

THE BIG SMOKE

THE GLOBAL EMISSIONS OF THE UK FINANCIAL SECTOR

GREENPEACE



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ACRONYMS AND ABBREVIATIONS

AUM	Assets under management
CDP	Carbon Disclosure Project
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
FCA	Financial Conduct Authority
FI	Financial institution
GHG	greenhouse gas
GICS	Global Industry Classification Standard
G-SII	Global Systemically Important Insurers
M&A	Mergers and acquisitions
OECD	Organisation for Economic Co-operation and Development
O-SII	Other systemically important institutions
PCAF	Partnership for Carbon Accounting Financials
PRA	Prudential Regulatory Authority
TCFD	Task Force on Climate-related Financial Disclosures
WACI	Weighted Average Carbon Intensity

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The estimates of financed emissions in this analysis produced using publicly available information should not be seen as conclusive or final, nor do they cover the full range of activities by the selected institutions. The figures presented in this report should be seen as indicative estimates only.

The opinions expressed in this report are based on the documents referenced in the endnotes. We encourage readers to read those documents. The information in this report, or on which this report is based, has been obtained from sources that the authors believe to be reliable and accurate. However, no representation or warranty, express or implied, is made as to the accuracy or completeness of any information obtained from third parties.

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1. EXECUTIVE SUMMARY

The finance sector will play a vital role in determining whether the world will successfully transition towards a low-carbon, sustainable economy. As an important stakeholder to the world's economic actors, the finance industry can exert enormous influence by aligning investment and lending activities with the goals of the Paris Agreement and engaging their clients and investee companies to do the same. While the UK financial sector's national importance¹ and its international reach² is championed by the government and regulators, its ongoing role in financing the climate and nature emergency is not a matter of corresponding regulatory focus.

To date, neither the government nor relevant regulators have taken adequate action to address the global emissions financed and enabled by UK private financial institutions (FIs) and to ensure that they align their activities with the country's climate ambitions and the goals of the Paris Agreement.

This report provides an indicative, up-to-date assessment of the size of the global carbon footprint that is financed by some of the largest and most systemically important entities in the UK's financial sector, in other words, the UK's 'financed emissions'.³ The analysis was undertaken using the market leading carbon accounting methodology from the Partnership for Carbon Accounting Financials (PCAF)³ which is underpinned by the greenhouse gas (GHG) protocol.⁴ This approach calculates the indirect (Scope 3) emissions of the reporting FI, currently covering the borrowers' and investees' total (absolute) Scope 1 and Scope 2 emissions (e.g. operations and offices) across a range of economic sectors.

The analysis was based on a sample of selected FIs to give an indicative representation of the UK financial sector, focusing on banks and asset managers (see Annex 1). The fifteen banks were selected based on the Bank of England's domestically significant systemic institution list from 2019, that evaluated banks based on core determining criteria (e.g. size, connectedness, economic importance). The asset managers are the ten which have the largest assets under management (AUM), are headquartered in the UK and made public disclosures enabling analysis. It is the first time we are aware of that such a holistic analysis has been completed based on data publicly disclosed by FIs using this approach.

Our results show estimated carbon emissions associated with the FIs analysed amounted to 805 million tonnes CO₂e (Banks: 415 million tonnes CO₂e Asset Managers: 390 million tonnes CO₂e), based on year-end disclosures from 2019. This is almost 1.8 times the UK's domestically produced emissions. If the FIs in this study were a country, they would have the 9th largest emissions in the world – larger than Germany's (776 million tonnes CO₂e) and

Canada's domestic emissions (763 million tonnes CO₂e).⁵

The results demonstrate that the UK's financed emissions are extensive, likely representing one of the UK's most significant contributions to climate change. Yet, the indicative figures generated by this analysis should not be seen as conclusive or final and are likely a significant underestimate of the total UK financed emissions.

PCAF's methodology does not currently include the emissions associated with insurance underwriting, the securities underwriting and advisory services of banks, or those in asset management assets classes other than fixed income and equity. This meant that while the asset managers included in this analysis together manage 86% of total UK AUM, only 39% was included in the indicative calculation. Insurers were excluded due to the lack of public disclosure and external methodology to calculate their carbon emissions. Given the London market for (re) insurance is the largest globally by some margin,⁶ the carbon emissions enabled by insurance underwriting are anticipated to be substantial.



1.8x UK'S DOMESTICALLY PRODUCED EMISSIONS



a Financed emissions are the greenhouse gas emissions associated with a financial institutions' loans and investments in a reporting year.

b While some of the borrowers' and investee companies' Scope 3 emissions may be included within another companies' direct emissions, it is not possible to determine this with certainty given the international nature of UK FIs' loans and investments. Even if this determination could be made, certain borrower and investee company Scope 3 emissions would not be included in the Scope 1 and Scope 2 emissions of other companies – most notably regarding the consumption of fossil fuels.

PCAF's methodology also does not yet enable the incorporation of Scope 3 emissions of any underlying loan or investment in part due to substantial variation in the comparability, coverage and reliability of data. The exclusion of Scope 3 likely results in the overall indicative figure for this assessment being an underestimate and will result in a significant underestimate of the financed emissions in individual industrial sectors. This is particularly the case for those industries where Scope 3 dominates overall carbon footprint,⁶ for example, according to MSCI the Scope 3 emissions of the integrated oil and gas industry are more than six times the level of its Scope 1 and 2 emissions.⁷

The exclusions of key financing activities and Scope 3 from even the leading carbon accounting methodologies present FIs, regulators and governments with a misleadingly positive assessment of their financed emissions and climate impact. Unless such gaps are closed when assessing financed emissions, the true extent of FIs exposure to carbon, and corresponding climate risk, will continue to be misjudged and underestimated.

These findings show that the government and regulators must not assume that a combination of voluntary high level 'net-zero' pledges and increasing disclosure of climate risk by FIs will drive capital allocation at the scale and pace required to meet the climate emergency, without further regulatory intervention. Mandatory climate risk disclosure must be accompanied by mandatory transition plans to align financing activities with the goals of the Paris Agreement including the aim of limiting global temperature increase to 1.5°C above pre-industrial levels (the Paris Goals).

While disclosure is an important first step, elevating it to the status of regulatory 'silver bullet' is a flawed approach to climate change mitigation. It limits the consideration of climate change to the risks posed to the finance sector while ignoring the significant negative climate impacts enabled and financed by the industry. Fundamentally, it mistakes corporate climate risk management with alignment with climate outcomes, and overlooks larger macroeconomic systemic risks created by climate change against which investors cannot ultimately hedge.

Government has a clear role in setting a legislative requirement that all regulated UK FIs adopt and implement a transition plan

MANDATORY CLIMATE RISK DISCLOSURE MUST BE ACCOMPANIED BY MANDATORY TRANSITION PLANS TO ALIGN FINANCING ACTIVITIES WITH THE GOALS OF THE PARIS AGREEMENT INCLUDING THE AIM OF LIMITING GLOBAL TEMPERATURE INCREASE TO 1.5°C ABOVE PRE-INDUSTRIAL LEVELS.

that aligns with the Paris Goals. Regulators can then set out "a clear framework for what alignment with Paris means in practice for FIs, and set out the consequences for failing to meet the requirements".⁸ In doing so they can ensure that commitments to Paris Goals are sufficiently ambitious and robust while providing an essential evaluation and enforcement mechanism. They can also address gaps in data availability and accelerate the development of key methodologies, supporting FIs through the implementation process to meet their current high-level commitments. COP26 provides a unique opportunity for the UK to accelerate the adoption of financial practices that actively support the paradigm shift towards net zero and Paris alignment and begin to tackle globally financed emissions. Prior to the summit, we recommend that the UK government commit to the following measures:

- **Legislation to require all UK regulated FIs to adopt and implement a transition plan that aligns with the 1.5°C goal of the Paris Agreement, the provisions of which should be guided by regulation, that is both flexible to evolving best practices for assessing alignment and in line with latest science.**
- **The development of specific requirements⁹ to be included within those transition plans and their supervision should be undertaken by the relevant regulatory and supervisory bodies.**
- **The transition plan would apply to all financing activities (lending, underwriting, investing, advisory services, and insurance underwriting).**
- **The transition plan would include interim emissions reductions targets that are in line with 1.5°C pathways**

with low or no temperature overshoot and not reliant on carbon dioxide removal and to be reported on an annual basis.

