finance is considering supporting other government departments in this area
 - B: The Ministry of Finance is considering leading these efforts across the government in this area
 - 3 – Currently being implemented (*please choose sub-option A or B*)
 - A: The Ministry of Finance is currently supporting other government departments in this area
 - B: The Ministry of Finance is leading these efforts across the government in this area
 - 4 – Other [Text]
- Green fiscal subsidies to catalyze new low-carbon sectors and innovation (e.g., through grants for purchasing EVs, subsidies for R&D)
 - [0-4] single choice
 - 1 – Currently not being considered by the Ministry of Finance [Explain why]
 - 2 – Currently under consideration (*please choose sub-option A or B*)
 - A: The Ministry of Finance is considering supporting other government departments in this area
 - B: The Ministry of Finance is considering leading these efforts across the government in this area
 - 3 – Currently being implemented (*please choose sub-option A or B*)
 - A: The Ministry of Finance is currently supporting other government departments in this area
 - B: The Ministry of Finance is leading these efforts across the government in this area
 - 4 – Other [Text]
- Non-pricing mechanisms to change market incentives (e.g., energy market reforms, regulations for end dates on phase out of fossil fuels)
 - [0-4] single choice
 - 1 – Currently not being considered by the Ministry of Finance [Explain why]
 - 2 – Currently under consideration (*please choose sub-option A or B*)
 - A: The Ministry of Finance is considering supporting other government departments in this area
 - B: The Ministry of Finance is considering leading these efforts across the government in this area
 - 3 – Currently being implemented (*please choose sub-option A or B*)
 - A: The Ministry of Finance is currently supporting other government departments in this area
 - B: The Ministry of Finance is leading these efforts across the government in this area
 - 4 – Other [Text]
- Building resilience of public finances for a net zero economy (e.g., by identifying new revenue streams as alternatives to taxing fossil-fuel consumption or rents from the production of fossil fuels)
 - [0-4] single choice
 - 1 – Currently not being considered by the Ministry of Finance [Explain why]
 - 2 – Currently under consideration (*please choose sub-option A or B*)
 - A: The Ministry of Finance is considering supporting other government departments in this area
 - B: The Ministry of Finance is considering leading these efforts across the government in this area
 - 3 – Currently being implemented (*please choose sub-option A or B*)
 - A: The Ministry of Finance is currently supporting other government departments in this area

- B: The Ministry of Finance is leading these efforts across the government in this area
 - 4 – Other [Text]
- Embedding green budgeting in national budget processes (e.g., systematically assessing and aligning fiscal policies with environmental goals, integrating climate considerations into public investment planning and cost-benefit analyses, introducing green public procurement practices)
 - [0-4] single choice
 - 1 – Currently not being considered by the Ministry of Finance [Explain why]
 - 2 – Currently under consideration (*please choose sub-option A or B*)
 - A: The Ministry of Finance is considering supporting other government departments in this area
 - B: The Ministry of Finance is considering leading these efforts across the government in this area
 - 3 – Currently being implemented (*please choose sub-option A or B*)
 - A: The Ministry of Finance is currently supporting other government departments in this area
 - B: The Ministry of Finance is leading these efforts across the government in this area
 - 4 – Other [Text]
- Mobilizing funding to finance the transition (e.g., issuing sovereign or municipal green bonds, building a greener financial sector and capital markets, accessing and building voluntary carbon markets, or international climate finance)
 - [0-4] single choice
 - 1 – Currently not being considered by the Ministry of Finance [Explain why]
 - 2 – Currently under consideration (*please choose sub-option A or B*)
 - A: The Ministry of Finance is considering supporting other government departments in this area
 - B: The Ministry of Finance is considering leading these efforts across the government in this area
 - 3 – Currently being implemented (*please choose sub-option A or B*)
 - A: The Ministry of Finance is currently supporting other government departments in this area
 - B: The Ministry of Finance is leading these efforts across the government in this area
 - 4 – Other [Text]
- Integrating climate considerations into mandates and investment practices of publicly backed financial institutions (e.g., national development and/or investment banks, export credit agencies, sovereign wealth funds, SOEs)
 - [0-4] single choice
 - 1 – Currently not being considered by the Ministry of Finance [Explain why]
 - 2 – Currently under consideration (*please choose sub-option A or B*)
 - A: The Ministry of Finance is considering supporting other government departments in this area
 - B: The Ministry of Finance is considering leading these efforts across the government in this area
 - 3 – Currently being implemented (*please choose sub-option A or B*)
 - A: The Ministry of Finance is currently supporting other government departments in this area
 - B: The Ministry of Finance is leading these efforts across the government in this area
 - 4 – Other [Text]
- Integrating climate considerations into the mandates of the Central Bank and system for financial supervision
 - [0-4] single choice
 - 1 – Currently not being considered by the Ministry of Finance [Explain why]
 - 2 – Currently under consideration (*please choose sub-option A or B*)

