

How to outperform the S&P500 in the long term using globally standardized metrics

Dr. Axel Hesse, Managing Director, SD-M GmbH



SWISSOTEL CHICAGO

SD-M 
SUSTAINABLE DEVELOPMENT MANAGEMENT

UNEP Financial Institutions Initiative 5th International Roundtable on Finance and the Environment

9th September 1999 / 9th October 2016

9-10 September, 1999 | Chicago, USA Meeting report available in hard copy only. Please contact the UNEP FI Secretariat (email:...

[Read more »](#)

Dr. Axel Hesse in Feb. 2024 near SD-M's 2nd office South of Huelva, Spain, Green Hydrogen Conf.



Dr. Axel Hesse has 37 years of Capital Market Experience; First VW share purchased at the age of 17

Volkswagen "Foreign exchange scandal"

How currency speculators defrauded the Volkswagen Group of almost 500 million marks. Many transactions were only faked and the necessary receipts were forged: the 500 million thing at VW was planned and executed with sophistication; The controls at the car company were no longer effective. The fraud, which obviously took place in Frankfurt, would not have been possible without a helper in Wolfsburg. The Frankfurt foreign exchange broker is one of the key figures in the mystery surrounding missing millions that has cost a respected German company almost an entire year's profits. **The Volkswagen Group loses around 480 million marks due to a huge foreign exchange fraud.**

Black Monday on October 19, 1987 was the first stock market crash after World War II. It started on the Hong Kong Stock Exchange. The Dow Jones fell by 22.6% (508 points) within one day; To date, this is the largest single-day percentage decline in its history. **By the end of October, stock prices fell 41.8% in Australia , 22.5% in Canada, 45.8% in Hong Kong and 26.4% in Great Britain.**

Development of option strategies for Volkswagen shareholders at the VW Annual General Meeting 1991 to increase the dividend yield ("writing puts")

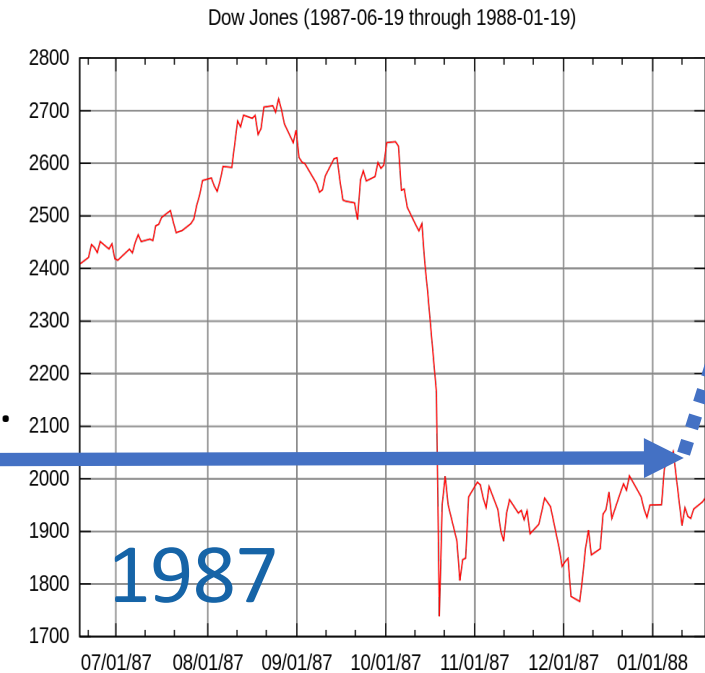
1987:
VW preference share
Bought for 632 DM

March 22, 1987,
DER SPIEGEL 13/1987
VW preference share
450 DM

October 19, 1987
[wikipedia.org/wiki/
Schwarzer_Montag](https://wikipedia.org/wiki/Schwarzer_Montag)
Sold for 250 DM

Learn from mistakes!
Invest long term!

1990-1992
Commerzbank
Hannover, Bank
Apprenticeship



Dow Jones Indu
2024
Market report > Dow Jones I
38.239,98
+253,58 (0,67 %) ↑ today
Apr. 22, 5:22 PM GMT-4 • Disclaimer

1987/2024

30 years of Sustainable Finance Experience



Anne-Maree O'Connor · 2nd
Head of Responsible Investment at NZ Super Fund
Auckland, Auckland, New Zealand · [Contact info](#)



Mark Campanale · 1st
Founder & Director, Carbon Tracker Initiative, founder of Planet Tracker, Member of Advisory Board, GFANZ - @campanalemark
London, England, United Kingdom · [Contact info](#)

Mark mark was the first to name the „Carbon Bubble“

Tessa Tennant launched GRI, CDP, ASriA

“Little Axel” sent the first German questionnaires to Henkel & Co. to ask for the environmental management

1995

NPI
Global Care Funds, London „Monument“, Practical work experience in Insurance & Asset Management

2024

This „questionnaire fatigue“ (tiredness) has just started again in the banking industry asking SMEs!