- **The UK government should use its G7 and COP 26 Presidencies to encourage other countries to adopt this approach, by spearheading leadership towards the alignment of private finance sector with Paris Goals and creating international venues and mechanisms to take this commitment forward.**
- **The UK government should support the harmonisation and consistent implementation of an industrial classification across all reporting under Pillar 3 of the Basel Framework to increase transparency, comparability and granularity of disclosed data.**
- **The Treasury should report to parliament each year on whether financed carbon emissions for the UK regulated FIs has increased or decreased and whether this poses any systemic financial risks for the UK financial system.**

In line with its updated mandate on climate change, we also recommend that the Bank of England:

- **Ensure that climate-related risks and impacts are integrated into asset purchase schemes and the collateral framework; and**
- **Adjust the macroprudential regulatory framework so that climate-related risks and impacts are more accurately reflected in capital liquidity rules.**

2. INTRODUCTION

The finance sector will play a vital role in determining whether the world will successfully transition towards a low-carbon, sustainable economy, through its financing practices, as a major investor in companies worldwide, and as an insurance underwriter.

Spurred by the work of the Task Force on Climate-related Financial Disclosures (TCFD)¹⁰ and the Network of Central Banks and Supervisors for Greening the Financial System,¹¹ there has been increasing recognition in recent years of the risks posed by climate change to the financial sector – both credit risk from transition, physical, and legal climate risks and broader risks to overall financial stability.

However, this analysis and the resulting climate risk management by FIs has been divorced from an assessment and mitigation of the negative climate impacts caused by them. Accordingly, the financial system, and the wider economy it serves, now edges closer to the possibility of a failed transition and the resulting systemic financial impacts through breakdowns of planetary systems and overshooting global temperature goals such as limiting global temperature increase to 1.5°C above pre-industrial levels (the Paris Goals).

As a result, there are increasing expectations on FIs to move beyond climate-related risk management and disclosure and to align activities more strategically with global commitments such as the Paris Goals and nature protection.

External stakeholders, such as customers and civil society groups, are increasingly interested in the carbon emissions associated with the financial sector's lending and investments. FIs' self-disclosure of carbon emissions are improving, particularly since the launch of the TCFD in 2017. However,



it remains challenging to get full visibility on lending and investing related carbon emissions from the outside looking into FIs. This is due to a number of reasons, including data limitations and lack of calculation methodologies. In this report, an indicative analysis has been completed based on the latest comparable information, close to four years after the launch of TCFD.

The main aim of the research project is to provide an indicative and up-to-date assessment of the size of the global carbon footprint that is financed through the UK's financial sector, based solely on publicly available data. Although evaluated on an indicative basis, this analysis aims to provide a better understanding of the carbon emissions financed by the UK financial sector, via an analysis of large and systemically important institutions. We hope to shed light

on the exposure of the finance sector, based on the data key actors have made publicly available, to promote action on climate by the UK government and FIs in the lead up to COP26.

While the UK government has further raised ambition with its recent target to reduce emissions by 78% in 2035 and taken a leadership role on public finance, to date, neither the UK government nor relevant regulators have taken adequate action to ensure UK FIs align their activities with the goals of the Paris Agreement on climate change and the UK's own net zero target. The UK, as the host of COP26 in 2021 and through its international and sizable financial sector, is central to accelerating alignment of the global finance system with the Paris Agreement.

3. APPROACH AND SCOPE

3.1. APPROACH

Carbon accounting is the process of consistently measuring, tracking and reporting GHGs generated, avoided or removed by an entity over time. The Global GHG Accounting and Reporting Standard (the “Standard”) devised by the Partnership for Carbon Accounting Financials (PCAF) is the most established of the carbon accounting methodologies. To estimate emissions from lending and investment activities by the selected entities, the Research Provider followed and applied the methodological principles of the GHG Protocol’s Category 15: Investments¹² and the application guidelines provided by the PCAF.¹³

Financial data was sourced from public disclosures such as annual reports, regulatory disclosures, and includes data such as portfolio positions, loan transactions and the balance sheet. The Research Provider assessed the level of disclosure of ten of the largest asset managers in order to identify disclosure related to listed equity or fixed income. All ten of the asset managers were found to disclose either their positions for a number of equity and fixed income funds, or disclosed emissions data for a portion of their AUM as part of their annual disclosure to the Montreal Pledge, CDP, or TCFD. The calculated emissions for disclosed funds were used as proxies for the remaining value of AUM in equity and fixed income, enabling an indication of total absolute emissions financed by the asset manager.

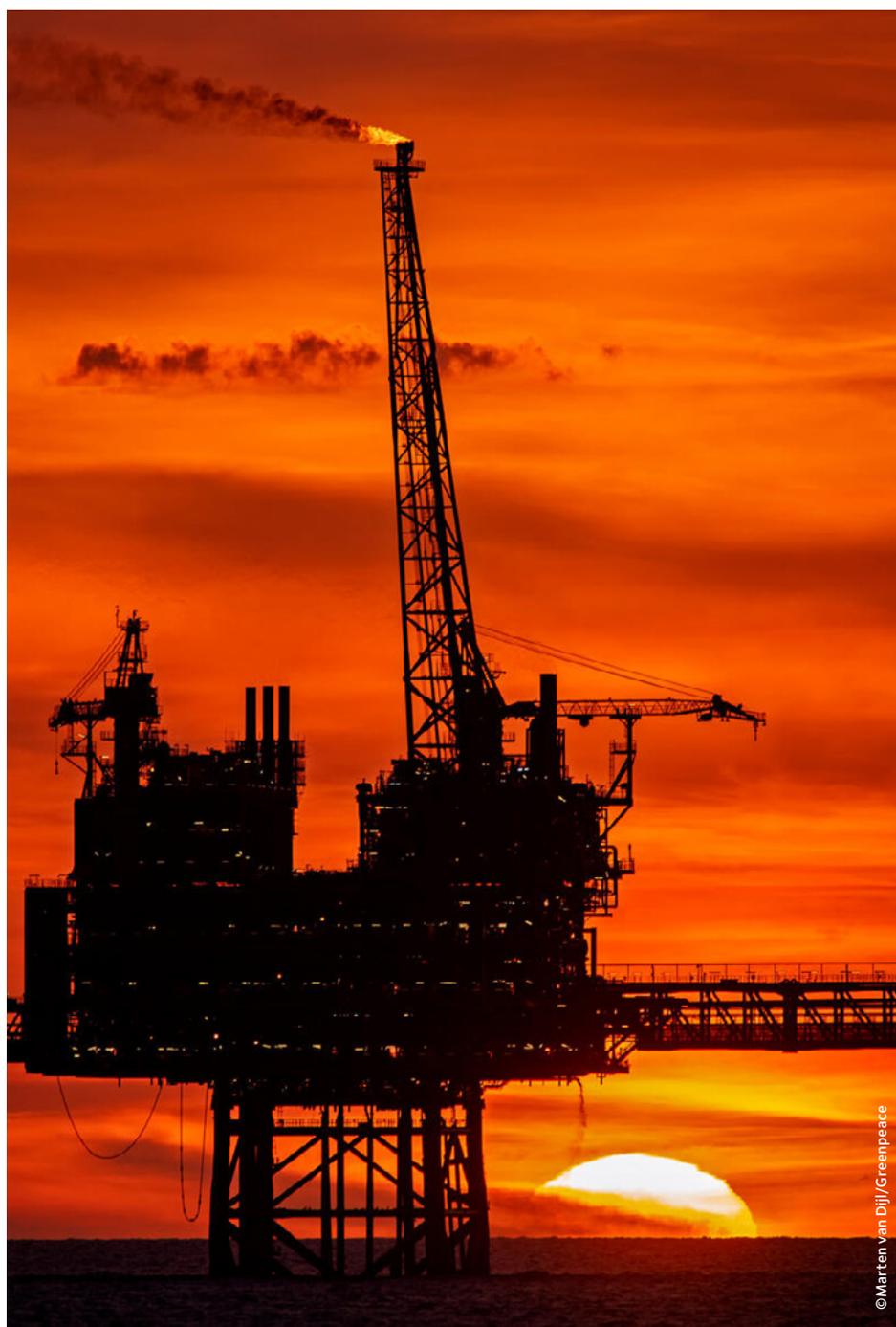
Reported emissions data was sourced from company disclosures in sustainability reports, as well as disclosure to mechanisms such as CDP¹⁴ and TCFD. The assessment covers financing to 23 sub-industries, from energy to IT and industrials. Full details of the methodology and its limitations are set out in Sections 7 and 8.