- A: The Ministry of Finance is considering supporting other government departments in this area
 - B: The Ministry of Finance is considering leading these efforts across the government in this area
- 3 – Currently being implemented (*please choose sub-option A or B*)
 - A: The Ministry of Finance is currently supporting other government departments in this area
 - B: The Ministry of Finance is leading these efforts across the government in this area
- 4 – Other [Text]
- Providing disaster risk financing and insurance (e.g., disaster relief funds, credit for reconstruction, government-supported property insurance, compensation and relief for agricultural producers, disaster-linked social protection)
 - [0-4] single choice
 - 1 – Currently not being considered by the Ministry of Finance [Explain why]
 - 2 – Currently under consideration (*please choose sub-option A or B*)
 - A: The Ministry of Finance is considering supporting other government departments in this area
 - B: The Ministry of Finance is considering leading these efforts across the government in this area
 - 3 – Currently being implemented (*please choose sub-option A or B*)
 - A: The Ministry of Finance is currently supporting other government departments in this area
 - B: The Ministry of Finance is leading these efforts across the government in this area
 - 4 – Other [Text]

Key Policy and Analytical Questions

What are some of the most pressing climate-related policy and related analytical questions that the Ministry of Finance currently has insufficient information to answer?

Instruction: In the textbox, please identify and elaborate on the most pressing climate-related policy questions the Ministry of Finance currently has insufficient information to answer. Please provide details for up to five policy and analytical questions, making sure to include specific details about the context, implications, and any aspects or parameters that need to be addressed. Furthermore, please ensure to explain what key information is missing for each question.

[Text box]

ECONOMIC ANALYSIS AND MODELING APPROACHES

General Economic Models and Tools

General Economic Analysis and Modeling

Instruction: Note completing this section may require coordination across divisions (and related agencies) such as macroeconomic policy, tax, and budget offices.

What type of economic analysis and modeling approaches does the Ministry of Finance use for general economic policy analysis across the following key functional areas:

- **Macroeconomic forecasting** (method of making predictions about future aspects of the economy, such as growth, inflation, and unemployment rates, based on historical data and using various econometric and statistical techniques to project future trends)
 - *Name of model /tool, type of model (e.g., macro-econometric (New Keynesian), DSGE, vector auto-regression, other etc.) the name of the entity that developed the model, typical time horizon considered*
 - *None*
- **Detailed budget projections** (method for projecting revenues and expenditure over a set period)
 - *Name of model/tool, type of model (e.g., DSGE, budget model, other etc.), the name of the entity that developed the model, typical time horizon considered*
 - *None*