1995/2024



Dr. rer. oec. Axel Hesse is
Founder, Shareholder & Managing Director of SD-M[®] GmbH.

Dr. Hesse has 30 years of experience in Sustainable Finance. He has published numerous studies on the sustainable investments of institutional investors and on the sustainable indicators that are relevant to financial performance. His PhD thesis was devoted to Sustainable Banking.

CV:

- 1990-1992: Bank apprenticeship at Commerzbank Hanover
- 1992-1993: Alternative service at Deutsche Umwelthilfe
- 1993-1998: Studies in business administration with a focus on sustainable management, asset management and accounting/controlling. Thesis dealt with environmental funds and environmental project finance
- 1995: Work for the "Global Care Fund" of the London-based insurer NPI together with Tessa Tennant (CDP, ASRIA), Anne-Maree O'Connor (NZ SuperFund) and Mark Campanale (Carbon Tracker)
- 1999-2001: Member of an executive advisory board for sustainable asset management at HypoVereinsbank (HVB Group) in Munich. At this time the bank launched the world's first investment product linked to the Dow Jones Sustainability Index
- 2006: PhD in sustainable banking from the Leipzig Graduate School of Management
- 2009-2016: Member of the jury for the portfolio institutionell Award "Best Sustainable Investor"
- 2001-2012: Scientist and consultant for sustainable institutional investments under the SD-M[®] trademark
- 2012: Launch of SD-M[®] GmbH
- 2013: Launch of SD-KPIntegration[®] database and iSTOXX SD-KPIndex[®] family
- 2015: Part-time specialist sustainable investments at NORD/LB Asset Management regarding SD-KPInventory[®] and SD-KPIntegration[®]
- 2016-2019: ESG integration at Metzler Asset Management
- 2020-2021: Senior Manager/Senior Advisor Sustainable Finance for zeb consulting (esp. standardized ESG data & rating of material credit risks for 6 German Banks)

Since 2003: Mandatory reporting of **RELEVANT** ESG indicators in EU Accounting Directives

MODERNISATION DIRECTIVE 2003/51/EC:
Account Directive 78/660/EEC is hereby amended as follows:

“The annual report shall include [...]

To the extent necessary for an understanding of the company's development, performance or position,
the analysis shall include both financial and, where appropriate, non-financial key performance indicators RELEVANT to the particular business, including information relating to environmental and employee matters”

2004: §§ 289; 315 HGB (German Commercial Code)

STUDIE

DAS KLIMA WANDELT SICH

INTEGRATION VON KLIMACHANGEN UND -RISIKEN
IN DIE FINANZBERICHTERSTATTUNG

Axel Hesse, SD-M

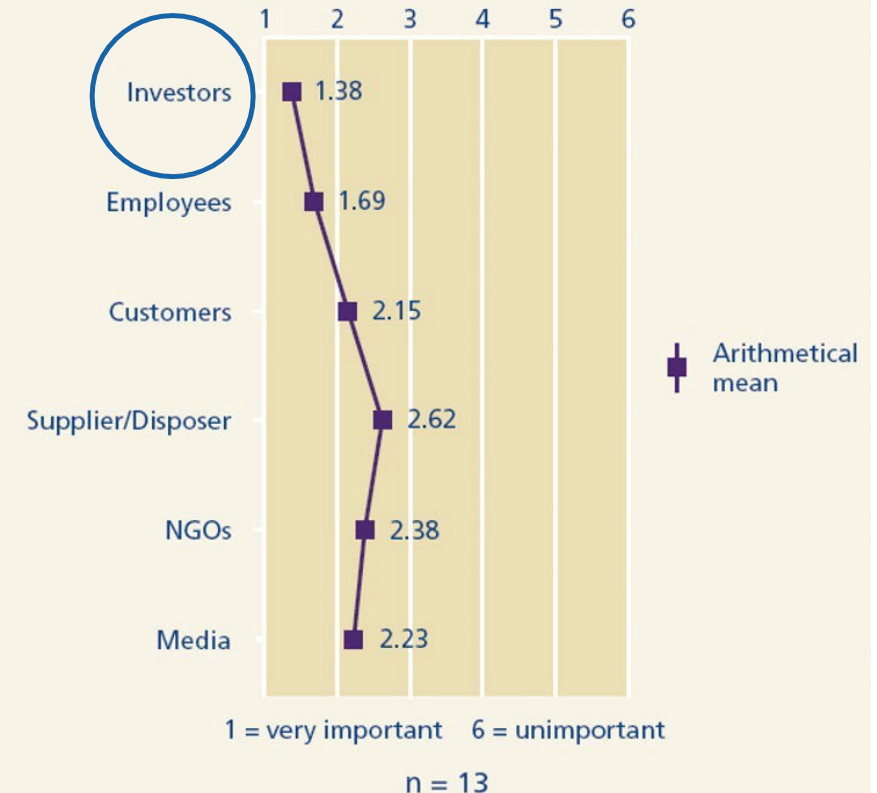


2003/2004

Investors remain the most important target group also for Sustainable Development KPIs (SD-KPIs) in annual / management reports (empirical results for DAX-30 companies)



Question 4 – For which target group does your company mainly conceive non-financial sustainability KPIs in the financial report?