The analysis was completed using the year-end disclosures from 2019, as at the

time of writing not all FIs had published their more up-to-date annual reports. A high-level sample check was completed to compare to more recent publications to ensure substantial changes (i.e., +/- 25% by sector classification) had not taken place throughout 2020.

It is worth noting that the approach taken by this analysis will differ from prior efforts

to calculate financed emissions of banks or asset managers due to the scope of the assessment, which does not focus only on carbon intensive sectors but expands across several asset classes, industries and geographies. As a result, the level of granularity of the calculations and values can differ substantially from previous efforts as it is more holistic in nature covering all sectors as opposed to just fossil fuels.



3.2. SCOPE

3.2.1. Emissions

In order to assess the UK finance sector’s emissions, the Research Provider had to first determine which FIs and which of the emissions within the industry’s complex chain of operations would be included in this analysis.

As defined by the GHG protocol, direct GHG emissions are those stemming from sources owned or controlled by the reporting company. These emissions are categorised as Scope 1 emissions.

Indirect GHG emissions are emissions that are a consequence of the activities of the reporting entity, but which occur at sources owned or controlled by another company.

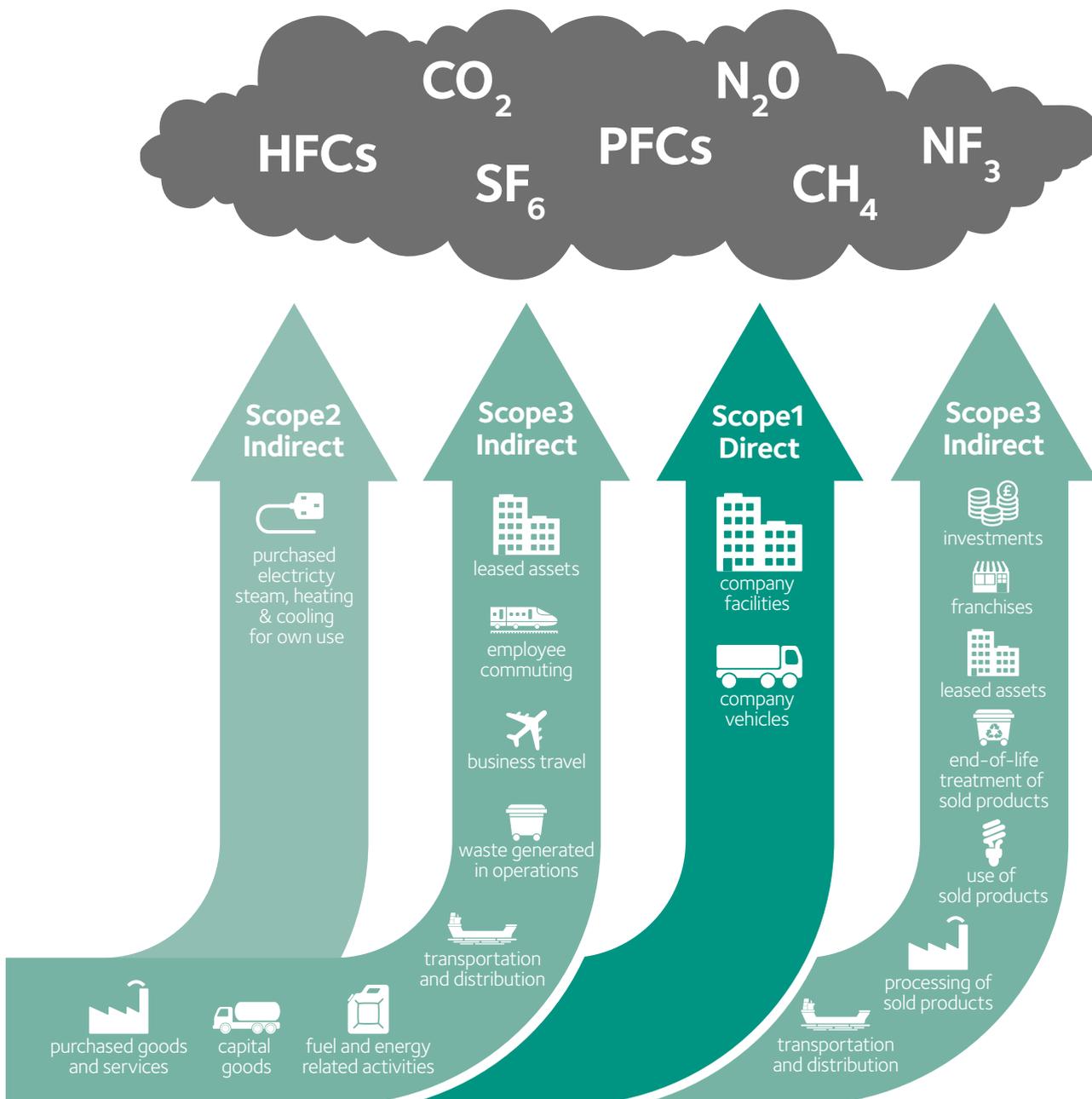
These are categorised into two scopes:

- Scope 2: Indirect GHG emissions from consumption of purchased electricity, heat or steam.
- Scope 3: Other indirect emissions, such as the extraction and production of purchased materials and fuels, outsourced activities and investments.

For the purpose of this work and as defined in the Standard, “financed emissions” are the GHG emissions financed by the loans and investments of FIs. Furthermore, as per the Standard, the assessment covers the borrowers’ and investees’ absolute Scope 1 and Scope 2 emissions across all sectors.

The work conducted does not incorporate Scope 3 emissions of any loan or investment because to date, as noted by the Standard, there is substantial variation in the comparability, coverage, transparency and reliability of Scope 3 data per sector and data source. It is worth noting that the Standard outlines a phased-in approach to Scope 3 reporting, requiring the energy and mining sectors to report Scope 3 emissions from 2021 as a starting point, with all sectors reporting from 2026 onwards as per the approach defined by the EU Technical Expert Group. However, this assessment uses data and public disclosures from 2019, where no scope 3 reporting was required for any industrial sector.

Figure 1: Overview of GHG Protocol scopes and emissions across the value chain





3.2.2. Financial Institutions in the UK Finance Sector

The UK is one of the world's leading financial centres. The UK finance sector comprises a number of sub-sectors including banking, insurance & reinsurance, fund management, commodities trading and Fintech. Likewise, it comprises multiple actors of varying sizes from multinational conglomerates to independent advisors. For the purposes of this indicative analysis, the Research Provider identified the main types of FIs in the UK, based on importance and size, which represent a significant selection of the UK finance sector as a whole.