- **Design of tax and fiscal policy measures** (method for assessing taxation system, options, and revenues)
 - Name of model/tool, type of model (e.g., microsimulation, input-output, CGE, agent-based model, other etc.), the name of the entity that developed the model, typical time horizon considered
 - None
- **Quantitative policy and program appraisal methods** (measuring the costs and benefits of specific economic policies or programs on key metrics of interest, such as employment, distributional impacts and macroeconomic indicators, such as GDP)
 - Name of model/tool, type of model (e.g., DSGE, CGE, etc.), the name of the entity that developed the model, typical time horizon considered
 - None
- **Design of financial sector policy measures** (method for assessing stability and functioning of the financial system including the functioning of monetary policy and commercial banking sector)
 - Name of model/tool, type of model (e.g., DSGE, CGE, financial sector model, agent-based model, other etc.), the name of the entity that developed the model, typical time horizon considered

Modeling Software

What type of software does the Ministry of Finance use as part of its general economic analysis of policy options?

Definition: "Economic analysis of policy options," as defined above

[Multiple options] – multiple answers possible

- Spreadsheet software (e.g., Excel, Google Sheets)
- Statistical and econometric software (e.g., STATA, EViews)
- Programming languages and tools (e.g., R, Python, MatLab)
- Data visualization and business intelligence tools (e.g., Tableau, Power BI)
- Database management systems (e.g., Oracle SQL)
- Unsure
- None

Data

What types of data does the Ministry of Finance use for its general economic analysis of policy options?

Definition: "Economic analysis of policy options," as defined above

Instruction: Please indicate with a number from 1 to 4 how frequently the Ministry of Finance draws on each of the following groups of data. Please note that in this case, 1 means "never" and 4 means "regularly."

- Government-owned micro-data (e.g., individual tax returns, PAYE data)
 - [1-4] single choice
 - 1 = Never
 - 2 = Rarely
 - 3 = Occasionally
 - 4 = Regularly
- Survey data (e.g., Household income and budget surveys)
 - [1-4] single choice
 - 1 = Never
 - 2 = Rarely
 - 3 = Occasionally
 - 4 = Regularly
- Aggregate macroeconomic data (e.g., from National Accounts or revenue collection)
 - [1-4] single choice
 - 1 = Never
 - 2 = Rarely
 - 3 = Occasionally
 - 4 = Regularly
- Proprietary market data (e.g., from banks, credit-card companies)
 - [1-4] single choice

- 1 = Never
 - 2 = Rarely
 - 3 = Occasionally
 - 4 = Regularly
- Physical climate risk data (e.g., historical loss assessments from environment agency)
 - [1-4] single choice
 - 1 = Never
 - 2 = Rarely
 - 3 = Occasionally
 - 4 = Regularly
- Carbon emissions and air pollutants data
 - [1-4] single choice
 - 1 = Never
 - 2 = Rarely
 - 3 = Occasionally
 - 4 = Regularly
- Other [text]

Advanced Modeling Capability

If known, what is the most sophisticated model currently being used in the Ministry of Finance for general economic analysis of policy options and/or forecasting?

Instruction: Please specify the most sophisticated economic model currently being used by the Ministry of Finance for economic analysis of policy options and/or general economic analysis and forecasting. Please note this is not only in the context of climate change but any economic policy.

- Model name (Optional)
 - [Text]
- Link to model document (Optional)
 - [Link]
- Model development and operation (Optional)
 - Developed internally and operated internally
 - Developed externally but operated internally
 - [Optional text: Name of entity that developed model]
 - Developed externally and operated externally
 - [Optional text: Name of entity that developed model]
- Approximate number of equations in the model (Optional)
 - [Number]
- Approximate number of sectors in the model (Optional)
 - [Number]
- Approximate number of regions in the model (Optional)
 - [Number]
- Which of these features does the model include (Optional)
 - [multiple options] - multiple choices
 - Heterogenous agents
 - Financial frictions
 - Endogenous technological change
 - Unemployment
 - Expectations
- Has this model ever been used to conduct climate-related economic policy analysis?
 - Yes
 - Optional details [text box]
 - No
 - Unsure

Integration of Climate into General Economic Models and Tools

Integration of Climate into General Economic Analysis and Modeling Tools

Has the Ministry of Finance integrated climate mitigation and/or decarbonization considerations ...

