Sustainable Finance: Developing Guidance for Data to Address Climate Change
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Following up on the discussions during the 2019 Committee meeting and drawing on other international initiatives on sustainable finance, this paper presents an initial discussion on the cross-border aspects of data needs focusing mainly on those related to climate change. The aim, going forward, is to take advantage of the ongoing international initiatives and to seek the Committee members’ views to specify the data needs in the context of the update of the Balance of Payments and International Investment Position Manual, sixth edition.

INTRODUCTION

1. During the 2019 meeting of the Committee, the members agreed to include in its research agenda exploratory work on the feasibility of measuring cross-border flows and positions on sustainable finance to better inform financial stability analysis, including potential risks from climate change. To this end, staff of the IMF jointly with the De Nederlandsche Bank (DNB) has been working together to explore how the developments in sustainable finance could be reflected into the update of the Balance of Payments and International Investment Position Manual, sixth edition (BPM6).

2. Sustainable finance is a very broad topic, covering a number of environmental, social, and governance (ESG) issues. A paper was prepared for the October 2020 meeting of the Committee to update the members on the progress made on developing indicators and statistics on sustainable finance and seek inputs on the way forward (BOPCOM—20/22). During the meeting of the Committee, members agreed to focus the work initially on climate change as this is the area where the statistical needs are most developed. The Committee also agreed to fill out the stocktaking survey, in collaboration with relevant agencies in their countries. The survey is the one developed by the ECB Statistics Committee’s Expert Group on Climate Change and Statistics (ECB EG CCS) and requests information on national efforts to assess climate change related risks. The work of the ECB EG CCS and the results of the survey will be vital inputs to developing guidance for the updated BPM6.

3. A first step in developing this guidance is to take stock of what has been done at the international and national levels to identify the data and statistical needs for informed policy making to address climate change. The goal is to leverage such efforts and to tease out the relevant cross-border aspects of this work. In that context, this paper draws on the report by the ECB EG CCS as well as the work by the Financial Stability Board on data needs on sustainable finance. It also draws on internal consultations with the IMF’s departments on data needs on climate change data needed for macroeconomic policymaking. These consultations were conducted as part of the development of the Climate Indicators Dashboard (CID), an important first element in the Fund’s climate change strategy. The next section will

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2 For example, the IMF in its Global Financial Stability Report (2019) defines sustainable finance as “the incorporation of environmental, social, and governance (ESG) principles into business decisions, economic development, and investment strategies.”

3 The stocktaking survey is the one developed by the ECB Statistics Committee’s Expert Group on Climate Change and Statistics. The outcomes of the survey are summarized in the “Towards statistics on climate change relevant for Central Bank activities”, October 2020, an internal European System of Central Banks (ESCB) report.
describe these efforts. The third section will explore the cross-border aspects of the data needs that have been identified by these efforts. While most of the work has focused on the financial aspects of climate change, especially the risks it poses to financial stability, the data needs go beyond finance, including, for example, the impact of an economy’s consumption on carbon emissions. The final section will conclude with thoughts on the next steps and questions for the Committee.

INTERNATIONAL INITIATIVES TO ADDRESS DATA NEEDS REGARDING CLIMATE-CHANGE RELATED RISKS

4. The need to accurately assess the impact on financial systems, of physical risks and economic losses related to climate change, and the financing for the transition to a low-carbon economy has become an important issue for financial system regulators, policy makers, and market players. This need can only be met with high-quality, consistent, and comparable information to formulate policies to address these issues. While there are a wide variety of approaches worldwide to the issue of climate change, it is commonly agreed that the problem is global in nature and that handling it requires global coordination. To this end, there are several international initiatives examining data needs related to climate change. Such efforts to improve the availability of information on sustainable finance and climate change are a strong foundation for developing guidance to be included in the updated BPM6. This section will describe some of the key initiatives being undertaken.