2006

Empirical survey of relevant investors and analysts covering SD-KPIs

Open question:

“Which are the

- up to **three most important**

- **sector-specific SD-KPIs**

- **for the business development, the position and the expected development of**

- **ten different sectors?”**

Less is more!

Deloitte.

Extra-Financial Issues

Sustained added value.

Information demand of investors and analysts for sector-specific “Sustainable Development Key Performance Indicators” (SD-KPIs) in Management Commentaries (MCs) of German companies

Audit, Tax, Consulting, Corporate Finance.

2007

SD-KPI most important criteria in "Best annual report" competition (manager magazin)

Ranking	Company	Total number of points for reporting on SD-KPIs
1.	SolarWorld	67%
2.	TUI	64%
3.	BASF	58%
4.	Norddeutsche Affinerie	54%
5.	ABN AMRO	53%
6.	Munich Re	52%
6.	Shell	52%
7.	GlaxoSmithKline	45%



Prof. Dr. Dr. h.c. Jörg Baetge

for three SD-KPIs	(1) report on SD-KPIs (20%)	(2) economic importance (20%)	(3) quantitative indications (20%)	(4) trend analysis (20%)	(5) benchmarking (20%)	weighted sum (100%)
SD-KPI 1 (40%)						
SD-KPI 2 (30%)						
SD-KPI 3 (30%)						
weighted sum (100%)						

Deloitte.

Extra-Financial Issues

Best Practice for SD-KPIs

Examples of good use of Sustainable Development Key Performance Indicators (SD-KPIs) in management reports 2006

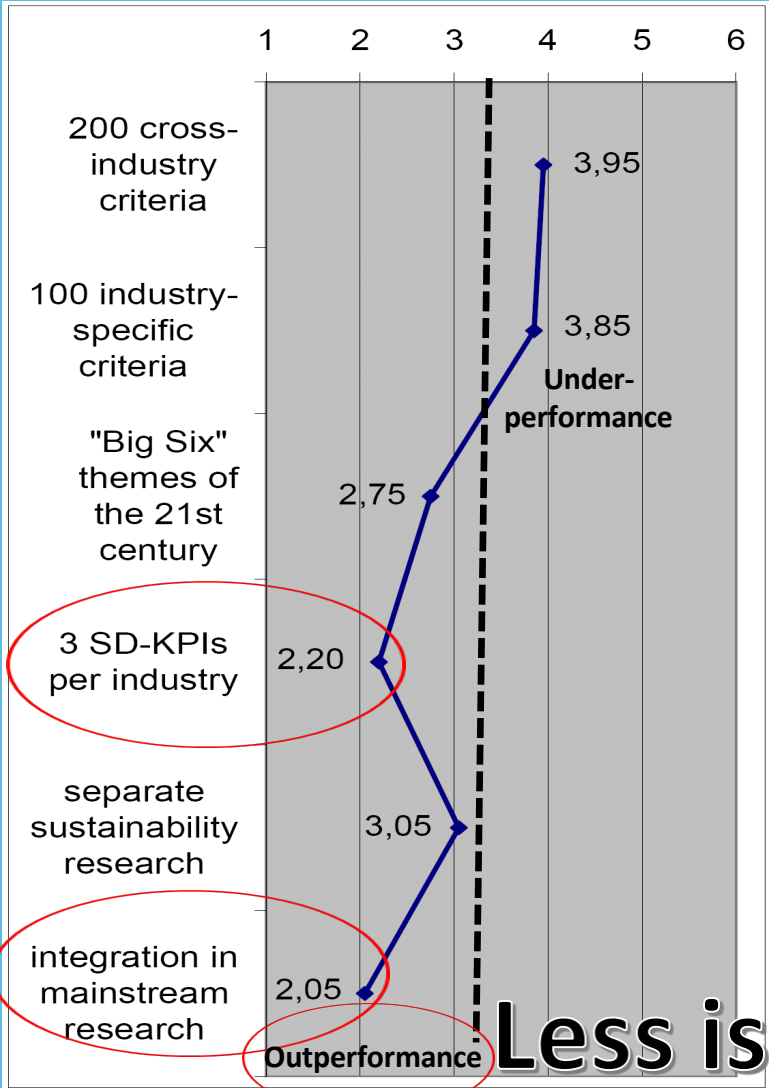
A study by Prof. Dr. Dr. h.c. Jörg Baetge
(University of Münster)
and Dr. Axel Hesse (SD-M)
for Deloitte



Audit. Tax. Consulting. Corporate Finance.

2008

Which of these approaches to sustainability research do you believe will lead to risk-adjusted out- or underperformance in the future?