Instruction: Please select the option that applies.

- ... into macroeconomic forecasting of the economy
 - [0-4] single choice
 - 1 - Not undertaken
 - 2 - Currently under consideration
 - 3 - Partially integrated in model
 - 4 - Fully integrated in model
 - [Optional textbox] - include example and link to the document
- ... into detailed budget projections (including tax and spending plans)
 - [0-4] single choice
 - 1 - Not undertaken
 - 2 - Currently under consideration
 - 3 - Partially integrated in model
 - 4 - Fully integrated in model
 - [Optional textbox] - include example and link to the document
- ... into design of tax and fiscal policy options
 - [0-4] single choice
 - 1 - Not undertaken
 - 2 - Currently under consideration
 - 3 - Partially integrated in model
 - 4 - Fully integrated in model
 - [Optional textbox] - include example and link to the document
- ... into design of financial sector policy options
 - [0-4] single choice
 - 1 - Not undertaken
 - 2 - Currently under consideration
 - 3 - Partially integrated in model
 - 4 - Fully integrated in model
 - [Optional textbox] - include example and link to the document
- ... into quantitative policy and program appraisal methods
 - [0-4] single choice
 - 1 - Not undertaken
 - 2 - Currently under consideration
 - 3 - Partially integrated in model
 - 4 - Fully integrated in model
 - [Optional textbox] - include example and link to the document

Integration of Climate into General Economic Analysis and Modeling Tools

Has the Ministry of Finance integrated physical climate risk and/or adaptation measures ...

Instruction: Please select the option that applies.

- ... into macroeconomic forecasting of the economy
 - [0-4] single choice
 - 1 - Not undertaken
 - 2 - Currently under consideration
 - 3 - Partially integrated in model
 - 4 - Fully integrated in model
 - [Optional textbox] - include example and link to the document
- ... into detailed budget projections (including tax and spending plans)
 - [0-4] single choice
 - 1 - Not undertaken

- 2 - Currently under consideration
 - 3 - Partially integrated in model
 - 4 - Fully integrated in model
 - [Optional textbox] - include example and link to the document
- ... into design of tax and fiscal policy options
 - [0-4] single choice
 - 1 - Not undertaken
 - 2 - Currently under consideration
 - 3 - Partially integrated in model
 - 4 - Fully integrated in model
 - [Optional textbox] - include example and link to the document
- ... into design of financial sector policy options
 - [0-4] single choice
 - 1 - Not undertaken
 - 2 - Currently under consideration
 - 3 - Partially integrated in model
 - 4 - Fully integrated in model
 - [Optional textbox] - include example and link to the document
- ... into quantitative policy and program appraisal methods
 - [0-4] single choice
 - 1 - Not undertaken
 - 2 - Currently under consideration
 - 3 - Partially integrated in model
 - 4 - Fully integrated in model
 - [Optional textbox] - include example and link to the document

Use of Climate Damage Scenarios

Is the Ministry of Finance using climate-related scenarios of global warming (physical climate pathways) to inform general economic policy analyses? (e.g., considering impact of changes in labor productivity due to climate risks such as heat stress on economic growth projections)

[multiple choice] - multiple answers

- Not planned
- No, but currently under consideration
- Yes, using those adapted from off-the-shelf physical climate scenarios based on GHG emission pathways (e.g., Intergovernmental Panel on Climate Change (IPCC))
- Yes, using internally developed physical climate scenarios

Use of Climate Transition Scenarios

Is the Ministry of Finance using climate-related decarbonization scenarios (including baseline emissions and climate policy scenarios) to inform general economic policy analyses? (e.g., considering impact of climate policies on economic growth projections)

[multiple choice] - multiple answers

- Not planned
- No, but currently under consideration
- Yes, using those adapted from off-the-shelf climate policy/transition pathways (e.g., Network for Greening the Financial System (NGFS))
- Yes, using internally developed climate policy/transition pathways
- Yes, using those adapted from off-the-shelf technological unit cost or sector-specific decarbonization scenarios (e.g., International Energy Agency (IEA))
- Yes, using internally developed technological unit cost or sector-specific decarbonization scenarios (e.g., derived through energy modeling)

Climate and Transition Dynamics

Has the Ministry of Finance considered the following dynamics in any of its climate-related analytical exercises?