INTERNATIONAL EFFORTS TO IMPROVING MACRO DATA FOR CLIMATE CHANGE RELATED RISKS

5. Considering that climate change poses significant threat to macroeconomic and financial stability globally, the IMF places special emphasis on climate change and has been helping its members implement mitigation strategies, build resilience, and manage risks (IMF 2020). To anticipate some of the data needs in support of the policy work, the IMF’s Statistics Department (STA), in close cooperation with other departments of the IMF and international organizations, is working on developing a Climate Change Indicators Dashboard (CID). The CID, which will be launched in April 2021, will include (i) economic and environmental activity indicators, (ii) cross-border indicators, (iii) financial and risk indicators, and (iv) government policy indicators. Cross-border indicators to be included in the first release of the CID in April 2021 are presented in Annex I. However, it is important to note that, as a first effort, the CID indicators do not meet all data needs and will need to be improved over time. First of all, and by necessity, they are based on existing statistics, which may have been developed for very different purposes and are not in and of themselves sufficient to provide all the required information on climate change. Secondly, and again by necessity, some of the derived indicators that are computed use heroic assumptions that may not always correspond with reality. Hence, further statistical work at national central banks/statistical institutes is needed in the coming years to enhance and expand the available statistical information and help ensure a quality level that is sufficient to support policy decisions. To help develop the needed statistics, the ninth annual IMF’s Statistics Forum, to be held in November 2021, will focus on climate change statistics.

4 The CID will be shared with selected users for review prior to the public launch to give them the chance to comment on the indicators.
6. Acknowledging this need, the ECB EG CCS has conducted a stocktaking of existing work and initiatives, user needs and the methodological challenges, and data gaps that need to be overcome. The ECB EG CCS, with its report that was submitted to the Statistics Committee, identified three sets of indicators as a key priority: (i) exposures of financial institutions to climate-related physical risks, (ii) carbon footprints of their portfolios, and (iii) number and value of “green” financial instruments.

7. Another key platform is the “bridging the data gaps” workstream of the Network for Greening the Financial System (NGFS), which follows up on the NGFS recommendation for the appropriate public authorities to share data of relevance to climate risk assessment and, whenever possible, make them publicly available in a data repository (NGFS 2019). The IMF and the ECB are co-chairing the workstream.

8. The Irving Fisher Committee (IFC) has also initiated work on sustainable finance by planning to conduct a stocktaking of data needs/data availability for central banks on sustainable finance with a particular focus on environmental data complementing the already ongoing initiatives. In that context, the IFC launched a survey among its members on ESG data availability and data needs relevant for the central banks’ policy functions. The results of the survey are planned to be published in the second half of 2021.

9. A Task Force of the Committee on Monetary, Financial, and Balance of Payments Statistics (CMFB) on the Statistical Treatment of Sustainable Finance and Climate-Related Risks was also created to explore the statistical aspects of climate change.

INTERNATIONAL EFFORTS TO IMPROVE FINANCIAL DISCLOSURES FOR CLIMATE CHANGE RELATED RISKS

10. Another important element of addressing the financial risks posed by climate change is ensuring that individual institutions disclose reliable and consistent data to better inform market players for their investment decisions as well as the regulators for their oversight responsibilities. In that context, a key platform is the Financial Stability Board’s (FSB) industry-led Task Force on Climate-related Financial Disclosures\(^5\) (TCFD) which was set up in 2015 at the request of the G-20 to engage with the private and public sector to review how the financial sector can incorporate climate-related issues in financial reporting. The TCFD undertook a coordinated assessment of what constitutes efficient and effective disclosure and published in its final report of June 2017 a set of recommendations for voluntary company financial disclosures of climate-related risks that are widely applicable across sectors and institutions and suggested that the companies include their climate-related financial risks in their mainstream annual financial filings.

11. Another key development to improve the availability and consistency of micro data is the work in the context of the International Financial Reporting Standards (IFRS). Considering the increasing importance of comparable and consistent data disclosures by companies of their climate-related financial risks, the IFRS Foundation Trustees published a consultation paper (IFRS 2020) to identify the demand from stakeholders in the area of sustainability reporting and to understand the possible ways they might contribute to the development of global standards.

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\(^5\) The Task Force members include various players such as large banks, insurance companies, asset managers, pension funds, large nonfinancial companies, accounting and consulting firms, and credit rating agencies.
12. A cross-cutting element of all these initiatives is the need for consistent definitions across portfolios, institutions, sectors, and jurisdictions. To that end, significant work has been done for the development of taxonomies and definitions to be able to consistently identify sustainable investment and green assets. Key among them are the EU Sustainable Finance Taxonomy (EU Taxonomy) which was first published in June 2019 and later updated in March 2020; the International Capital Markets Association (ICMA)’s guidelines on “Green Bond Principles (GBP), “Social Bond Principles (SBP)” and “Sustainability Bond Guidelines” that were published in June 2018; and the Climate Bond Initiative (CBI)’s Climate Bonds Standard & Certification Scheme that comprises a Climate Bonds Taxonomy and Sector Eligibility Criteria.