Survey of leading European pensions funds

Assets: € 460 billion

- ABP (NL)
- AP1 (SWE)
- AP4 (SWE)
- BTPS (Hermes, UK)
- Ethos (CH)
- ERAFP (FR)
- FRR (FR)
- MetallRente (GER)
- PGGM (NL)
- USS (UK)

Less is more!



LONG-TERM AND SUSTAINABLE PENSION INVESTMENTS

A STUDY OF LEADING EUROPEAN PENSION FUNDS

ON BEHALF OF ASSET4 AND THE GERMAN FEDERAL ENVIRONMENT MINISTRY

CREATED BY DR. AXEL HESSE (SD-M)

MAY 2008

Federal Ministry for the Environment, Nature Conservation and Nuclear Safety

2008

SD-KPI Standard 2010-2015:

1st global standard for material ESG KPIs

- **Consensus among global investors and analysts (Japan, Europe, North America)** who influenced assets of € 2 trillion
 - **3 most RELEVANT ESG indicators in**
 - **68 GICS industries** (Global Industry Classification Standard)
 - **% weighting per SD-KPI 1, 2, 3 per industry**
-
- on behalf of the German Environment Ministry:
SD-KPIs “minimum reporting requirement” in annual reports
 - **Association of Public Auditors in Germany (IDW)** recommended SD-KPIs to EU commission for concretisation of EU accounting directives

SD-KPI STANDARD 2010-2015

Sustainable Development Key Performance Indicators (SD-KPIs):
Minimum reporting standard for relevant sustainability information
in annual reports / management commentaries of 68 industries

Developed by Dr. Axel Hesse (SD-M*)
on behalf of the German Federal Environment Ministry
with participations of:

CHEUVREUX **DEXIA** **ethix** **G·E·S**
Asset Management SRI ADVISORS INVESTMENT SERVICES

HERMES **imug EIRIS** **RiskMetrics Group** **SARASIN**

SOCIETE GENERALE **SUSTAINALYTICS** **SOCIAL INVESTMENT FORUM JAPAN** **vigeo**
Cross Asset Research

SD-M **Federal Ministry for the Environment, Nature Conservation and Nuclear Safety**
SUSTAINABLE DEVELOPMENT MANAGEMENT

2010

Sustainable Accounting Standards Board (SASB)

- **2011: Discussions with Harvard University about SD-KPIs**
- **identify ESG issues most relevant to financial performance**
- **2012: Launch of SASB; regional focus: USA**
- **2016: first SASB Standards were launched**
- **77 industries**
- **up to 10 ESG topics and 30 indicators per sector**



AUTOMOBILES
Sustainability Accounting Standard

(2011) 2012-2016

Table 1. Sustainability Disclosure Topics & Accounting Metrics

TOPIC	ACCOUNTING METRIC	CATEGORY	UNIT OF MEASURE	CODE
Product Safety	Percentage of vehicle models rated by NCAP programs with an overall 5-star safety rating, by region	Quantitative	Percentage (%)	TR-AU-250a.1
	Number of safety-related defect complaints, percentage investigated	Quantitative	Number, Percentage (%)	TR-AU-250a.2
	Number of vehicles recalled ²	Quantitative	Number	TR-AU-250a.3
Labor Practices	Percentage of active workforce covered under collective bargaining agreements	Quantitative	Percentage (%)	TR-AU-310a.1
	(1) Number of work stoppages and (2) total days idle ³	Quantitative	Number, Days idle	TR-AU-310a.2
Fuel Economy & Use-phase Emissions	Sales-weighted average passenger fleet fuel economy, by region	Quantitative	Mpg, L/km, gCO ₂ /km, km/L	TR-AU-410a.1
	Number of (1) zero emission vehicles (ZEV), (2) hybrid vehicles, and (3) plug-in hybrid vehicles sold	Quantitative	Number	TR-AU-410a.2
	Discussion of strategy for managing fleet fuel economy and emissions risks and opportunities	Discussion and Analysis	n/a	TR-AU-410a.3
Materials Sourcing	Description of the management of risks associated with the use of critical materials	Discussion and Analysis	n/a	TR-AU-440a.1
Materials Efficiency & Recycling	Total amount of waste from manufacturing, percentage recycled	Quantitative	Metric tons (t), Percentage (%)	TR-AU-440b.1
	Weight of end-of-life material recovered, percentage recycled	Quantitative	Metric tons (t), Percentage (%)	TR-AU-440b.2
	Average recyclability of vehicles sold ⁴	Quantitative	Percentage (%) by sales-weighted metric tons (t)	TR-AU-440b.3

SD-KPI Standard 2016-2021

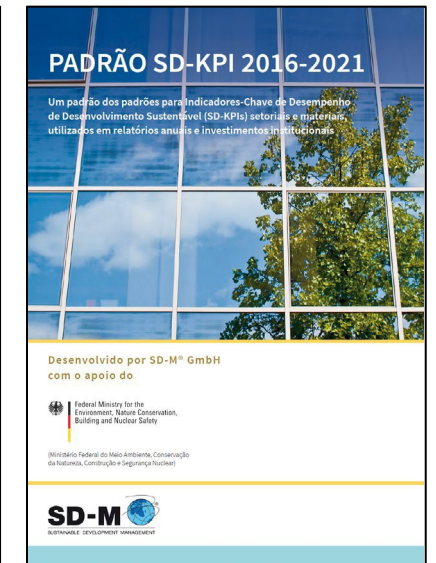
- 3 most RELEVANT ESG indicators in
- 68 GICS industries
- % weighting per SD-KPI 1, 2, 3 per industry

- supported by SASB & German Environment Ministry

- revised by SASB's Technical Director:
SASB found “a high degree of overlap” in SD-KPI analysis and the SASB standards and appreciates the SD-KPI approach as well as how SD-M® “ranked and prioritized topics for each industry.”