[multiple options] – multiple answers

- Climate tipping points (e.g., non-linear relationships between temperature increase and GDP impacts) *[Yes/No/Unsure]*
- Compounding risks (e.g., multiple risk drivers materializing at the same time, such as an economic recession coupled with acute physical climate risk event) *[Yes/No/Unsure]*
- Trade effects (e.g., impact of carbon border adjustment mechanisms on international trade relations) *[Yes/No/Unsure]*
- Wider non-economic impacts and spill over effects (e.g., co-benefits on health and living quality)
- *[Other]*

Specific Climate-Economy Models and Tools

Specific Climate-related Models

Does your Ministry have dedicated climate-economy models of mitigation or adaptation policies which differ from the general economic models being used above?

- *[0-4] Multiple choice*
 - 1 – Yes, internal climate-economy models
 - *[OPTIONAL: Please specify type and name of model, as well as for which policy area or analytical question this model is being used]*
 - 2 – Yes, external climate-economy models
 - *[OPTIONAL: Please specify type and name of model, as well as for which policy area or analytical question this is used]*
 - 3 – No
 - 4 – Unsure

Climate-related Data

Where does your Ministry of Finance get granular climate-related data from (e.g., carbon emissions data, spatially specific vulnerability to floods or droughts, damage functions, etc.)

[Please select all options that apply – multiple choice]

- National statistical offices
- International bodies (IMF, World Bank, OECD)
- Regional bodies (regional development banks)
- International research bodies and community (e.g., IPCC)
- Domestic university or non-profit institution (e.g., non-government climate think tank)
- Other government departments or other public bodies (e.g., Ministry of Environment)
- Private-sector company (e.g., a climate consultancy firm)

What are some of the most pressing climate-related data challenges you face?

[Instruction: In the textbox, please identify and elaborate on the most pressing climate-related data challenges you face in terms of the data itself or access to the data.]

[Text box]

Financing Climate Action and Economic Analysis

Domestic Adaptation Expenditure Needs

Has the Ministry of Finance conducted any analysis to estimate public expenditure and financing needs for adaptation/resilience?

- Yes
- No
- Unsure
- Other *[text box]*

Domestic Decarbonization Expenditure Needs

Has the Ministry of Finance estimated public expenditure costs and financing needs associated with policies for decarbonization?

[multiple options] - multiple answers

- Economy-wide estimates [Yes/No/Unsure]
- Buildings – detailed estimates [Yes/No/Unsure]
- Transportation – detailed estimates [Yes/No/Unsure]
- Industry/Manufacturing – detailed estimates [Yes/No/Unsure]
- Agriculture/Land Use – detailed estimates [Yes/No/Unsure]
- Power Generation – detailed estimates [Yes/No/Unsure]
- Other, please specify [Text]

Costs of Diversifying Away from Fossil Fuels

Has the Ministry of Finance estimated financing needs or support that might be needed for transitioning key sectors away from fossil fuels?

Definition: Expenditure costs and financing needs could include direct costs, subsidies, or compensation for fossil-fuel industries or infrastructure, such as support for re-skilling of labor force in areas dependent on fossil fuels, retrofitting or repurposing existing infrastructure, etc.)

Instruction: Please select any of the options below that are applicable.

- Yes
 - please specify the sectors considered [text box]
- No
- Unsure
- Other [text box]

Sources of Funding for Additional Expenditure

From which sources of funding does the Ministry of Finance assume the majority of the fiscal costs related to climate adaptation, transition to net zero, and diversification can be mobilized from?