Three types of FI were included in the initial definition of 'the UK's financial sector': banks, asset managers and insurers. Due to the lack of public disclosure and external methodology to calculate the carbon emissions related to insurers, following a detailed investigation, this type of FI has not been included in the indicative estimate. Given the London Market for (re) insurance is the largest globally by some margin, the carbon emissions enabled by insurance underwriting are anticipated

to be substantial.¹⁵ Despite the resulting underestimate of financed emissions (due in part by methodological limitations, see section 5.2), we believe the analysis provides an insightful assessment of the emissions financed by the selected lending and investing activity demonstrating the exposure of and contribution by UK FIs to climate change.

Where an entity may fall under more than one FI type the Research Provider assessed data availability to avoid duplication. For the purposes of the estimation, all of the global emissions (that are in scope under Section 3.2.1) associated with a UK headquartered FI have been included in the scope of the calculation. This is the same approach used by the financial supervisors. For example, the Prudential Regulatory Authority in the UK supervises the bank HSBC Holdings plc across its group globally. In the case of a subsidiary of a non-UK headquartered group, such as the UK based entity of Credit Suisse International, the global emissions of the regulated UK subsidiary were calculated for the scope of this report. Again, this is the same approach as regulatory supervisors.

3.2.3. Banks

The selection of UK-incorporated banks and UK entities of internationally headquartered banks is based on the list of institutions identified as Other Systemically Important Institutions (O-SII) by the Prudential Regulatory Authority – Bank of England. The core set of criteria behind the underlying scoring were as follows¹⁶:

- a) size;
- b) importance for the economy e.g. capturing substitutability/financial institution infrastructure;
- c) complexity — including the additional complexities from cross-border activity;
- d) interconnectedness of the institution or (sub-)group with the financial system.

3.2.4. Asset managers

The selection of asset managers,^c which encompass entities incorporated in the UK and subsidiaries with UK presence, is based on their size of operations and market capitalisation on the London Stock Exchange. To ensure a representative coverage, the Research Provider compared our list of asset managers with a report from the City of London Corporation report.¹⁷ It stated AUM from the UK was USD 6.9tn in 2018.¹⁸ Over the prior five years these figures have not changed by more than 5%. There are many potential comparative numbers – this was selected as it has been used recently by the industry itself. However, the value of equity and fixed income AUM assessed in this work represents 39% of the total UK AUM. Data and methodological limitations for other asset classes within existing carbon accounting methodologies reduced the coverage of the assessment.

3.2.5. Additional comments on entity selection

Pension schemes were excluded, as there could be double counting with asset managers.

INSURANCE

Three types of FI were included in the initial definition of ‘the UK’s financial sector’; banks, asset managers and insurers. According to an 2019 ABI report, the UK insurance market is the fourth largest in the world, and the largest in Europe.¹⁹ PCAF does not provide guidance to assess emissions associated with insurance premiums underwritten. Due to the lack of public disclosure and external methodology to calculate the carbon emissions related to insurers, following a detailed investigation this type of FI has not been included in the estimate. However, the carbon emissions associated with insurance underwriting would be anticipated to be extensive. The London Market Group reported that in 2018 the combined London insurance market accounted for 55% of global energy sector insurance premiums.²⁰ Insurance companies are in a unique position to accelerate the transition to a 100% renewable energy future. As risk managers they play a silent but essential role in deciding which types of project can be built and operated in a modern society. Without their insurance, almost no new coal mines, oil pipelines and power plants can be built, and most existing projects will have to be phased out.²¹ Excluding such financial activities from the calculation of ‘financed emissions’ leads to an underestimate of the contribution of key financial actors such as insurance companies to the climate emergency.

Following a review and extensive research relating to the country of domicile for global asset managers including Blackrock, State Street and Vanguard, the Research Provider was unable to identify information related to the UK entities of these asset managers, nor data on the positions held by the funds

managed by the UK entities. As a result, these asset managers were not included in the assessment, given that accounting for their global emissions would incorrectly attribute emissions to the UK financial sector, which cannot be verified.

^c It is worth noting that, unlike banks and insurers, a list of systemically important institutions is not available for asset managers which limits our understanding of the significance of the selected asset managers in the UK finance sector.

4. KEY FINDINGS

4.1. THE UK FINANCIAL SECTOR – A HIGH-CARBON SECTOR

Our results show estimated carbon emissions associated with the FIs analysed amounted to 805 million tonnes CO₂e (Banks: 415 million tonnes CO₂e Asset Managers: 390 million tonnes CO₂e), based on year-end disclosures from 2019. If the FIs in this study were a country, they would have the 9th largest emissions in the world – larger than Germany's (776 million tonnes CO₂e) and Canada's domestic emissions (763 million tonnes CO₂e).²²

Although not like-for-like, for a sense of scale it's worth noting that this estimate of the UK's financed emissions based on the sample in this study is almost 1.8 times the entire UK's net emissions account for 2019 of 455 million tonnes (CO₂e).²³

4.2. LIKELY AN UNDERESTIMATE OF FINANCED EMISSIONS

The analysis was carried out as much as possible in alignment with the guidelines set by PCAF, the most established of the carbon accounting methodologies. Although PCAF has provided a global standard with options to account for financed emissions, the Standard still has gaps for both banks and insurers.

Existing carbon accounting methodologies note that capital providers and owners generate financed emissions, but exclude emissions associated with service providers. Guidance on accounting for service provision, such as insurance and securities underwriting and M&A advisory, is not provided. This is important as underwriting of securities is increasingly the mechanism



1.8x UK'S DOMESTICALLY PRODUCED EMISSIONS



by which banks support high-carbon industries. The Rainforest Action Network found that 65% of the 2020 fossil fuel financing they identified was provided through such services.²⁴ Similarly, the emissions associated with key asset classes for asset managers, such as cash, currency and derivatives, cannot be captured under available methodologies. In the context of this analysis, this restricts us to an assessment of only 39% of the total of UK AUM. Taken together these exclusions create a substantial limitation as key activities for banks, asset managers, and insurers could not be assessed.

Furthermore, as noted the Standard covers only the emissions associated with absolute Scope 1 and Scope 2 emissions across all sectors. Therefore, analysis being carried out by the finance sector does not incorporate Scope 3 emissions of any loan or investment. As noted by the Standard, there is substantial variation in the comparability, coverage, transparency and reliability of Scope 3 data per sector and data source.

The exclusion of Scope 3 likely results in the overall indicative figure for this assessment being underestimated and a significant

underestimate arising in the case of calculating financed emissions for individual industries.^d This is particularly the case for sectors such as energy, mining, utilities, construction, materials and transportation, where not accounting for the indirect emissions substantially underestimates the emissions profile of the activities owned and operated by loanees and investees that are active in these sectors might result in missing the majority of emissions. For example, according to MSCI the Scope 3 emissions of the integrated oil and gas industry (measured by the constituents of the MSCI ACWI Index) are more than six times the level of its Scope 1 and 2 emissions.²⁵

Exclusion of key financing activities and scope 3 from even the leading carbon accounting methodologies present FIs, regulators and government with a misleadingly positive assessment of their financed emissions and climate impact. Until such gaps are closed when assessing financed emissions the true extent of FIs' exposure to and contribution to climate risk will be misjudged and underestimated.

^d While some of the borrowers' and investee companies' Scope 3 emissions may be included within another companies' direct emissions, it is not possible to determine this with certainty given the international nature of UK FIs' loans and investments. Even if this determination could be made, certain borrower and investee company Scope 3 emissions would not be included in the Scope 1 and Scope 2 emissions of other companies - most notably regarding the consumption of fossil fuels.

4.3. LACK OF TRANSPARENCY AND COMPARABLE DATA

Reports issued under the Pillar 3 of the Basel Consolidated Framework²⁶ were heavily used for the analysis, specifically industry classification tables. Pillar 3 was further developed by regulators after the financial crisis of 2007-9, to enable greater transparency by banks. However, the manner in which industry classification and aggregation was conducted varied per institution which created barriers to the analysis (detailed in Section 8). For example, three banks reported and categorised transport in three different formats: “Transport, utilities and storage”; “Transport, distribution and hotels;” and “Transport and storage”. As can be evidenced, transportation activities are categorised alongside other activities. In the case of JP Morgan, for instance, two carbon intensive sectors such as transport and utilities are grouped together with storage, with no further granularity provided, leaving the reader to assume the share of each activity as a proportion of the total loan exposure for this category. A similar case was evidenced for several other categories.

