FORWARD-LOOKING DATA:
FoSDA Review 2021

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As more emphasis is put on the financial sector to implement net   -zero targets, and companies are progressively being encouraged by market participants to provide forward   -looking information, the significance of forward -looking data cannot be underestimated . To move towards green financing, institutions must move beyond historical reporting to implement targets, disclosure requirements and portfolio transition.   To this end, the FoSDA Forward Looking Data Workstream has produced this white paper based on extensive interviews and engagement with policymakers and financial industry experts to highlight the unique characteristics of forward data used in sustainable finance. This report will set out:

Definitions of Forward-Looking Data	*Temporality review of data gaps and holes*
Unique Challenges for forward-looking data including the "Missing Middle"	*Recommendations for policymakers*

The FoSDA work on forward-looking data will continue across workstreams for 2022.

01 Definition of Forward-Looking Data

The results of our research suggest that data for sustainability can be broadly categorised across the past, present and future.

- **PAST DATA:** Backward-looking data such as the past level of emissions for a company or sector can act as a proxy for future emissions reductions.
- **PRESENT DATA:** Forward-looking data can be data in the present that speak to the future. These can act as an indicator for a future state. For example, the present capital expenditure of a company is not technically forward-looking (as the investment has already taken place) but it is forward looking in the sense that the sustainability footprint of the indicator is in the future. Other examples include information on whether a patent has been filed or whether a permit to build a power plant has been acquired.
- **FUTURE DATA:** These include targets, commitments, and projections. They differ in that they are not verifiable, auditable facts, but expectations based on a set of inputs. They can include projections about future installed capacity, productions and emissions.

Forward-looking data are a critical piece in the data puzzle. **They fulfil three key uses**.

1. *First, they enable investors to differentiate between companies that may have the same static sustainability performance in the present (such as the same carbon foot print) but may have different potential in terms of their sustainability outlook.* Quoting from the recent LSEG/OMFIF report[1], according to Judson Berkey, group head of engagement and regulatory strategy in the chief sustainability office at UBS, 'It is very helpful to have a forward view on where companies are headed and where they will be over time, because that gives you a view on where your portfolio may be headed towards.' Andrew Parry, head of sustainable investment at Newton Investment Management also highlighted the deficiencies of relying on present data alone, stating that 'Today's emissions and intensity are a limited element in the whole carbon story and journey.'

2. *Second, forward-looking data can enable investors to assess the adaptive performance of a company from a risk perspective.* Investors can assess whether a company is adapting to future potential disruption (physical risk) and to future policy mitigation (transition risk). This is a critical exercise for the investment community, and it involves understanding the accounting mechanisms shaping these future risks.

3. *Third, forward-looking data are also important for benchmarking against scenarios*. Jakob Thomä, executive director, 2° Investing Initiative, observed that 'Scenarios are forward looking. So if you want to benchmark against an indicator that has a future timestamp, you need to have the equivalent indicator with the same future timestamp.' Benchmarking against scenarios is critical both for regulators and policymakers, as well as for investors.

To fulfil these needs and equip themselves to address these uses, players in the financial system are beginning to build forward-looking databases. These databases fall broadly across three categories: targets and commitments, external conditions and performance.

Category 1: Targets and commitments

The first category of forward-looking data relates to what people pledge. This can include corporate targets, commitments or statements showing compliance with regulatory constraints. They will usually be bound by specific timeframes.

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[1] https://www.omfif.org/wp-content/uploads/2021/09/LSEG-2021-1.pdf

Category 2: Indicators of external conditions

The second category of forward -looking data captures the reality of external economic, physical and other conditions within which actors aiming to deliver on targets and commitments operate. While there is still uncertainty associated with these projections, they differ from projections based on targets and commitments as they are based on more objective and set characteristics. For example, one can derive projections on the possible extraction patterns from an oil and gas field based on geological and economic features of the field.

On the physical risk side, projections can be calculated while leveraging climate models that were created to be forward looking while incorporating a historical baseline. According to Natalie Ambrosio Preudhomme, director of communications at Four Twenty Seven, part of Moody's ESG Solutions, such data are 'based on granular, intentionally forward -looking modelling derived from technical, science -driven, global climate models. So we are leveraging forward -looking information on physical risks, rather than historical data, to make projections.'

PROJECTIONS
Projections can be based on historical trends or data available now. This can include temperature-alignment datasets that are forward looking, but based on modelling of past data that have been directly collected. These are used as inputs to make educated projections by regulators, investors and companies.