[multiple options] - multiple answers

- Spending cuts in other budget areas
- New taxes, levies or duties
- Government debt (e.g., green bonds)
- Domestic private finance/investment
- Blended finance
- International aid/grants
- International private finance/investments
- Not considered
- Other, please describe [text box – e.g., generally available fiscal space]
- Not applicable

Has the Ministry of Finance led analytical work to identify and design new measures for raising revenue in a low-carbon economy?

- Yes
- No
- Unsure
- Other [text box]

OVERCOMING BARRIERS AND ENHANCING ANALYTICAL CAPABILITIES

Barriers

Are there significant barriers to incorporating climate-related issues in your economic analysis and modeling approaches?

[multiple options] – multiple answers

- Yes, data challenges
- Yes, model development challenges
- Yes, staffing and skill constraints
- Yes, financial resource constraints

- No
- Other [**Please specify**]

Governance

Please indicate with a number from 1 to 5 the extent to which the following statement applies to your Ministry: “The Ministry has clear mechanisms (e.g., senior-level responsibilities or other governance structures) to ensure climate-related analysis reaches respective decision-makers in a timely manner”

Please note that in this case, 1 means “not at all applicable” and 5 means “entirely applicable.”

- Scale [1-5]

Please describe [**Free text box**]

Support for Enhancing Capabilities

What type of additional support would enable the Ministry of Finance to enhance its climate-related analytical capabilities?

***Instructions:** Please select all the options that apply.*

- Having access to case studies from other countries
- Having access to the latest and most relevant developments in climate-economy modeling
- Having access to the latest and most relevant empirical research in climate economics
- Having access to an online dashboard of existing climate-related data and scenarios
- Mobilizing resources and capacity for domestic data collection
- Technical assistance to develop in-house climate-related analytical capabilities
- Technical assistance to maintain in-house climate-related analytical capabilities
- Having access to a robust off-the-shelf macroeconomic model of climate change
- Other [**explain**]

Coalition of Finance Ministers

How can the Coalition of Finance Ministers for Climate Action best provide support to your Ministry of Finance in enhancing its climate-related analytical capabilities?

[**Text box**]

Concrete examples

Do you have examples and/or case studies where analysis has influenced a climate policy or associated learning experiences that you may want to share?

[**Optional Text box**]

Annex 2. Interview structure and information consent form

Interview structure

The structure provided below served as a reference point for the semi-structured interviews. Based on individual conversations, the interviewers deviated from the guidance. Interviews were transcribed and fully anonymized.

General

- Can you please briefly describe your current role and responsibilities within the Ministry?
 - Policy side
 - Analytical and modeling side.
- Can you elaborate on roughly how many people in your Ministry work on economic analysis and modeling in general and how many people within this work on climate-specific analysis and modeling?

Part A: Policy and analytical priorities

- From the perspective of the Ministry of Finance, what are the most pressing policy questions that you need good analytical answers to? Please can you elaborate on the related analytical questions?
- Can you name and elaborate on a quite specific live policy that is currently underway? And the type of analysis you are using or need to address this?

Part B: Climate-economy modeling and barriers

- Taking into consideration the policy and analytical priorities mentioned earlier, can you elaborate on how well you can cover these issues with existing modeling or related tools? Please provide some specific examples and technical detail.
 - *Potential follow-up questions: Which model types are you using in general across key core functions and to what extent are climate considerations integrated (macroeconomic forecasting, policy evaluation, budgeting, and costing)? Do you rely on any other climate-specific external models/analytics? How do your bespoke climate models relate to your general economic models and analytical toolbox? What is the level of integration?*

Part C: Capabilities

- How does the analytical work feed into the decision-making process, how effective is it, and who is involved? What are the main challenges and barriers to analysis being used to inform decision-making?
- If time, in more general terms, could you elaborate on:
 - Whether there is senior leadership and clear governance structures overseeing analytical capability
 - The level of and importance of collaboration with other line ministries and/or outside actors
 - The types of skills they have or might need in future.
- What do you think would be the most helpful support that you need to advance capabilities? What would make the single biggest difference to your capabilities?