Another example is the aggregation by some banks of credit exposure for ‘Agriculture, fishing and transport’. These inherently different activities would generally require three separate emission factors per type of agriculture and transport, for example. In addition, the share of credit exposure for each of the three activities is not disclosed, requiring assumptions on how to distribute these accordingly.

This issue did not arise to the same extent with asset managers where there is a more standardised system of industrial classification.

Furthermore several industrial activities are capable of being grouped under the uninformative categorisation ‘Other’, which for some banks could encompass numerous activities, including mortgages and exposure to carbon-intensive activities. The Research Provider conducted extensive research to identify solutions to enhance the transparency of this ‘Other’ category further, with limited success. This form of grouping accounted for approx. 20% of total credit exposure.

Feedback received from banks during this research, focused on the lack of clarity surrounding granularity of the data used, industrial classification, and attribution. However, the high-level nature of the data disclosed by banks makes precise comparable emissions estimates highly challenging. This lack of comparability and granularity within Pillar 3 reporting is a significant risk as these disclosures are currently being relied upon as the driving force for capital reallocation in line with Paris Goals.

A harmonised industrial classification and consistent implementation should be introduced across all reporting under Pillar 3 of the Basel Framework to overcome these challenges.



5. THE ROLE OF REGULATION TO ALIGN FINANCING WITH THE PARIS GOALS

The finance sector drives the nature of global economic activity via its capital allocation decisions. As an influential stakeholder, the finance industry can exert enormous influence not just by aligning their own activities with the Paris Goals but by pressing their clients and investee companies to do likewise.

The analysis provided in this study demonstrates that the UK finance sector should be considered a ‘high-carbon sector’ –in particular given that its carbon emissions outweigh that of UK economy. While the UK financial sector’s national importance²⁷ and its international reach²⁸ is championed by the government and regulators, its ongoing role in financing and profiting from the climate and nature emergency is not a matter of corresponding regulatory priority.

The current focus of assessing the risk to the finance sector from climate change must be accompanied by an assessment of and plan to address the industry’s significant contribution to climate change. The limitations within even the leading carbon accounting methodologies highlight the risk of focusing solely on measurement and disclosure frameworks rather than on rapidly realigning core financing activities with a 1.5°C outcome. The government and regulators must not assume a combination of voluntary high-level ‘net-zero by 2050’ pledges by FIs and disclosure of climate risk by companies will sufficiently drive capital allocation in line with the Paris Goals absent any further regulatory requirements. This is evidenced by research showing that since the signing of the Paris Agreement, the world’s largest 60 banks have provided USD\$3.8trn to the fossil fuel industry.²⁹ Leading FIs also continue to be linked to financing activities contributing to deforestation endangering the world’s carbon sinks.³⁰



Against this context, there is a clear role for regulators, in supporting the finance sector in overcoming barriers and accelerating its alignment with the goals of the Paris Agreement and the UK’s own net zero ambitions. Further regulation of FIs will likely have a transformative cascading impact onto other sectors and companies across the world as FIs step up their demands on clients and investee companies. In that way,

just as the finance flowing from the City of London fuels the global economy, so too can UK regulation drive global emissions reductions. Governments should support the financial sector in the implementation of its obligations by introducing such additional policy measures as are necessary to ensure FIs’ efforts are not undermined by lack of data provision or other actions by other companies.

THE CURRENT FOCUS OF ASSESSING THE RISK TO THE FINANCE SECTOR FROM CLIMATE CHANGE MUST BE ACCOMPANIED BY AN ASSESSMENT OF AND PLAN TO ADDRESS THE INDUSTRY’S SIGNIFICANT CONTRIBUTION TO CLIMATE CHANGE.

5.1. BEYOND DISCLOSURE TO STRATEGIC ALIGNMENT

In March 2021, the UK government announced a consultation on a proposal to require large private and listed companies to disclose climate risks as soon as 2022 which would make the UK the first G20 country to mandate implementation of the TCFD. The government, in the consultation paper, recognises the opportunity for the UK leadership as both G7 and COP 26 president in 2021 “for collective action to address the most pressing challenge of our time, and to encourage countries across the globe to match our ambition.”³¹ It appears that the UK government currently limits its ambition for collective action in the financial regulatory space to encouraging other countries to follow suit on mandatory TCFD implementation.

While disclosure through frameworks like TCFD is an important first step, it should not be mistaken for actions whose aim is the alignment of activities with climate outcomes such as the 1.5°C temperature goal. Climate risk management may reduce a company’s or FI’s risks arising from the transition to a low carbon economy but does not necessarily result in actions that reduce emissions in line with the science.³² Nor does the biggest financial risk from climate change arise from losses on individual companies or even industrial sectors but rather from the macroeconomic systemic risks against which one cannot hedge.³³

Rooted firmly in the ideas of market efficiency and that ‘what’s measured is managed’, the TCFD framework requires companies to report on the risks and opportunities it faces from climate risk and explain how its governance structures and strategic planning seek to identify and manage them. The focus on disclosure is driven by the theory that if comparable and detailed information is available across the economy, the market will appropriately price the climate risks and opportunities and corporate and investment capital will flow accordingly.

While disclosure of material risks including climate risks is important for the proper functioning of the financial markets, a lack of information is not the sole or even primary cause of the market’s continued failure to address climate change – identified over a decade ago as the greatest market failure in history.³⁴ Problems of short-termism, regulatory capture, misinterpretations of fiduciary duty, a failure to act as universal



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owners, and perverse incentives are repeatedly diagnosed but with no regulatory treatment prescribed.³⁵ As has been pointed out by academics, “While TCFD can influence the nature of the information disclosed, it has no direct influence over the degree to which, and how appropriately, such information is used. The ability and incentive of users to interpret and apply climate-related disclosures, and the mechanisms available to them for doing so, are influenced by a much broader set of societal and economic challenges than those encompassed within the direct influence of the TCFD.”³⁶

Evidence to date suggests that investors are not integrating existing voluntary TCFD disclosures into their decision-making. According to an HSBC survey of 2000 investors, just 10 per cent considered the disclosures as a relevant source of information. Daniel Klier, the then global head of sustainable finance at HSBC, put it bluntly when he said: “We disclosed that 21 per cent of our balance sheet is subject to climate risk, but we don’t get investor queries on that, I could count them on a single hand.”³⁷

As the timeframe for effective climate action shortens with significant global emissions cuts needed this decade, it is unacceptable to treat mandatory risk disclosure as the primary regulatory intervention to drive corporate action on climate.

As Dr Ben Caldecott has noted, “instead of incidentally contributing to alignment with climate outcomes we need specific ways of dealing with and contributing to the challenge of alignment.”³⁸ The Advisory Group on Finance to the Committee on Climate Change has argued similarly that “the UK must go beyond managing climate risk and focus on net-zero as a key goal”.³⁹ Mandatory climate risk disclosure must be accompanied by mandatory transition plans that align with the Paris Goals. Information can serve as a means of assessing the viability and merit of the presented strategy. But disclosure of climate risk should not be conflated – and cannot be confused – with adopting a new strategy that aligns with a climate outcome.

5.2. VOLUNTARY EFFORTS ARE NOT A SUBSTITUTE FOR GOVERNMENT ACTION

Since 2020, there has been a mass – though not universal – movement from financial firms announcing “net-zero by 2050 or sooner” ambitions and high-level commitments to align financing practices with the Paris Agreement, while financial sector actors and coalitions have unveiled a plethora of recommendations, tools, and initiatives for a range of purposes and actors in the finance sector. Sometimes overlapping and occasionally competing, the continuing appearance of new coalitions and pledges leads to a wide array of acronyms but without corresponding progress in absolute emissions reductions.