HOW COULD CROSS-BORDER STATISTICS BE UTILIZED FOR A BETTER UNDERSTANDING OF CLIMATE CHANGE RELATED RISKS?

13. Leveraging from these efforts and considering the cross-border nature of climate change risks, the Committee needs to consider how the external sector statistics (ESS) could be utilized to inform climate risk analysis and identify which aspects of the ESS should be further developed from a climate change point of view. This is also important for the update of the BPM6.

14. Building on the work of other initiatives as well as the inputs by the Committee members to the stocktaking exercise, the work could start with the financial aspects of climate change which is one of the more developed areas. The focus could then be broadened to include other components of sustainable finance beyond climate change.

FINANCIAL RISKS

15. One of the key areas where more information is needed is on the financial risks arising from climate change. This would examine the risks of a decrease in the value of financial assets due to physical risks related to climate change as well as those due to the transitional risks that relate to the adjustment towards a low-carbon economy. Both the physical and transition risks have a market risk and credit risk component. The former relates to the changes in the value of financial assets due to price movements stemming from, for example, extreme weather events whereas the latter relate to loan losses that may arise due to the worsening of the repayment capacity of their borrowers. Financing both adaptation to climate change as well as the transition to a low-carbon economy is a huge challenge and will require cross-border capital flows, especially to low income countries. Tracking green financing instruments across borders would shed light on the extent that green financing has been globalized. In addition, insurance and reinsurance companies would be exposed to physical risks through their liabilities. Rising insurance premiums due to greater economic losses from climate change, on the other hand, would limit the transfer of risks from households and businesses to the insurance companies (FSB 2020).

6 Building on ICMA’s Green Bond Guidelines, the Association of South East Asian Nations (ASEAN) Capital Markets Forum (ACMF) also published ASEAN Green Bonds Standards which provides more specific guidance on how these principles should be applied to ASEAN countries to allow for the labelling of ASEAN green bonds.

7 Research has been done to explore the climate change related risks to the financial systems. This includes the 2020 FSB Report on the “Implications of Climate Change for Financial Stability” and the 2019 NGFS paper on “Macroeconomic and Financial Stability Implications of Climate Change: NGFS Technical Supplement”.
16. Below is an initial list of information that could be useful to explore financial risks mainly from a cross-border perspective.  

17. **Physical Location of Financial Investments.** Investments in certain economies/regions may be more exposed to physical risks related to losses due to extreme weather events. In addition, transition risks⁸ may also have an important geographical component, as, for example, policy changes typically occur nationally. Sovereign credit risk could also increase in those economies with carbon intensive industries (FSB 2020). To that end, information on the physical location of investments, in combination with information on the physical risks associated with that location, would shed light on both the physical and transitional risks to which a country’s cross-border investments are exposed.

18. **Type of Investments.** Type of investments (e.g., green bonds) could be useful to understand financial institutions’ exposures to transitional risks as the prices of these assets could fluctuate due to policy interventions. The information should be complemented with a consistent taxonomy for green vs. other assets. While there has been considerable focus on green bonds,¹⁰ both lending, including intercompany debt, and equity would also be of interest. In addition to transactions and positions in these instruments, there would also be interest in the returns earned on them.

19. **Sector of Investments.** Information on financial institutions’ lending to specific sectors could shed light on both physical risks (e.g., lending to agricultural sector, holding of mortgage backed securities) and transitional risks (e.g., lending to carbon intensive sectors).

20. **Country and Sector Information on Foreign Direct Investment.** Nonfinancial corporations are directly exposed to climate change related risks through their direct investments (e.g., through investments in a specific sector or economy). Financial corporations are also subject to such risks indirectly through the lending portfolios of their subsidiaries abroad. To this end, sector and country information on foreign direct investment would be useful to explore such risks.¹¹

21. **Source of Funding (Location of Borrowers).** Exposure of the sources of financing (e.g., energy exporting jurisdictions) to climate change related physical or transitional risks may affect the funding levels of financial and nonfinancial institutions. Information on the lender would be helpful for an assessment of such risks.

22. **Insurance/Reinsurance Companies’ Exposures to Physical Risk.** Insurance companies could be affected by climate change related risks through the asset side of their balance sheets (as discussed

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⁸ Annex II provides an initial mapping of the impacts of climate change to the accounts in the balance of payments at a very aggregate level.

⁹ Transition risks are the financial risks associated with the move to a lower-carbon society, resulting from, for example, changing regulation or consumer preferences. Carbon taxation or restrictions on products or components thereof may negatively affect business models or the value of capital goods (stranded assets).