Wrap up

- Is there something we haven't asked you about that you'd like to mention?
- Would you like to flag an important initiative or new work that you plan to undertake?

Interview information consent

Revamping Economic Analysis and Modeling to Drive Climate Leadership by Ministries of Finance

Information Sheet and Consent Form (6 May 2024)

We invite you to participate in a short interview via Microsoft Teams. Participation in this research is completely voluntary. We are interested in your personal views and experiences, whether positive or negative.

1. What is the research about?

The Grantham Research Institute (GRI) at the London School of Economics and Political Science (LSE) is undertaking a research project, sponsored by the Bezos Earth Fund, to write a report for the workstream HP4 of the Coalition of Finance Ministries for Climate Action, co-chaired by the United States Department of the Treasury and the Danish Ministry of Finance. The initiative aims to address how to integrate climate into the macroeconomic analysis and models of Ministries of Finances (MoFs). Hence, a major new effort was launched to support Ministries of Finance in developing economic analysis and modeling capacity that can match their needs. This will include both work within the Coalition of Finance Ministers, as well as activities aimed at building a larger community of practice with leading researchers, modeling experts, and institutions that can help advance this agenda.

We are now conducting semi-structured interviews with Ministry of Finance officials. These interviews will allow us to analyze where MoFs currently stand, what models and analytics are being used, and what the most pressing technical and policy challenges are. The core team on the project includes Nick Godfrey (n.godfrey@lse.ac.uk), Distinguished Policy Fellow and Senior Advisor, and Dr. Moritz Baer (m.baer1@lse.ac.uk), Visiting Fellow at GRI. Please feel free to contact any of us by email should you require further information.

2. What will my involvement be?

As a team member of your respective country's Ministry of Finance, you will be asked to take part in a 60-minute interview via Microsoft Teams. If you decide to take part, we will ask you a series of policy-related and analytical questions to better understand the status of mainstreaming climate (mitigation, adaptation, and resilience aspects) in your Ministry's analysis and modeling. Your view will not be cited directly with any level of attribution, and we would appreciate an open expression of your opinion rather than a discussion of the public position your organization may have on this issue. It is your choice whether or not to participate.

We will ask for your permission to record the conversation at the start of the interview. If any questions during the interview make you feel uncomfortable, you do not have to answer them. Note, even if you do decide to take part, you are free to withdraw within 14 days of the interview, without giving a reason, by emailing either Nick Godfrey or Moritz Baer. If you withdraw from the study, we will not retain the information you have given thus far, unless you are happy for us to do so.

3. Will my data be kept confidential, anonymous, and how will information provided be used?

All information you provide will be kept anonymous and will be securely stored. All digital files, transcripts, and summaries will be given codes and stored separately from any names or other

direct identification of participants. Short quotes from your interview may be used in resulting outputs. However, neither your name, nor the name of your institution or company will be mentioned or associated in any way with your answers without your explicit prior consent. The results of the study will be published in a Coalition report under the workstream HP4, supported by the Grantham Research Institute at the LSE. The results may further be used or inform subsequent academic research and/or policy journals.

4. Data protection privacy notice and complaints

This study has undergone ethics review in accordance with the LSE Research Ethics Policy and Procedure. The LSE Research Privacy Policy can be found [here](#).

If you have any questions, please contact any member of the core research team. If you have any concerns or complaints regarding the conduct of this research, please contact the LSE Research Governance Manager via research.ethics@lse.ac.uk.

If you are happy to take part in this study based on the conditions set out in this information sheet, please confirm your consent via email reply to m.baer1@lse.ac.uk and n.godfrey@lse.ac.uk in advance of the interview.