- Copyrighted Global Standard of Standards

- English, Japanese, Chinese, Arabic, Russian, Brazilian versions



2016

STANDARDUL SD-KPI 2016-2021

Un standard de standarde pentru standarde specifice sectorului și materiale
Indicatori cheie de performanță pentru dezvoltare durabilă (SD-KPI)
utilizați în rapoartele anuale și în investițiile instituționale

Dezvoltat de SD-M® GmbH
cu sprijinul



Federal Ministry for the
Environment, Nature Conservation,
Building and Nuclear Safety



São
Paulo
May
2024

Bucarest
April
2024

PADRÃO SD-KPI 2016-2021

Um padrão dos padrões para Indicadores-Chave de Desempenho
de Desenvolvimento Sustentável (SD-KPIs) setoriais e materiais,
utilizados em relatórios anuais e investimentos institucionais

Desenvolvido por SD-M® GmbH
com o apoio do



Federal Ministry for the
Environment, Nature Conservation,
Building and Nuclear Safety

(Ministério Federal do Meio Ambiente, Conservação
da Natureza, Construção e Segurança Nuclear)



Brochure „Material for business development and financial performance“ including SD-KPI examples




Wesentlich für Geschäftstätigkeit und Finanzperformance

Bedeutsamste nichtfinanzielle Leistungsindikatoren in der nichtfinanziellen Erklärung gemäß § 289c HGB



published after NFRD („CSR-Richtlinie-Umsetzungsgesetz“)

2017

Bedeutsamste Sustainable Development Key Performance Indicators (SD-KPIs) gemäß SD-KPI Standard 2016–2021

Branche	SD-KPI 1	SD-KPI 2	SD-KPI 3
ENERGIESEKTOR			
Energiezubehör und -dienste	Gesundheits- und Sicherheitsperformance	Treibhausgas-effizienz der Produktion	Wirtschaftsethikvorfälle und Vorsorgemaßnahmen
Erdöl, Erdgas und nicht erneuerbare Brennstoffe	Treibhausgas-effizienz der Produktion	Betriebsunfälle und Vorsorgemaßnahmen	Treibhausgasemissionen der Produkte und Reserven
ROH-, HILFS- UND BETRIEBSSTOFFE			
Chemie	Betriebsunfälle sowie Gesundheits- und Sicherheitsperformance	Treibhausgas-effizienz der Produktion	Anteil nachhaltiger ggü. gefährlichen Produkten
Baustoffe	Energieeffizienz der Produktion	Treibhausgas-effizienz der Produktion	Gesundheits- und Sicherheitsperformance
Behälter und Verpackung	Treibhausgas- und Energieeffizienz der Produktion	Anteil recycelten bzw. nachhaltigen Rohstoffeinsatzes	–
Metalle und Bergbau	Auditabdeckung mit Umweltmanagementsystem und dessen Performance	Gesundheits- und Sicherheitsperformance	Beziehungen zu lokalen Gemeinden
Papier- und Forstprodukte	Treibhausgas-effizienz der Produktion	Anteil recycelten bzw. nachhaltigen Rohstoffeinsatzes	Wasserintensität
INDUSTRIE			
Luftfahrt und Verteidigung	Wirtschaftsethikvorfälle und Vorsorgemaßnahmen	Treibstoffeffizienz in der Nutzungsphase	Exposition gegenüber kontroversen Waffen
Baumaterialien	Management gefährlicher Chemikalien in Produkten	Treibhausgas-effizienz der Produktion	Anteil an Produkten mit „Design for Environment“- / Umwelt-Label
Bau- und Ingenieurwesen	Anteil an Dienstleistungen mit „Design for Environment“- / Umwelt-Label	Gesundheits- und Sicherheitsperformance	Strukturelle Integrität und Sicherheit der Dienstleistungen
Elektrische Geräte	Anteil an Produkten mit „Design for Environment“- / Umwelt-Label	Treibhausgas-effizienz der Produktion	Anteil kritischer und Konfliktmaterialien
Maschinen	Energie- und Treibhausgas-effizienz in der Nutzungsphase	Treibhausgas-effizienz der Produktion	Anteil wiederverwendeter Produkte / gefährlicher Abfälle

German Federal Financial Supervisory Authority (BaFin) has referenced SD-KPI Standard 2016-2021