¹⁰ For example, the Bank for International Settlements has developed a “Sustainable bonds database”, aggregates from which are provided to members of the Network for Greening the Financial System members. The CID will include indicators for green bonds, including green bonds by type of issuer and sovereign green bonds as a share of total sovereign debt.

¹¹ Information by country would be provided by the supplemental presentation proposed in Guidance Note D.6 on Ultimate investing Economy, Ultimate Host Economy, and Identifying Pass-Through. Supplemental information by economic activity of FDI could provide information on risks in specific sectors/industries.
above) but also on the liability side through losses incurred. Being able to reinsure across borders will be an important way for insurers in economies that face significant risks from climate change to spread that risk. Therefore, information on cross-border insurance and reinsurance services and nonlife insurance claims paid\textsuperscript{12} could provide useful information on an economy’s access to and ability to insure across borders.

23. **Climate-Related Financial Derivatives.** Financial derivatives are an important tool for managing risks. Therefore, institutions’ holding of financial derivatives related to sustainable investments or climate-related risks, including across borders, would help us understand how they hedge against such risks. Weather-related financial derivatives are being developed to deal with weather-related events. Derivatives tied to specific commodities, such as oil, specific agricultural commodities, or tons of CO\textsubscript{2} emissions, could also be of interest.

NONFINANCIAL ASPECTS OF CLIMATE CHANGE RELATED RISKS

24. The need for climate change related information is not limited to the financial aspects. This section will outline some of the other areas where cross-border data could prove useful. It begins with indicators that could shed light on how international consumption and production could contribute to climate change and be disrupted by it. In addition to the financial aspects of direct investment discussed above, direct investment can also contribute to emissions in host countries. Current and capital transfers may increase in response to climate-related disasters as well supporting climate adaptation/mitigation strategies.

25. **CO\textsubscript{2} Emissions Embodied in Trade.** By calculating the CO\textsubscript{2} emissions embodied in a country’s production and in its final demand (consumption), it is possible to determine if a country is a net exporter or net importer of CO\textsubscript{2} (Yamano and Guilhoto, 2020), using a range of assumptions. This is one of the indicators that will be included in the IMF’s CID, but will need to be further refined based on, for example, improved national Supply and Use Tables and System of Environmental-Economic Accounting indicators.

26. **Trade in Specific Products.** Trade in goods and services that have been developed to address climate change, such as goods adapted to reduce CO\textsubscript{2} emissions, could be of interest. It could also be useful to identify economies that are vulnerable to transition risks through their reliance on specific exports, such as fossil fuels. Monitoring trade in nonlife insurance services as well as the associated premiums and claims paid could reveal if economies that are at greater risk of economic losses from climate change are having difficulty in purchasing insurance or reinsuring across borders.

27. **Disruptions to Regional/Global Value Chains.** Cross-border value chains could be disrupted by climate change. Natural disasters related to climate change could cause these disruptions. Also, specific supply chains could be disrupted (e.g., food and agricultural supply chains could be disrupted by changes in agricultural patterns resulting from climate change).

28. **CO\textsubscript{2} Emissions by Investment Activities of Direct Investment Enterprises.** Direct investment can lead to gross fixed capital formation (GFCF) in the host economy. This GFCF will contribute to carbon 

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\textsuperscript{12} Identifying the proportion of insurance policies or claims that are climate-related would be even more useful.
emissions of the host economy from the production activity of domestic sectors that supply products for capital formation.\textsuperscript{13}

29. **CO\textsubscript{2} Emissions by Operations of Direct Investment Enterprises.** The operations of direct investment enterprises can contribute to CO\textsubscript{2} emissions in the host economy both directly from their activities and indirectly through their use of domestic inputs, such as electricity. Being able to track the carbon emissions of parent companies in the home economy and its foreign affiliates in host economies would shed light on the extent that foreign operations of domestic multinational enterprises (MNEs) contribute to climate change.

30. **Current and Capital Transfers Related to Climate Change.** Current and capital transfers could be boosted by climate change through a variety of means. Governments and nonprofits serving households could provide current transfers in response to natural disasters or capital transfers to support climate adaptation and mitigation. If people are displaced by climate change, then personal current and capital transfers could increase.

