Table 3

Common Carbon Footprinting and Exposure Metrics

Metric	Supporting Information	
Weighted Average Carbon Intensity: Investments	*Description*	Portfolio's exposure to carbon-intensive companies, expressed in tons CO_2e/$M revenue.
	Formula	$\sum_{n}^{i}\left(\frac{\text{current value of investment}_i}{\text{current portfolio value}} \times \frac{\text{issuer's Scope 1 and Scope 2 GHG emissions}_i}{\text{issuer's \$M revenue}_i}\right)$
	Methodology	Scope 1 and Scope 2 GHG emissions are allocated based on portfolio weights (the current value of the investment relative to the current portfolio value), rather than the equity ownership approach (as described under methodology for Total Carbon Emissions). Gross values should be used.
	Key Points + / -	+ Metric can be more easily applied across asset classes since it does not rely on equity ownership approach. + The calculation of this metric is fairly simple and easy to communicate to investors. + Metric allows for portfolio decomposition and attribution analysis. – Metric is sensitive to outliers. – Using revenue (instead of physical or other metrics) to normalize the data tends to favor companies with higher pricing levels relative to their peers.
Weighted Average Carbon Intensity: Insurance Premiums[100]	*Description*	Portfolio of insurance transactions' exposure to carbon-intensive companies, expressed in tons CO_2e/$M revenue.
	Formula	$\sum_{n}^{i}\left(\frac{\text{gross written premium of insurance transaction}}{\text{total GWP volume of insurance portfolio}} \times \frac{\text{insured's Scope 1 and Scope 2 GHG emissions}_i}{\text{insured's \$M revenue}_i}\right)$
	Methodology	The methodology measures the intensity of a portfolio of insurance transactions using carbon intensity information for each legal entity or company (commercial insurance) or individual insured (personal lines insurance) should be used. Where GHG emissions on a company level are not available, industry or country information can be used. Where gross written premium information is not available, information on capital required, capacity, or expected loss can be used.
	Key Points + / -	+ Metric can be more easily applied across asset classes since it does not rely on equity ownership approach. - Using revenue to normalize the data tends to favor companies with higher pricing levels relative to their peers.
Total Carbon Emissions	*Description*	The absolute greenhouse gas emissions associated with a portfolio, expressed in tons CO_2e.
	Formula	$\sum_{n}^{i}\left(\frac{\text{current value of investment}_i}{\text{issuer's market capitalization}_i} \times \text{issuer's Scope 1 and Scope 2 GHG emissions}_i\right)$
	Methodology	Scope 1 and Scope 2 GHG emissions are allocated to investors based on an equity ownership approach. Under this approach, if an investor owns 5 percent of a company's total market capitalization, then the investor owns 5 percent of the company as well as 5 percent of the company's GHG (or carbon) emissions. While this metric is generally used for public equities, it can be used for other asset classes by allocating GHG emissions across the total capital structure of the investee (debt and equity).

[100] Source: CRO Forum, "Carbon footprinting methodology for underwriting portfolios," May 1 2020.

Table 3

Common Carbon Footprinting and Exposure Metrics *(continued)*

Metric	Supporting Information	
Total Carbon Emissions	*Key Points*	+ Metric may be used to communicate the carbon footprint of a portfolio consistent with the GHG protocol. + Metric may be used to track changes in GHG emissions in a portfolio. + Metric allows for portfolio decomposition and attribution analysis. – Metric is generally not used to compare portfolios because the data are not normalized. – Changes in underlying companies' market capitalization can be misinterpreted.
Carbon Footprint	*Description*	Total carbon emissions for a portfolio normalized by the market value of the portfolio, expressed in tons CO_2e/$M invested.
	Formula	$\frac{\sum_{n}^{i}\left(\frac{\text{current value of investment}_i}{\text{issuer's market capitalization}_i} \times \text{issuer's Scope 1 and Scope 2 GHG emissions}_i\right)}{\text{current portfolio value (\$M)}}$
	Methodology	Scope 1 and Scope 2 GHG emissions are allocated to investors based on an equity ownership approach as described under methodology for Total Carbon Emissions. The current portfolio value is used to normalize the data.
	Key Points *+ / -*	+ Metric may be used to compare portfolios to one another and/or to a benchmark. + Using the portfolio market value to normalize data is fairly intuitive to investors. + Metric allows for portfolio decomposition and attribution analysis. – Metric does not take into account differences in the size of companies (e.g., does not consider the carbon efficiency of companies). – Changes in underlying companies' market capitalization can be misinterpreted.
Carbon Intensity	*Description*	Volume of carbon emissions per million dollars of revenue (carbon efficiency of a portfolio), expressed in tons CO_2e/$M revenue.
	Formula	$\frac{\sum_{n}^{i}\left(\frac{\text{current value of investment}_i}{\text{issuer's market capitalization}_i} \times \text{issuer's Scope 1 and Scope 2 GHG emissions}_i\right)}{\sum_{n}^{i}\left(\frac{\text{current value of investment}_i}{\text{issuer's market capitalization}_i} \times \text{issuer's \$M revenue}_i\right)}$
	Methodology	Scope 1 and Scope 2 GHG emissions are allocated to investors based on an equity ownership approach as described under methodology for Total Carbon Emissions. The company's (or issuer's) revenue is used to adjust for company size to provide a measurement of the efficiency of output.
	Key Points *+ / -*	+ Metric may be used to compare portfolios to one another and/or to a benchmark. + Metric takes into account differences in the size of companies (e.g., considers the carbon efficiency of companies). + Metric allows for portfolio decomposition and attribution analysis. – The calculation of this metric is somewhat complex and may be difficult to communicate. – Changes in underlying companies' market capitalization can be misinterpreted.

Table 3

Common Carbon Footprinting and Exposure Metrics *(continued)*

Metric	Supporting Information	
Exposure to Carbon-Related Assets	*Description*	The amount or percentage of carbon-related assets[101] in the portfolio, expressed in $M or percentage of the current portfolio value.
	Formula for Amount	$\sum$ *$M current value of investments in carbon-related assets*
	Formula for Percentage	$\frac{\sum \text{current value of investments in carbon-related assets}}{\text{current portfolio value}} \times 100$
	Methodology	This metric focuses on a portfolio's exposure to sectors and industries considered the most GHG emissions intensive. Gross values should be used.
	Key Points + / -	+ Metric can be applied across asset classes and does not rely on underlying companies' Scope 1 and Scope 2 GHG emissions. – Metric does not provide information on sectors or industries other than those included in the definition of carbon-related assets (i.e., energy and utilities sectors under the Global Industry Classification Standard excluding water utilities and independent power and renewable electricity producer industries).

Note: The term "portfolio" used in the table above is defined as "fund or investment strategy" for asset owners, "product or investment strategy" for asset managers, and "lending and other financial intermediary business activities" for banks.

[101] Recognizing that the term "carbon-related assets" is not well defined, the Task Force encourages banks to use a consistent definition to support comparability. For purposes of disclosing information on significant concentrations of credit exposure to carbon-related assets under this framework, the Task Force suggests banks define carbon-related assets as those assets tied to the four non-financial groups identified by the Task Force in its 2017 report (see Table 4, p. 56). There may be industries or sub-industries that are appropriate to exclude, such as water utilities and independent power and renewable electricity producer industries. Banks should describe which industries they include.