Category 3: Performance

The third category captures projections around performance. This could include projections around the performance of specific features of a power plant, such as its filters or input fuel. It can also capture risk performance and include projections on future financial performance, which will typically be linked to production intensity and therefore emissions intensity.

Physical Risk or Transition Risk? What are we tackling here?

Forward-looking data as outlined above are most relevant for measuring and managing physical risk. Physical risk is usually associated with the location of an asset – a power plant built in a region vulnerable to floods would be subject to physical risk. While this is useful and fairly straightforward, it is not comprehensive. Understanding vulnerabilities across companies' supply chains requires more in-depth assessment and performance data for modelling physical risk. These indicators can also include data around how different institutions are managing their climate risk, including climate governance. These can be harder to quantify and make globally comparable or forward looking.

Definitions of forward -looking data must be grounded in what constitutes a material factor for the exercise in question. While convergence of standards and definitions is ultimately desirable, this can only apply up to a point as it is not prudent to compare companies' transition pathways using the same standards across sectors or branches of the same sector. Carbon emissions are important across all sectors, but it is obvious it is more material for a company in the transportation sector than one in Financials or Services. SASB has a useful materiality map online demonstrating this point.

Instead, measuring and reporting transition needs to take account of the business model of a company and the operational model of different industries. Ambitious targets can and should be set against the 'business as usual' scenario for each example. Be aware if you are assessing future physical risk or determining transition comparisons. Both need well-defined forward-looking data used appropriately.

02 Temporality Review of Forward-Looking Data

Use in scenarios

Forward-looking data play a critical role in regulatory exercises, including stress testing and risk assessments. They are especially relevant for scenario analysis, defined by the Task Force for Climate-related Financial Disclosures (TCFD) as a tool to enrich critical and strategic thinking around potential outcomes from various scenarios such as climate change.

Scenario analysis is a key part of the toolbox of central banks as well as other international financial institutions including the IMF. For central banks, the process of stress testing and scenario analysis can help assess the resilience of banks and non-financial corporations in handling certain climate scenarios, investigating how liquidity and capital would be affected and businesses impacted. By nature, scenarios are forward-looking, making forward-looking data a critical ingredient for their use. Earlier this year, the NGFS published its climate scenarios portal (https://www.ngfs.net/ngfs-scenarios-portal/), highlighting six scenarios to assess transition and physical risks ranging from the 'delayed transition' and 'current policies' bad outcomes to 'below 2 degrees' or even more ambitious 'net zero 2050' scenarios.

The IMF also uses the NGFS scenarios as a basis for its analysis in integrating country-level climate risk assessments and is in the process of developing its own models to assess the links between climate variables and economic outcomes.

At the macro level, scenario analysis and forward-looking data enable regulators to understand and assess the extent of systemic transition risks from climate change.

Forward-looking data enabling scenario analysis

Examples of tools for climate scenario planning

Source: UN Principles for Responsible Investment

Tool	Description
Paris Agreement Capital Transition Assessment	Provides portfolio-level analyses of transition in public equities and corporate bonds, and uses asset-level data
Transition Pathway Initiative	Sector-level analysis of companies' management of carbon emissions and alignment with Paris agreement, based on company disclosures
2 Degree of Separation	Company and sector-level analysis of the ail and gas sector, using asset-level data

Gaps and Holes

Forward-looking data, like other datasets used in Sustainable Finance have identifiable gaps and holes. The FoSDA Data Gaps and Holes workstream has focused on identifying these gaps and has looked at the identified datasets through a temporality lens. The outcome is the recognition that presently there are more Gaps and Holes in backward looking data and contemporary data than in forward -looking data. Discussions in the FoSDA workstream considered the early-stage nature of some of the areas

Temporality

Legend: ■ Backward (n) ■ Forward(n) ■ Contemporary(n)

Categories: Enviromental, Social, Governace, Economic

Source: FoSDA Data Council

03   Data Gaps– Identified Trends

The 3 E's

Forward-looking data has unique challenges compared to backward looking or contemporary data. A simplistic view is that forward-looking data is particularly impacted by the 3 "E"'s: Extrapolation risk, Estimation risk and Errors.

All data has risk of errata, but forward-looking data does not have auditability and therefore it is particularly difficult to pick up errors in published forward data.

Extrapolation is particularly challenging in future sustainability data. The non-linear, rapidly changing and adjusting global climate situation makes extrapolation virtually useless. Instead, factors of influence must play a role in pulling forward past and present data into the future. These influence factors and impact adjustments are embedded in the methodologies used in sustainable finance and differ widely. This adds comparability risk to investors seeking to review investment choices at the company, industry, and regional levels.