**WAY FORWARD**

31. The initial focus of this paper on climate change helped narrow down the broader topic of sustainable finance. However, despite the considerable amount of work at the national and international levels in the area of climate change, there is significant room for further work at the policy level which would underpin the identification of data needs. As policy makers’ understanding of how to better incorporate climate change related risks into macro-economic, financial stability, and fiscal policies evolve, it is inevitable to see emerging information needs. Having said that, considering the long life of statistical methodologies, at this junction, it would be important to anticipate to the extent possible such information needs to incorporate them in the update of the *BPM6*. Equally important is to maintain a certain degree of flexibility so that emerging information needs could be captured by the revised methodology. While the initial focus is on climate change, the broader environmental, social and governance issues should also be explored in the future.

32. Considering that the sustainable finance would have both cross-sector and domestic implications, it is key to ensure coordination between the updates of the *BPM6* and the *System of National Accounts*.\textsuperscript{14} It is important to note that some of the recommendations that are already to be included in the update of the *BPM6*, such as direct investment by ultimate host economy, could be useful for understanding the risks from climate change. Also, it may not be necessary to directly measure some impacts, such as transfers related to climate change using external sector statistics, but rather guide the analysts so that these could be estimated using the information from the balance of payments along with other information on climate-related disasters.

33. The new G-20 Data Gaps Initiative, the key focus areas of which will include on climate change and sustainable finance statistics, will boost the work on sustainable finance while providing a platform for coordination among the G-20 economies and, international and regional organizations.

\textsuperscript{13} The capital approach to measuring contributions of foreign-owned firms to GFCF discussed in GN D.1 “Greenfield investment and extensions of capital” would be useful for producing these estimates.

\textsuperscript{14} The SNA work on sustainable finance is being covered by the Wellbeing and Sustainability Task Team.
34. The IMF and DNB, in cooperation with the Committee Members, will continue exploring the information needs based on the responses to the stocktaking survey and leveraging work by others (e.g., the IFC survey, IFRS work).

**Questions to the Committee Members:**

1) *Which of the aspects and indicators mentioned above and in Annex III, would the Committee consider worthwhile to investigate further in the context of developing guidance for BPM7?*

2) *Should the focus be only on the financial aspects or would the Committee also like to consider the other aspects (consumption and production)?*

3) *Should this work be carried forward as part of GN B.6 Sustainable Finance?*
Appendix I. References


Appendix II. Cross-Border Indicators in the IMF’s Climate Indicators Dashboard

1. The IMF will release the Climate Indicators Dashboard (CID) in April 2021. It has been developed in collaboration with other international organizations and will include a variety of indicators. The cross-border indicators are focused on trade and direct investment. For trade, the first set of indicators will be on CO₂ emissions embodied in trade and were first developed by the OECD (Yamano and Guilhoto, 2020). Utilizing the global input-output tables (IOTs), input-output coefficients will be combined with cross-border trade flows by country and product to develop estimates of carbon emissions embodied in imports and exports. This data can be combined with the estimates of quarterly emissions by activity to compare the production of carbon with the “consumption” of carbon. This work involves using the latest vintage of the world input-output tables, and detailed estimates of merchandise trade by six-digit Harmonized Commodity Description and Coding (HS) commodity codes. These data will be produced on an annual basis with a target release date of six months after the reference period.

2. A second set of indicators will estimate trade in environmental goods. Environmental goods include both goods connected to environmental protection—such as goods related to pollution management and resource management—and adapted goods. Adapted goods are goods that have been specifically modified to be more “environmentally friendly” or “cleaner” and whose use is therefore beneficial for environmental protection. Examples of adapted goods include desulphurized fuels, mercury-free batteries, and chlorofluorocarbons-free products. Goods connected to environmental protection are goods whose use directly serves environmental protection purposes. Examples of connected goods include septic tanks, catalytic converters for vehicles, trash bags, bins, rubbish containers, and compost containers. Data on environmental goods will be estimated using identified six-digit HS commodity codes that correspond to the descriptions of adapted and connected goods respectively to extract data from the UN COMTRADE database on imports and exports of individual countries by commodity category and partner country. For the initial release of the CID, indicators will cover trade in environmental goods; future enhancements will include refining the definitions of adapted goods and connected goods, and publishing those separately. Indicators will include trade balances in environmental goods, shares of environmental goods to total exports and imports, and comparative advantage in environmental goods exports.

3. There will also be two sets of indicators for direct investment that will provide estimate the effect of direct investment on emissions in host economies. The first set of indicators will estimate the gross fixed capital formation (GFCF) effect of direct investment resources on emissions resulting from the production activity of domestic sectors that supply products for capital formation. This indicator will be estimated using annual data on IMF CO₂ emissions multipliers calculated from the OECD Input-Output tables; OECD direct investment by economy and economic activity; and OECD Capital formation by activity. Data on CO₂ emissions multipliers will be combined with estimates of supplies to gross fixed capital formation to derive estimates of the emissions by activity for each country which will be apportioned to direct investment. The CO₂ emission multipliers refer to CO₂ direct and indirect emissions including CO₂ emissions from fuel combustion and CO₂ emissions embodied in goods and services used.