3 Strategies of supervised entities [...]

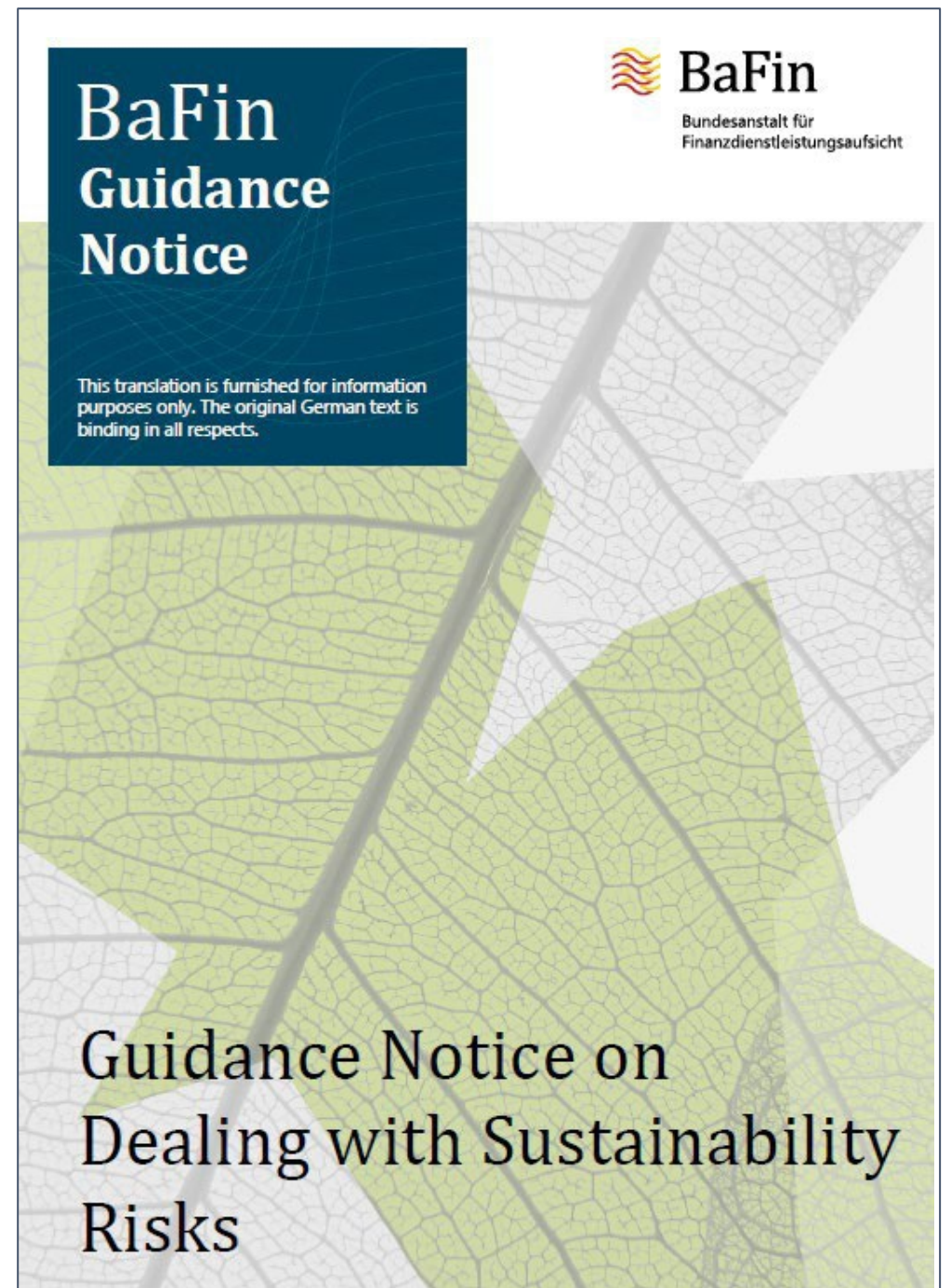
3.1.2 If entities have voluntarily agreed to abide by **external sustainability standards**, or to implement recommendations, these **should be reflected in inhouse strategies and organisational guidelines**.

E.g.: “Principles for Responsible Banking”, “Principles for Responsible Investment”, “Principles for Sustainable Insurance”, recommendations of the “Task Force on Climate-related Financial Disclosures”, the German Sustainability Code (Nachhaltigkeitskodex), the **SD-KPI Standard 2016-2021**

3.2.2 **Which business areas are exposed to a transition risk? Is the risk material?** Should the affected areas be continued, scaled back or adapted? [...]

E.g.: [...] **requirements for counterparties to comply with the disclosure recommendations** of the Task Force on Climate-related Financial Disclosures (TCFD), the EU Commission’s guidelines on nonfinancial reporting, the Sustainability Code or the **SD-KPI Standard 2016-2021**.

