

Feedback on Consultative Document dt. 29th Nov 2023 of the Basle Committee for Banking Supervision (“BCBS”) of the Bank for International Settlements (“BIS”) entitled “Disclosure of climate-related financial risks”

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1. Definitions:

It would be helpful to state (or re-state), in a glossary or introduction, definitions of all key terms and risks. For illustrative purposes, these could be as follows:-

A global bank is exposed a range of risks across two typical kinds of balance sheets, viz, **banking books** and **trading books**.

Banking books: comprise all loans, overdrafts, portfolio finance/Lombard, trade finance and project finance assets, and held-to-maturity bonds including statutory portfolios or reserve portfolios of government bonds, etc.

Trading books: consist of positions in debt and equity securities and their derivatives, positions in foreign currencies and commodities, derivatives books (including foreign exchange, interest rate, credit & commodity derivatives), and units of various types of funds, etc.

Risk: In a general commercial and financial context, *risk is the most probable divergence between expected returns and actual returns*. In other words, risk is what can happen to your Profit and Loss account, as a business or as an investor.

There are three typical definitions of risk, in three different banking contexts, viz,

1. **Trading book context:** In a trading context, risk is measured as the **standard deviation of return** over suitable horizons – daily, monthly, quarterly, annual. The “value at risk” of a position or a portfolio is its potential loss from a prescribed degree of price volatility.
2. **Banking book context:** In a banking context, risk is expressed as an **expected loss** (in annual percentage terms) to a portfolio of assets due to credit defaults, operational errors, mis-deliveries, and so on.
3. **Scenario analysis context:** Simulating *shocks* is a common way for regulators, investors and owners to understand the maximum potential downside they might suffer in an extreme scenario, irrespective of the *type of event* (political, economic, market, credit, environmental, ecological) that caused the shock or the extreme scenario. It is often experienced that **event risks** tend to increase price correlation across different markets,

and that **worst case scenarios** are an appropriate way to model for such exposure. (This context is usually applied to both banking books and trading books alongside their 'normal' risk metrics as above.)

Banking books and trading books are both exposed to risks from asset and liability mismatches (a) mismatches in overall quantum of assets *versus* liabilities, leading to funding gap risks, or (b) mismatches in periodicities of re-pricing these assets and liabilities, leading to interest rate gaps. Such asset-and-liability management ("ALM") risks are of three categories:-

1. Solvency risks: Long-term funding risks of becoming insolvent, i.e., becoming *unable* to meet funding gaps due to systemic tightness/crises, escalations in statutory reserve ratios, cyclical liquidity patterns, credit deterioration, reputation issues, etc.
2. Liquidity risks: Short-term funding risks of cost escalation due to significant and unexpected interest rate increases on short-term liabilities, or excessive losses on liquidity buffers (short-dated marketable securities) suffering unexpected price losses.
3. Interest rate (gap) risks: open interest rate gaps from tenor mismatches in asset and liability rates being affected by adverse interest rate movements when repriced. Divergence in *asset* rates *vs liability* rates (an instance of basis risk) might also cause losses even when assets and liabilities *are* repriced simultaneously for the same periods.

Banking books and trading books are both exposed to business, operational, liquidity, counterparty and credit risks, concentration risks and country risks, as follows,

1. Business risks: the risks of revenues from banking and/or trading books failing to meet or exceed their costs for a number of reasons including competition, market evolution, product evolution, regulations, reputational issues, performance issues, etc
2. Operational risks: the risks of mis-execution or mis-delivery of contracts, due to a range of internal and external causes, leading to operational losses for the bank.
3. Counterparty and Credit risks: the risks of default by counterparties to a borrowing or to a market contract due to counterparty/sector-specific or systemic drivers. These may be either *systematic* (i.e. affecting all asset classes) or *idiosyncratic* (i.e. only affecting assets in specific sectors or companies).
4. Concentration risks: excessive concentrations of assets (loans or bonds) of the *same industry* as borrowers/obligors might exacerbate counterparty or credit risks, and this is referred to as 'concentration risk'
5. Country risks: the risk of default by countries leading to outright credit losses or constraints in international payment mechanisms in turn leading to failures to deliver on contracts – these are collectively referred to as 'country risks'

Trading books are *marked-to-market* on a daily or regular basis, and are further exposed to market price risks as well.

6. Market price risks: these include the effects on mark-to-market values of trading book assets of market price volatility in equity and fixed income prices, exchange rates (foreign exchange risk), interest rates (interest rate risk), spreads (basis risks and spread risks), option volatilities (in forex, rates and credit markets), and further derivatives of all of the above.