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15 Trade in environmental goods were identified by linking the goods identified in the Eurostat Handbook, The Environmental Goods and Services Sector, 2009 to the HS Codes. The OECD/Eurostat 1999 manual that identified the HS 1996 codes of environmental goods was the starting point. This was then updated to the more recent HS codes.
as inputs during the production process. They include all emissions from upstream processes. CO₂ emissions multipliers are obtained by combining CO₂ output intensities with input-output multipliers.

4. The second set of indicators will estimate the effect of production activity of foreign owned firms (i.e., firms that receive direct investment) on emissions in the domestic host economy. This indicator will be estimated using annual data on IMF CO₂ value added intensities; and OECD value added of MNEs and its components by activity.

5. Other indicators included in the CID will cover a variety of items, including greenhouse gas emissions by economic activity by economy; carbon emission multipliers that will quantify the direct and indirect impacts that economic activity has on carbon emissions by industry and by economy; a variety of climate-related physical measures; financial and risk indicators, such as carbon-footprint adjusted loans by economy; green finance, including green bonds; and indicators on environmental taxes, government expenditures on environmental protection, and subsidies that protect or damage the climate.
Appendix III. Climate Change Related Items in the Balance of Payments Accounts

Climate change has widespread effects on economies and societies. To help develop guidance for the updated \textit{BPM6}, it would be useful to identify the different items within the accounts that could be affected by climate change. Table 1 begins to develop a mapping between the balance of payments and climate change at a very aggregate level. If it is deemed useful, the mapping can be developed at a more granular level. The indicators are split into three types: [A] those that require additional breakdowns of existing balance of payments items; [B] those that would potentially result in supplemental—possibly non-financial—satellite tables to the balance of payments; and [C] existing balance of payments items that could in their current form already be useful for research on climate change.

\textbf{Table 1. Examples of Climate Change Impacts on the Balance of Payments by Account}

<table>
<thead>
<tr>
<th>Account</th>
<th>Examples of Climate-Related Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goods and services account</td>
<td>• CO\textsubscript{2} embodied in trade [B]</td>
</tr>
<tr>
<td></td>
<td>• Trade in environment-related goods and services [A]</td>
</tr>
<tr>
<td></td>
<td>• Exports of specific products (e.g., fossil fuels) to identify economies that might have higher climate-related risks [A]</td>
</tr>
<tr>
<td></td>
<td>• Cross-border trade in insurance services [C]</td>
</tr>
<tr>
<td></td>
<td>• Disruptions to regional/global value chains due to climate change [B]</td>
</tr>
<tr>
<td>Primary income account</td>
<td>• Income on green bonds and other sustainable finance instruments [A]</td>
</tr>
<tr>
<td></td>
<td>• Rent for putting natural resources at the disposal of another party [A]</td>
</tr>
</tbody>
</table>
| Secondary income account         | • Current international cooperation related to climate change (e.g., current transfers following natural disasters) [A/C?]
|                                  | • Personal transfers (e.g., personal transfers and workers’ remittances could increase due to migration caused by climate change) [C] |
|                                  | • Nonlife insurance premiums and claims [C]                                                          |
| Capital account                  | • Capital transfers related to climate change [A]                                                    |
|                                  | • Personal transfers could result from migration due to climate change [C]                           |
| Financial account                |                                                                                                   |
| Direct investment                | • Exposure to climate risks through location and activities of direct investment [B]                 |
|                                  | • Financing of climate adaptation/transition to a low-carbon economy [A]                            |
|                                  | • Impact of investments and operations of direct investment enterprises on carbon emissions [B]    |
| Portfolio investment             | • Financial risks (physical and adaptation risks) from climate change [B, such as sector of investment]. |
|                                  | • Financing of climate adaptation/transition to a low-carbon economy (type of investment, e.g., “green bonds”) [A] |
| Financial derivatives            | • Derivatives could be a tool for managing the risks of climate change [A]                           |
| Other investment                 | • Financial risks (physical and adaptation risks) from climate change [B]                          |
|                                  | • Financing of climate adaptation/transition to a low-carbon economy [Green ‘other investment’ [A]] |
| Reserve assets                   |                                                                                                   |