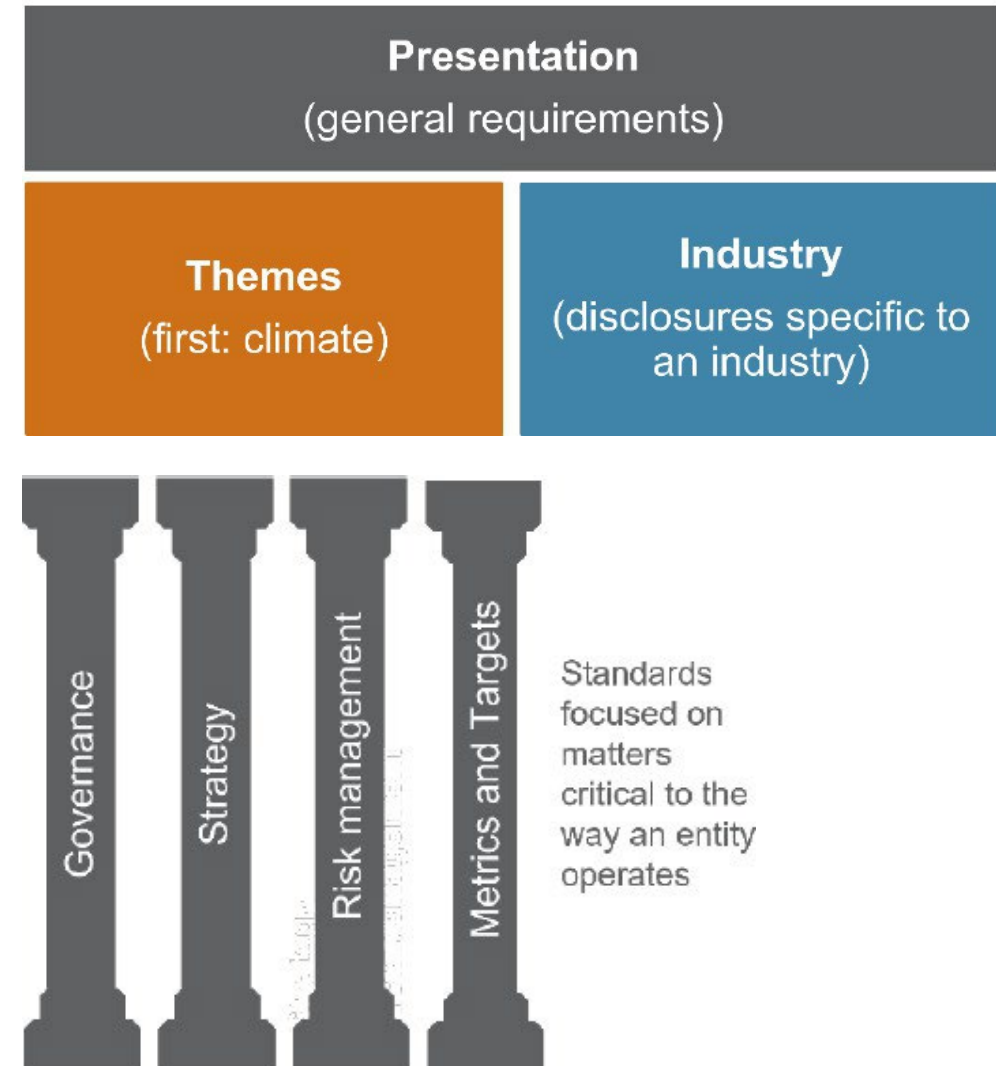
2019



IFRS Foundation: International Sustainability Standards Board (ISSB)

- On 3 November 2021, IFRS Foundation Trustees announced creation of ISSB to develop a **comprehensive global baseline** of sustainability-related disclosure standards
- material information for its primary users (i.e., existing and potential investors, lenders and other creditors), which could affect the enterprise value (amount, timing and certainty of future cash flows).
- HQ: Frankfurt; Chair Emmanuel Faber; Co-Chair Sue Lloyd

Figure 1: Architecture of Standards



2021

June 2023

IFRS S1

IFRS[®] Sustainability Disclosure Standard

General Requirements for Disclosure of Sustainability-related Financial Information

The objective of IFRS S1 *General Requirements for Disclosure of Sustainability-related Financial Information* is to require an entity to disclose information about its sustainability-related risks and opportunities that is useful to primary users of general purpose financial reports in making decisions relating to providing resources to the entity.¹

Materiality

An entity shall disclose material information about the sustainability-related risks and opportunities that could reasonably be expected to affect the entity's prospects.