Estimation also adds risk to financial analysis. It is well known that disclosure data from companies is not yet fully complete or robust globally. There are Data Gaps and Data Holes as referenced above. Some data points that are available to investors are in fact estimations based on industry averages and other logical groupings of data that has been disclosed. This practice is normal and useful but forward-looking data that has gone through this process is subject to higher risks of inaccuracy than disclosed data with transparent scenario definitions.

The missing middle

Many actors across the financial sector haves made commitments to meet net-zero by 2050. Many are also adjusting their near-term business and financial planning to manage climate-related financial risks that are already material to institutions' existing portfolio and engagement structures. But there is often a gap in terms of established plans or targets of how to get from the present state to the desired end outcome to meet the targets set.

As much as 'transition' is a word often used in climate risk man   agement, medium and short -term targets and transition plans that can hold current CEO's and managing directors to account are often missing. If targets are too far into the future, there's no incentive to do anything in the near term. Typically, banks and financial institutions are comfortable with time horizons of up to five years for traditional elements of risk. The use of projections, data and extrapolations are commonplace in looking ahead by a few years.

But time horizons for financial risk manageme   nt do not align with time horizons for climate change commitments. Assessing climate   -related risks that will come into effect in 10   -15 years requires forward -looking data catering to longer time horizons. More robust data need to also be available and regularly used by the financial markets for the entire time horizon leading up to global 2050 net   -zero goals. Forward-looking data for the period between 5 and 30 years can make the difference in managing risk going forward. Without these data, the 'missing mi   ddle' presents new challenges in acting on climate change.

"THE MISSING MIDDLE"
Data with 5-25 year horizon
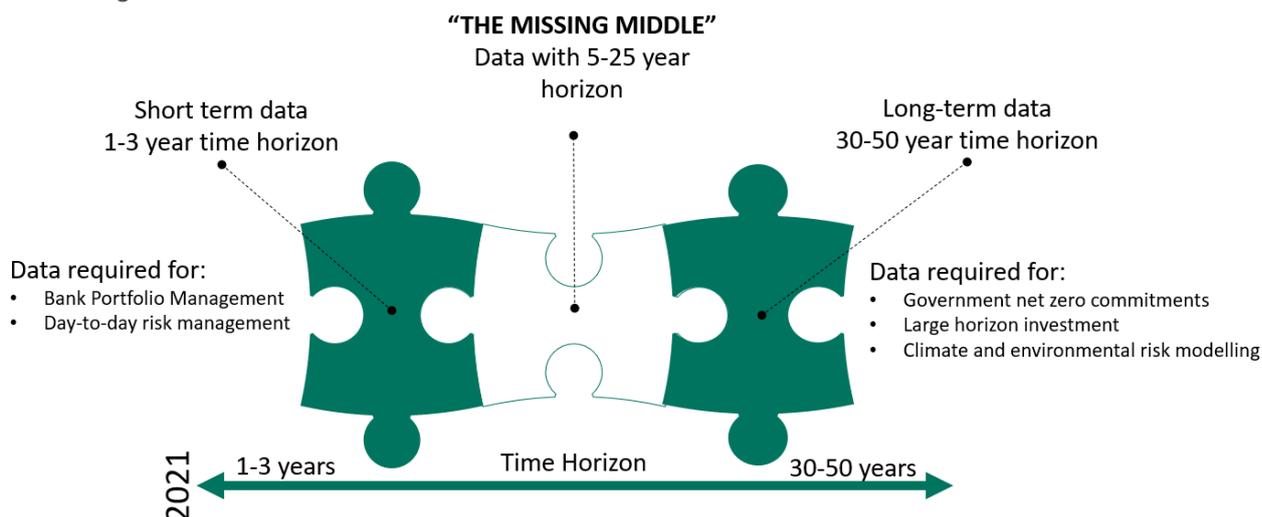
This discrepancy reflects in part a larger presence of recognized frameworks covering the necessary environmental and governance data, while in the social domain multiple Data Holes remain.

Policy uncertainty, climate uncertainty and horizon choice

Another challenge exacerbated in forward   -looking data is the uncertainty surrounding the policy environment. For example, while policymakers seem to generally recognize that current regulations and practices are insufficient in terms of reflecting climate -related risks, they have largely taken no actions to update them and any prompt for action in the financial sector remains to a great extent on a voluntary basis or up to private financial institutions to address independently.