2. Impacts and risks:

It is essential that this Consultative Document

- (a) clearly states the causal links between “impacts” (i.e. estimated economic values of corporate externalities) and “risks”, and
- (b) clearly states that “climate-related financial risks” are a *sub-set* of a wider category of risks called “*nature-related financial risks*”

“Today’s externalities are tomorrow’s risks and the day after’s losses” – Pavan Sukhdev

According to the BCBS¹ Consultative Document “*Disclosure of climate-related financial risks*”, paragraph 2, “*physical and transition risks... may materialize through the traditional risk categories of credit, market, liquidity, operational and other risks for banks but have distinct risk drivers.*”

In other words, externalities’ impacts and dependencies can be recognized as exacerbations of the traditional risk classes, arising through additional exposure of various traditional types to the banks’ borrowers and obligors due to climate change: as the BDBS Consultative Document states, “*Climate-related financial risks impact banks’ credit, market, liquidity, operational and other risks based on the physical locations of the banks’ operations and through the counterparties and other stakeholders with whom they interact or invest in.*”

However, it should be noted that the above categories of risks can be exacerbated not only by *climate* externalities, but by **all material externalities** (i.e. “material” in demonstrable economic terms) which can become material risks, and eventually material costs to a business, if they get “internalized”. Therefore, there is a case to be made to extend this BCBS thinking (about how climate externalities become climate risks) also to *other* significant externalities, such as may be caused by water extraction, air pollution, water and land pollution, waste generation and negative impacts on biodiversity and ecosystem services.

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3. Internalization of Externalities:

It is well established that corporate externalities *do* get internalized (by design, by decree or by disaster²) but it is almost impossible to predict when that might happen, or to what extent.

Many variables and uncertainties are involved in such “internalization” processes; however, it is a reasonable approach to model the expected extent of internalized loss or cost to reflect three major factors, viz,

- (a) the ***expected value of impact*** caused to third-parties (e.g. the health costs of air pollution; or the economic cost of climate-caused loss and damage, etc)
- (b) the ***demonstrability of causality*** (i.e. strength of scientific evidence demonstrating the links from corporate *drivers* to physical *outcomes*, to well-being *impacts*)
- (c) the extent of ***socio-political acceptance (or resistance)*** to regulation changes, in respective sectors and jurisdictions, that would otherwise have enabled or accelerated internalization.

These three **independent** factors are the three most important aspects of the chain that connects an impact, through its quantification and its probability and likely extent of “internalization”, to its reflection as a financial risk. It is therefore important to try to quantify *all three factors*, and this presents differing degrees of challenge.

Factor (a) *impact valuation* can be estimated using VBA and IFVI recommended architecture and methodology standards. Whilst this is a complex exercise, it is already a well-documented and peer-reviewed science, with many corporate leadership examples available for learning over the last ten years.

Factor (b) *demonstrable causality* is a reflection of the credibility of the science and economics behind the “driver, outcome and impact” approach and its causality chains.

Factor (c) is a socio-political assessment of likelihood (or remoteness) of the possibility that today’s externalities, which are *contingent liabilities* (an interpretation of IAS-37) are allowed to become actual *liabilities* that need recognition in the accounts of the responsible company.

These three factors have different degrees of relevance for different risks faced by banking and trading books, but in general, they tend to *increase* risks and the resultant exposures due to potential deterioration in credit ratings, reputation, market and product evolution due to markets and regulators beginning to recognize the effects of negative externalities and the need to contain, manage and reduce them. They also create new opportunities through market and product evolution, but that is not in-scope for this note on how externalities add to risks.

² See Annexure-1 for examples

4. Quantification of Impacts

Quantification of impacts and their concomitant risks is explored by the BCBS in section 3.2 (quantification) of their Consultative Document. The Committee finds that *“For banks, financed emissions are often the most significant part of their total GHG emissions.”* This ties well with GIST and UBS thinking that the “downstream” of the bank is largely about impacts and risks reflecting in the **balance sheet** of the bank.

The Committee has developed several sample tables for reporting climate-related financial risks (“CRFR”) and *“Table CRFRB on additional proposed disclosures relating to transition risk, physical risk and concentration risk”*. This serves as a good example, however, more focus on the category of traditional risk and its transmission mechanism into climate-related financial risks (exhibiting as transition risks or physical risks) is warranted. To meet this goal, GIST Impact has designed the following risk framework for banks reporting climate related financial risks.