Relying on voluntary efforts by UK FIs is not sufficient given the urgency of the issue and the inadequacy of the commitments made to date. Many of these net zero ambitions amount to ‘aims’ to be achieved decades from now rather than targets for near term emissions reductions; focus on reducing intensity rather than absolute emissions; deem acceptable emissions reduction trajectories with questionable levels of carbon dioxide removal; use energy demand projections and scenarios which result in net-zero in 2070 rather than 2050; and lack transparency about the demands being made of portfolio companies and clients on climate change. At the same time, institutions announcing net-zero ambitions continue to provide high levels of financing to high-

carbon sectors not themselves aligned with the Paris Goals.⁴⁰

The trajectory on climate risk disclosure provides a warning to those intending to rely solely on voluntary efforts. The TCFD recommendations were published in 2017 after a two year consultation process. Four years later, the UK aims to become the first major economy to mandate its adoption. In announcing this intention, the UK government acknowledged that regulation is now necessary because voluntary levels of disclosure overall were low with companies avoiding some of the TCFD recommendations, and because “an increase in the quality and quantity of TCD disclosures is needed.”⁴¹

Table 1: A selection of the existing initiatives associated with financed emissions⁴²

Focus	Initiatives	Financial Sector
High level commitment to act	<ul style="list-style-type: none"> • Collective Commitment to Climate Action (subset of Principles for Responsible Banking) • Climate Action in financial institutions • Net Zero Banking Alliance 	Banks
High level commitment to act	<ul style="list-style-type: none"> • Net Zero Asset Owners Alliance • Investor Agenda • Net Zero Investment Framework 	Investors
Measuring Emissions	<ul style="list-style-type: none"> • PCAF’s Methodology 	Banks and investors
Scenario Analysis	<ul style="list-style-type: none"> • Paris Agreement Capital Transition Assessment (PACTA) • Poseidon Principles • Center for Climate Aligned Finance • TCFD Implied Temperature Rise Associated with Investments Working Group • Transition Pathway Initiative 	Banks and investors
Target Setting	Science Based Targets for Financial Institutions	Banks and Investors
Enabling Action	CISL Banking Environment Initiative Climate Safe Lending Network Climate Action 100+	Banks and Investors
Reporting	TCFD CDP Financial services sector Questionnaire	Banks and Investors

This decade represents the most critical time period for deep absolute emissions cuts across the economy. According to IPCC 1.5°C pathways with limited or no temperature overshoot, global emissions need to decline by about 45% from 2010 levels by 2030. Given this scientific reality and the inevitability that voluntary efforts will fall short of the required level of action, we simply do not have another four years to waste on inadequate and inconsistent voluntary efforts.

There is growing consensus that FIs should be required to make strategic adjustments to drive climate action. The Advisory Group on Finance for the UK's Climate Change Committee recommended that net-zero targets and plans be mandatory for FIs, alongside the 6th carbon budget.⁴³ A recent report from Policy Exchange called for supervised firms to be required to create transition plans aligned with key environmental targets such as those in the Paris Agreement and with eradicating activities such as deforestation.⁴⁴

The government and the relevant regulators – the FCA and the PRA – each have a role to play in driving FI alignment with the Paris

Goals. Even the most lauded voluntary efforts are coalitions of the willing from which leading FIs can choose to exclude themselves. Government has a clear role in setting a legislative requirement that all regulated UK FIs must adopt and implement a transition plan that aligns with the Paris Goals. This avoids any inconsistencies in how individual regulators may interpret their mandate on climate change.

Regulators can then set out “a clear framework for what alignment with Paris means in practice for FIs, and set out the consequences for failing to meet the requirements”.⁴⁵ Regulators could help address the gaps with existing voluntary efforts by:

- Defining and standardising best practice removing the growing risk of similar but different voluntary initiatives setting varying standards each labelled ‘best practice’;
- Supporting and accelerating the development of objective fit-for-purpose methodologies and overcome known data gaps;

- Setting minimum expectations for FI’s that are aligned with best available science rather than the willingness of the least ambitious signatory to a voluntary effort;
- Encouraging the international adoption of national best practice standards; and
- Implementing an evaluation and enforcement process which would provide much needed credibility and accountability into ‘net-zero’ pledges.

FIs should welcome rather than resist such legislative and regulatory intervention. It would level the playing field as well as help them operationalise the high-level ambitions they have expressed to shareholders and whose implementation will be complex. A survey of 50 sustainable finance experts found broad consensus on the potential impact of regulators filling this role.⁴⁶



6. RECOMMENDATIONS

In March 2021, the Chancellor of the Exchequer confirmed that each of the key regulatory bodies– the FCA and the PRA – “should have regard to the government’s commitment to achieve a net-zero economy by 2050 under the Climate Change Act 2008 (Order 2019) when considering how to advance its objectives and discharge its functions.”⁴⁷ This clarification supports civil society calls for the Bank of England to fully use its powers, including on capital requirements, to drive FIs towards alignment with the Paris Goals.

However, the regulators’ reluctance to mandate climate risk disclosures which was also arguably within their existing remit and instead rely on the government to introduce legislation suggests that HM Treasury will likewise need to introduce legislation to require that FIs align their activities with the Paris Goals.

COP26 provides a unique opportunity for the UK to accelerate the adoption of financial practices that actively support the paradigm shift towards net zero and Paris Alignment and begin to tackle globally financed emissions. Prior to the summit, we recommend that the UK government commit to the following measures:

- **Legislation to require all UK regulated FIs to adopt and implement a transition plan that aligns with the 1.5°C goal of the Paris Agreement, the provisions of which should be guided by regulation, that is both flexible to evolving best practices for assessing alignment and in line with latest science.**
- **The development of specific requirements⁴⁸ to be included within those transition plans and their supervision should be undertaken by the relevant regulatory and supervisory bodies.**
 - **The transition plan would apply to all financing activities (lending, underwriting, investing, advisory services, and insurance underwriting).**
 - **The transition plan would include interim emissions reductions targets that are in line with 1.5°C pathways with low or no temperature overshoot and not reliant on carbon dioxide removal and to be reported on an annual basis.**
- **The UK government should use its G7 and COP 26 Presidencies to encourage other countries to adopt this approach, by spearheading leadership towards the alignment of private finance sector with Paris Goals and creating international venues and mechanisms to take this commitment forward.**
- **The UK government should support the harmonisation and consistent implementation of an industrial classification across all reporting under Pillar 3 of the Basel Framework to increase transparency, comparability and granularity of disclosed data.**
- **The Treasury should report to parliament each year on whether financed carbon emissions for the UK regulated FIs has increased or decreased and whether this poses any systemic financial risks for the UK financial system.**

In line with its updated mandate on climate change, we also recommend that the Bank of England:

- **Ensure that climate-related risks and impacts are integrated into asset purchase schemes and the collateral framework; and**
- **Adjust the macroprudential regulatory framework so that climate-related risks and impacts are more accurately reflected in capital liquidity rules.**

7. CARBON ACCOUNTING METHODOLOGY

This section gives a further explanation of the methodological process undertaken by the research provider (beyond the steps outlined in Section 3), across the selected entities that featured in the analysis.

7.1.1. GHG Protocol and PCAF guidance

To estimate emissions from lending and investment activities by the selected entities, the Research Provider followed and applied the methodological principles of the GHG Protocol's Category 15: Investments⁴⁹ and the application guidelines provided by the Partnership for Carbon Accounting Financials (PCAF).⁵⁰

There are three options specified by PCAF to measure financed emissions, namely:

- Option 1: reported emissions
- Option 2: physical activity-based emissions
- Option 3: economic activity-based emissions

Reported emissions and physical activity-based methods require reported emissions or primary physical activity data (e.g., electricity consumption) disclosed by each borrower or investee, or third-party data providers. Economic activity-based emissions on the other hand, are estimations derived from the use of region or sector-specific emissions data, combined with key financial data for each investee, for example, credit exposure or AUM.