This is the case across a range of areas where multiple regulatory p   aths could be taken, with some example listed below:

Carbon markets, where some regulators have supported carbon border adjustment mechanism arrangements while others have proposed an international carbon price floor

Collateral requirements in central banking, where some central banks have recognised that the ratings agencies on which their frameworks depend do not adequately factor in climate factors, but at the same time have not committed to alternatives

Capital requirements in prudential regulation, where regulators have expressed intention to incentivise allocation towards green activities and dicinsentivise allocation towards dirty activities but have fallen short of instituting either a 'green supporti   ng factor' or a 'dirty penalising factor'

Taxonomy developments, where in some jurisdictions 'green taxonomies' have been developed while 'dirty taxonomies' have been absent

To manage this uncertainty, some companies are making their own   commitments and decisions to achieve net zero, regardless of the policy environment. But investors, as well as corporates, can also be tempted to set knee-jerk reaction targets and commitments which are not additive to achieving our global sustainability goals. For example, divesting of dirty or high carbon emitting assets in a portfolio in response to a potential regulatory transparency requirement may only serve to shift the climate challenge elsewhere in the financial ecosystem and not meet the requirem   ents of regulations in the future.

04   Recommendations & Next Steps

Initial recommendations for the market are:

STEP 01 **Regulators should consider alternatives to a public database for forward-looking data that includes a "tagging system" for data used in financial analysis**

- Setting up an easily accessible database with quality forward-looking data will take time. By standardising the definition and categorisation of forward-looking data, the goal of transparency is achieved. This can assist financial system sustainable data consumers to make data truly "usable", "comparable" and "decision-useful".
- A tagging system whose core purpose is an unambiguous definition of the dataset will also allow data from any source to be incorporated into existing complex financial market systems. Harmonising the definition of the forward-looking data will allow ease of use – it is no longer enough to have "good quality" data. The data needs to be in a defined format that can be incorporated and compared across different use cases and functions.
- Confidentiality of data providers in the value chain will extend the complexity of including all data in a data repository. A "tagging system" that defines datasets deeply and accurately for forward looking data would allow data to be identified as raw data (in forward looking data terms this is a defined extrapolation from verified past and contemporary data in its simplest form), or modelled data (this includes a company's own assessment of its future risk exposure and impacts).

STEP 02 **Forward-looking data disclosures will require better definitions to be meaningful**

- The latest TCFD proposal on forward-looking metrics includes a section on forward-looking disclosures. The proposals in the EU's update to its sustainability reporting legislation, now in negotiations, are also around forward-looking information, suggesting that companies should provide to the market not only performance indicators and impact of their activities today, but specifically future targets and action plans.
- Our research shows this is directionally correct, but issuers are unprepared for this enhanced level of disclosure that includes by its nature future looking data. To avoid adding risk to the financial system through differing assumptions used at the corporate (or industry specific

corporate level), a clear definition of forward-looking data is required including both raw data used for assumptions and extrapolations , as well as the methodology employed.

- Without comparability, disclosure of corporate transition plan data can become a burden on investors to navigate and make accurate capital deployment decisions.

STEP 03   Beware the Missing Middle

- Banks are experts at risk assessment in near term time horizons but are less experienced building a robust risk horizon curve extending through to climate impact dates decades in the future. This creates a "Missing Middle" of data between 3-5 years and 30 years. The latter is many countries' Net Zero target date.
- Without robust data along the entire time horizon, financiers and regulators are at risk of misreading the value of portfolios and have less information to assess and benchmark transition plans of companies.
- Building out complete datasets throughout the time horizon of 5-40 years will help align climate scenarios with financial firms' business as usual risk and value assessments.

About FoSDA

We are a multi-member alliance with the goal of addressing the environmental crisis and sustainability issues from a data perspective and fostering collaboration in financial markets.

The Future of Sustainable Data Alliance is looking to answer the question:

"What data do investors and governments need to deploy capital sustainably and in line with the requirements of regulators, citizens and the market now and in the future?"

Investors need reliable, decision-ready data to confidently invest more in sustainable economic activities – and FoSDA looks to act as a thought leader with the view to ensure the availability of the data needed to accurately inform and increase capital raising needed to tackle global environmental and social challenges.

Our mission is to identify and accelerate the reliable, actionable ESG data and related technology that is needed for improved investor decision making on the global journey to sustainable development.

FoSDA co-rapporteurs for the Forward-Looking Data report