GIST Impact’s table summarizes which risks are most affected and increased by which externalities in which “level-1” GICS sectors, bearing in mind that the largest “climate” and “sustainability” exposures of a global bank are its *downstream* exposures, known in climate context as “financed emissions”, and their related externalities and financial risks :-

	Risk	Risk Delta	"Externality" Gamma (transition + physical risks)
L1	Solvency risks	Long-term funding gap x risk factors	Risk Delta x (variability from bank reputation, credit ratings, regulations)
L2	Liquidity risks	Short-term funding gaps x risk factors	Risk Delta x (variability from local market price shocks, bank reputation, credit ratings, regulations)
L3	Interest rate gap risks	Intt rate gaps x 1-2SD IRR	N/A
A1	Business risks	EBITDA x 1-2SD variability	Risk Delta x (variability from product evolution, reputation, regulations)
A2	Operational risks	Volumesx fail ratesx fail costs	N/A
A3	Counterparty credit risks	(Assets x credit risk) - collateral	Risk Delta x (variability from reputation, credit, regulatory factors)
A4	Concentration risks	(Sector exposure) - collateral	Risk Delta x (variability from sector shocks, bank reputation, credit ratings, sustainability regs risk)
A5	Country risks	(Cross-border assets)x risk factors	Risk Delta x (variability from in-country sustainability regs risk)
A6	Market price risks**	VAR for various trading books	Risk Delta x (variability from reputation, credit ratings, regulations)
	** captured through Value at Risk ("VAR") risk recognition rules and risk limits		

In order to size the effects of corporate externalities on these various bank risks, we need a *sector-wise* and *externality-wise* understanding of the *extent* of expected internalization (i.e. the extent to which material contingent liabilities under IFRS-37 become actual liabilities) and the *time horizons* over which we expect that might happen, and in which groups of countries (eg: G-20 only? Developed countries only? Or all UN member nations?).

BCBS states in its Consultative Document³ that *“the Committee is exploring an approach whereby counterparties would be classified by sector according to the Global Industry Classification Standard (GICS)”*. Thus, the next stage is to estimate and standardize

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“internalization rates” (over standard time horizons) for at least *each of the broad sectors* of the economy, per GICS. The table below illustrates what this means for GHG emissions impacts across various GICS level-1 sectors:

	Horizon	1 Year	2 Years	5 Years	10 Years	20 Years	30 Years	40 Years	50 Years
	GHG Expected Internalization								
	GICS Sectors	%	%	%	%	%	%	%	%
1	Energy	0%	1%	5%	10%	30%	50%	80%	100%
2	Materials	0%	0%	1%	5%	10%	30%	50%	80%
3	Industrials	0%	0%	1%	5%	10%	30%	50%	80%
4	Consumer Discretionary	0%	0%	0%	1%	5%	10%	30%	50%
5	Consumer Staples	0%	0%	0%	0%	1%	5%	10%	30%
6	Health Care	0%	0%	1%	5%	10%	30%	50%	80%
7	Financials	0%	0%	1%	5%	10%	30%	50%	80%
8	Information Technology	0%	0%	0%	1%	5%	10%	30%	50%
9	Communication Services	0%	0%	0%	1%	5%	10%	30%	50%
10	Utilities	0%	1%	5%	10%	30%	50%	80%	100%
11	Real Estate	0%	0%	1%	5%	10%	30%	50%	80%

As shown above for GHG impacts internalization, this kind of summarized tabulation embodies “sector-wise, driver-wise” understanding of the internalization probabilities of the most significant drivers of negative externalities (eg: GHG impacts, water usage impacts, air pollution impacts, etc). Annexure-2⁴ is just such a spreadsheet summary, cutting across GICS Level-1 sectors for each of the environmental drivers: GHG impacts, air pollution impacts, waste impacts, and so on.

The next stage of exploration that GIST impact proposes together with its partners in each sector is to expan knowledge of the three driving factors. Of the three determining factors mentioned above, we already have a strong handle on factor (a) above, *impact valuation*, through the GIST Impact Valuation Engine and its applications. We now seek to create standards for factor (b) *demonstrable causality* and factor (c) *socio-political likelihood* of contingent liabilities becoming actual liabilities through processes that lead to internalization.

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⁴ See Annexure – 2, a sample spreadsheet summary of what a standardized quantitative exposure table might look like based on sectoral variations in rates of internalization of key externalities.