Given that the analysis is based solely on publicly available data, it has employed options 1 and 3, based on data availability. The underlying data considerations for each option, as well as the underlying data quality

Table 2: PCAF's data score quality for equity and loans⁵²

Data Quality	Options to estimate the financed emissions	When to use each option
Score 5	Option 3: Economic activity-based emissions	Outstanding amount in the company is known. Emission factors for the sector per unit of revenue (e.g., tCO ₂ e per EUR/USD of revenue earned in a sector) and asset turnover ratios for the sector are known.
Score 1	Option 1: Reported emissions	Unaudited emissions are collected from the borrower or investee company directly or indirectly via verified third-party providers (e.g., CDP) and then allocated to the reporting FI using the attribution factor.

score assigned by PCAF (1 being the highest, 5 being the lowest), is illustrated in Table 2.

Financial data was sourced from public disclosures such as annual reports, regulatory disclosures, and includes data such as portfolio positions, loan transactions and the balance sheet. Reported emissions data was sourced from company disclosures in sustainability reports, as well as disclosure to mechanisms such as CDP⁵¹ and TCFD.

7.1.1.1. Banks

Banks act both as asset owners (e.g., **lending**) and service providers (e.g., **underwriting, M&A**). For this assessment, banks' credit exposure represents the basis for the calculations carried out, given banks' ownership of the emissions resulting from the activities financed. Although credit represents only one part of a bank's activities (e.g., lending), there is an acceptable degree of visibility related to each bank's lending activities per industry and geography. Accordingly, only credit exposure is included within this analysis. The asset classes covered in this assessment include business loans to several industries

and mortgages. In particular, the assessment covers 23 sub-industries, from energy to IT and industrials. It is worth noting that although information from banks' disclosure enables an estimate, the lack of a harmonised industrial classification and categorisation across institutional Pillar 3 reporting, as well as granular disclosure of geographic exposure, only allows for the estimates to be carried out through the use of economic activity-based emissions (Option 3 as per the Standard). Banks are required to report their material risks in Pillar 3 while meeting the regulations core principles; clarity, comprehensiveness, meaningfulness/usefulness, consistency over time and comparability. Pillar 3 sector classifications tend to be less comparable across institutions when compared with the global standard industry codes typically used by Asset Managers for debt and equity.

In addition, as per PCAF's data quality score guidelines, the approach enabled by the publicly available data is a Score 5, the lowest data quality score possible for an estimation.

The implications of the method and a data score 5 are predominantly that the resulting emissions estimates encompass a degree of error that is notable, and the estimates can therefore only be seen as indicative. This still provides a sound basis for estimated carbon emissions while accepting the analysis is not precise in nature. The calculation approach taken is the same across all institutions and provides a comparable top-down analysis. Deeper analysis based on transactions would need to be completed by the FIs themselves to be fully accurate – this is not possible from the outside, usually due to client confidentiality. To date, not all FIs in the UK have published their financed carbon emissions.

As there is a lack of public data from the institutions themselves, methodological assumptions have been used for this indicative analysis. The key data points used for the calculation were the following:

- Attribution data:
- Outstanding investment in the industry
- Asset turnover ratio per sector
- Emissions data:
- GHG emissions per sector (sourced from Exiobase⁵³)
- Turnover per sector (calculated using the asset turnover and outstanding investment per sector)

As outlined by the Standard, and based on data availability from Pillar 3 disclosures, the Research Provider employed the use of official statistical data from Exiobase, providing region and industry-specific emission factors expressed per economic activity (e.g., kg of CO₂/USD of revenue) to estimate the exposure of each bank's lending activity on a global scale. For example, for energy the composition of the grid would be included in the country emission factor. Asset turnover ratios were employed, as per PCAF's guidelines, to estimate turnover per industry and geography, and enable the attribution of emissions per institution i.e., financed emissions.

For this assessment, the Research Provider collected geographical and industry credit exposure data reported by banks in so called CRB (i.e. credit risk exposure) tables respectively in their Pillar 3 reports for 2019. The letters after CRB significant the sequence of the table in the Pillar 3

report itself. This analysis is completed on a regulatory accounting basis by the FIs. The initial steps in the assessment carried out by the Research Provider included a mapping exercise where the classification of activities outlined by banks in the CRB-D tables in Pillar 3 reports were mapped to the Global Industry Classification Standard (GICS) – an industry taxonomy. This enabled the Research Provider to map these activities to the Exiobase datasets providing GHG emission factor per sector, as well as calculate the asset turnover per industry. The attribution of overall emissions was based on the outstanding aggregate investment or lending provided to an industry, and the use of an asset turnover ratio specific to the country and industry. This approach was implemented for all asset classes except mortgages, following the formula below (extracted from PCAF's methodologies <https://carbonaccountingfinancials.com/>):

$$\sum_c \text{Outstanding investment}_c \times \text{Asset turnover ratio}_c \times \frac{\text{GHG emissions}_s}{\text{Turnover}_s}$$

where c = borrower or investee company and s = sector.

For mortgages, which represents the largest asset class in the assessment of the 15 institutions, a separate approach was used based on PCAF's recommendations, which was based on the geographic distribution of each bank's mortgage exposure. The calculation was based on national statistical data to estimate average dwelling type area and energy consumption. Emissions were estimated using emission factors specific to the geography and energy source (e.g., grid emission factors). The key data points used for the calculation were the following, based on the formula below (extracted from PCAF <https://carbonaccountingfinancials.com/>):

- Outstanding amount
- Estimated building energy consumption per m²
- Estimated area financed in m² based on average dwelling type
- Standard emission factors specific to the energy source

$$\sum_b 100\% \times \text{Estimated energy consumption from statistics}_b \times \text{Floor area}_b \times \text{Average emission factor}_c$$

where b = building, c = energy source

It was also found that some banks (HSBC Holdings Plc, Barclays Plc, and Santander UK Group Holdings Plc) potentially classified their credit exposure for mortgages under

a different industry name and constituted a large share of the counterparty exposure disclosed in the credit risk disclosure tables in Pillar 3 (CRB tables). These were found within the following classifications per bank: 'Personal' for HSBC, 'Other' for Barclays and 'Retail' for Santander. Further, the underlying geographies of the counterparty values were identified from the explanations mentioned within the Pillar 3 report. The emission factors which were calculated using the above-mentioned approach for mortgages in specific geographies were then applied to these mortgage values, corresponding to the industry where the counterparty values were largely concentrated.

7.1.1.2. Asset managers

The portfolio-level exposure of the ten largest asset managers in terms of value of assets under management (AUM) is assessed based on the data quality that is publicly available from each institution. Each asset manager's portfolio encompasses a diverse portfolio of asset classes, geographies and positions. Given the methodological guidelines provided in the Standard to date, the assessment focuses on equity and corporate fixed income investments.

The Research Provider assessed the level of disclosure of ten of the largest asset managers in order to identify disclosure related to equity or fixed income. All ten of the asset managers were found to disclose either their positions for a number of equity and fixed income funds, or disclosed emissions data for a portion of their AUM as part of their annual disclosure to the Montreal Pledge, CDP, or TCFD. The following approach was used to estimate financed emissions based on the available data:

- For asset managers that publicly disclose their holdings and positions for a number of their funds, an accurate carbon accounting of Scope 1 and 2 emissions for investees was carried out as per PCAF guidelines for equity and/or fixed income portfolios, with the calculation accuracy ranging between a data quality score of 1 and 3.
- Once the emissions from the available funds under equity and fixed income strategies were calculated and attributed to the asset manager, an average carbon intensity (tCO₂e / million invested) for equity and fixed income was calculated based on the intensity of each underlying fund.

These intensities were used as proxies for the remaining value of assets under management for equity and fixed income, enabling an indication of total absolute emissions financed by the asset manager.

- It is worth noting that this level of estimation has a number of limitations, including that it does not account for other asset classes such as real estate, real assets, cash, private equity and others. Therefore, for asset managers where these asset classes do not constitute a significant proportion of total AUM, the figure will be more accurate. In general, the asset managers analysed, all had diversified portfolios.
- The implications of this generate an acceptable margin of error, given that the carbon intensities derived are based on some of the manager's positions across multiple notable investment strategies. Therefore, it is assumed the sectoral and

geographic distribution of the remaining strategies and AUM for equity and fixed income is unlikely to change drastically for other funds or strategies made available to international investors.

- In the case of HSBC Global Asset Management, intensity figures were provided under their Montreal Pledge report for 2018 for approximately USD 60 billion in AUM for its equity and fixed income portfolios managed in London, Paris and Hong Kong. The average carbon intensity disclosed, in $\text{tCO}_2\text{e} / \text{USD million}$ for equity and fixed income, was then applied to the total value of AUM for these two asset classes. Therefore, the estimation process based on contents of the funds was not completed as the Montreal Pledge report was available and provided disclosure.
- In the case of Legal and General, intensity figures were provided in their TCFD report

for 2019. This intensity figure was applied to approximately GBP 80 billion in AUM for its equity and fixed income portfolios. The average carbon intensity disclosed, in $\text{tCO}_2\text{e} / \text{GBP million}$ invested, was then applied to the total value of AUM for equity and fixed income. As with HSBC, the estimation process based on contents of the funds was not completed as the Montreal Pledge report was available.

The estimates generated by this analysis should not be seen as conclusive or final, nor do they cover the full range of activities by the selected institutions. The figures presented in this report should be seen as indicative estimates only. This section outlines the key limitations and barriers that underpin the analysis and indicative results.



8. LIMITATIONS AND BARRIERS

8.1. Limitations from data availability

Due to the scope of the assessment and the inability to access transaction-level or counterparty data collection, several limitations were encountered in the work presented in this document.

8.2. Publicly available data

The work conducted was based wholly on publicly available data, as outlined throughout this report. This led to marked limitations in estimations for banks, as no publicly available disclosure related to fee income from services (e.g., underwriting and M&A) was available, nor granular data at the investee level for credit exposure.

This resulted in the use of sector-level data, which is a limitation as it lowers the overall accuracy of the assessment of each FI. For example, it does not enable transaction level assessment or attribution, rendering the assessment of syndicated loans impossible. Lastly, limited data availability increases the risk of double counting, making it difficult or impossible to identify intercompany transactions.

8.3. Boundary of the assessment

Given that transaction level data was unavailable for the estimations of credit exposure, one of the key limitations of this assessment is that estimates do not account for Scope 3 emissions of the counterparties. The exclusion of Scope 3 emissions results in the indicative figures calculated for this assessment being underestimated values. This is an important limitation as Scope 3 emissions account for a substantial portion of the investees' emissions for industries such as Energy, Oil & Gas related activities, Mining, Transportation, Materials and others.⁵⁴ Additionally, Pillar 3 is usually completed on a country of domicile basis and does not identify the underlying location of assets owned by a company. For example, BP p.l.c. would be classified

simply as UK due to the location of its headquarters, despite its large international footprint. Lack of disclosure by investee companies can be a significant barrier facing FIs when calculating their financed emissions.

8.4. Pillar 3 categorisation

The lack of a harmonised reporting framework for Pillar 3 reporting created several barriers to being able to complete indicative carbon emissions calculations. A degree of assumption and subjectivity was required by the research provider to map these industries to the industrial classification used in Exiobase, which provides industry and geography specific emission factors. The overall analysis is therefore indicative in nature, due to the challenge of finding a comparable picture of different organisations exposures via the Pillar 3 tables and industries classifications.

8.5. Methodological limitations

The work presented in this document was carried out as much as possible in alignment with the guidelines set by PCAF. This created limitations for the scope, coverage and overall quality of the results in some areas. Although PCAF has provided a global standard with options to account for financed emissions, it still has gaps for both banks and insurers.

As outlined in Section 4, methodologies to date note that capital providers and owners generate financed emissions but considers that service providers do not. As a result, and as can be evidenced in PCAF, guidance on accounting for service provision, such as underwriting and M&A advisory, is not provided. This created a significant limitation in the coverage of the assessment, as key activities for banks and insurers could not be assessed. In addition, the emissions associated with other key asset classes for asset managers, such as cash, currency and derivatives, cannot be captured under available methodologies.

A final limitation was the use of Exiobase across most of the assessment for the economic activity-based emissions factors to align with PCAF. This was used extensively in the calculation of emissions for bank credit exposure, and also for estimates for asset manager equity investments where no public data was available.

Exiobase showcased limitations in mapping to the disclosed industries in Pillar 3, as well as limitations in the accuracy of its data, with notable differences in emission factors across similar geographies, e.g., notable differences in emission factor for the same activity between the UK, France and Spain. This led to markedly high numbers in some instances and the need to for the research provider to calibrate results using the Organisation for Economic Co-operation and Development (OECD's) data.

One of the limitations of the Exiobase dataset include the limited geographic range of the data for countries and regions, meaning that certain assets had estimated emission factors. The second limitation is the temporal dimension as annual updates are not provided, meaning that the dataset does not always reflect the latest changes in sectoral and country carbon intensities. Lastly, the industrial classification provided by Exiobase does not map easily with those of more generic industry classification standards, creating challenges to industry mapping.

ANNEX 1

LIST OF FINANCIAL INSTITUTIONS IN SCOPE

No.	BANKS Other Systemically Important Institutions (O-SII) ¹⁶	ASSET MANAGERS No UK regulatory list available Large UK headquartered asset managers in scope, identified by value of AUM.
1	Barclays Plc	L&G Plc (Legal and General Investment Management)
2	Citigroup Global Markets Limited	Schroders Plc
3	Credit Suisse International	HSBC Global Asset Management
4	Credit Suisse Investments (UK)	M&G Investments
5	Goldman Sachs Group UK Limited	Baillie Gifford
6	HSBC Holdings Plc	Royal London Asset Management
7	J.P. Morgan Capital Holdings Limited	Man Group
8	Lloyds Banking Group Plc	Aberdeen Life Investments
9	Merrill Lynch International	Aviva Investors
10	Morgan Stanley International Limited	Insight Investments
11	Nationwide Building Society	
12	Nomura Europe Holdings Plc	
13	The Royal Bank of Scotland Group Plc/ NatWest Group	
14	Santander UK Group Holdings Plc	
15	Standard Chartered Plc	

ANNEX 2

PCAF DATA QUALITY SCORE FOR DEBT AND EQUITY

Data Quality	Options to estimate the financed emissions	When to use each option
Score 1	Option 1: Reported emissions	1a Outstanding amount in the company and EVIC are known. Verified emissions of the company are available.
		1b Outstanding amount in the company and EVIC are known. Unverified emissions calculated by the company are available.
Score 2	Option 2: Physical activity-based emissions	2a Outstanding amount in the company and EVIC are known. Reported company emissions are not known. Emissions are calculated using primary physical activity data of the company's energy consumption and emission factors specific to that primary data. Relevant process emissions are added.
Score 3		2b Outstanding amount in the company and EVIC are known. Reported company emissions are not known. Emissions are calculated using primary physical activity data of the company's production and emission factors specific to that primary data.
Score 4	Option 3: Economic activity-based emissions	3a Outstanding amount in the company, EVIC, and the company's revenue are known. Emission factors for the sector per unit of revenue are known (e.g., tCO ₂ e per euro of revenue earned in a sector).
		3b Outstanding amount in the company is known. Emission factors for the sector per unit of asset (e.g., tCO ₂ e per euro of asset in a sector) are known.
Score 5		3c Outstanding amount in the company is known. Emission factors for the sector per unit of revenue (e.g., tCO ₂ e per euro of revenue earned in a sector) and asset turnover ratios for the sector are known.

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