2023

IFRS SUSTAINABILITY DISCLOSURE STANDARD S1 GENERAL REQUIREMENTS FOR DISCLOSURE OF SUSTAINABILITY-RELATED FINANCIAL INFORMATION

OBJECTIVE	1
SCOPE	5
CONCEPTUAL FOUNDATIONS	10
Fair presentation	11
Materiality	17
Reporting entity	20
Connected information	21
CORE CONTENT	25
Governance	26
Strategy	28
Risk management	43
Metrics and targets	45
GENERAL REQUIREMENTS	54
Sources of guidance	54
Location of disclosures	60
Timing of reporting	64
Comparative information	70
Statement of compliance	72
JUDGEMENTS, UNCERTAINTIES AND ERRORS	74
Judgements	74
Measurement uncertainty	77
Errors	83

June 2023

IFRS S2

IFRS[®] Sustainability Disclosure Standard

Climate-related Disclosures

The objective of IFRS S2 *Climate-related Disclosures* is to require an entity to disclose information about its *climate-related risks and opportunities* that is useful to *primary users of general purpose financial reports* in making decisions relating to providing resources to the entity.¹

This Standard applies to:

- (a) climate-related risks to which the entity is exposed, which are:
 - (i) *climate-related physical risks*; and
 - (ii) *climate-related transition risks*; and
- (b) climate-related opportunities available to the entity.

Climate-related risks and opportunities that could not reasonably be expected to affect an entity's prospects are outside the scope of this Standard.

IFRS SUSTAINABILITY DISCLOSURE STANDARD S2 *CLIMATE-RELATED DISCLOSURES*

OBJECTIVE	1
SCOPE	3
CORE CONTENT	5
Governance	5
Strategy	8
Risk management	24
Metrics and targets	27

APPENDICES

- A Defined terms
- B Application guidance
- C Effective date and transition

APPROVAL BY THE ISSB OF IFRS S2 ISSUED IN JUNE 2023

FOR THE ACCOMPANYING GUIDANCE LISTED BELOW, SEE PART B OF THIS EDITION

ILLUSTRATIVE GUIDANCE

ILLUSTRATIVE EXAMPLES

INDUSTRY-BASED GUIDANCE ON IMPLEMENTING IFRS S2

FOR THE BASIS FOR CONCLUSIONS, SEE PART C OF THIS EDITION

BASIS FOR CONCLUSIONS

2023

IFRS Foundation: International Sustainability Standards Board (ISSB)



May 2023

Exposure Draft

IFRS® Sustainability Disclosure Standard

Methodology for Enhancing the International Applicability of the SASB® Standards and SASB Standards Taxonomy Updates

Comments to be received by 9 August 2023

[In connection with the International Applicability of SASB Standards Project](#), blackline documents detailing revisions to the SASB Standards have been published on [SASB.org](#).

These revisions do not substantially alter the SASB Standards' structure or intent.

The revisions will not be final until ratified and issued by the ISSB, anticipated in **December 2023**

With **over 3,000 companies in more than 70 jurisdictions**, including **74% of the S&P Global 1200 Index**, **already applying the SASB Standards**, this initiative aims to ensure their ongoing effectiveness in supporting industry-specific sustainability disclosures.

2023

Comparison of the three Standards

Use SD-KPI/SASB(ISSB)
for materiality analysis!

	SD-KPI Standards	SASB(ISSB)	CSRD/ESRS
Target Group	Investors, lenders, other creditors	Investors, lenders, other creditors	All Stakeholders
Materiality	Financial	Financial	Double Materiality
Number of Topics	3 high degree of overlap with SASB	3-9	10 Topics; 93 Sub-(sub-)topics subject to materiality analysis
Number of ESG KPIs	3-9 per industry	3-24 per industry	1.159 data points
Sector-specific	68 Industries	77 Industries	postponed from June 2024 to June 2026; impacts, risk, opportunities NOT covered by topicals standards
Region	Global	ISSB will be the 'comprehensive global baseline' of sustainability disclosures for capital markets	Europe (+ large non-EU subsidiaries from 2028)
Standard setter/Regulator	SD-M, BMU, BaFin ref., DNK ref.	IFRS Foundation	EU commission / EFRAG
Mandatory	recommended for materiality analysis (of ESG risks) and as a „minimum reporting requirement“	to be endorsed by countries (so far: Australia, Brazil, Canada, Hong Kong, Japan, Kalifornien, Malaysia, New Zealand, Nigeria, Singapore, Taiwan, UK); G7 decision 12/2022; IOSCO called on 130 member jurisdictions to consider ISSB	in the EU

Less is more!

Benefits for capital markets? – Historical proxy data is already available

SD-KPInform®: 2 Databases for standardised material ESG KPIs

- Collaborations of SD-M with **Sustainalytics/Morningstar & imug rating/Moody's ESG**
- **19,000 companies** worldwide are evaluated according to the SD-KPI Standards
- Scores for SD-KPI 1, 2, 3 and accumulated SD-KPIntegration® Score evaluated between 0-100 percent
- **Historical SD-KPInform® databases could be used as a proxy for historical SASB (ISSB) data**
("a high degree of overlap" in SD-KPI analysis and the SASB standards)
- **Databases with a 14-year history (2009-2024) could be used for backtesting in asset management & credit portfolios**
- **Clients: asset managers, banks, index providers, data providers**



SUSTAINALYTICS

a Morningstar company

imug rating
by Ethifinance

MOODY'S
ESG Solutions

SD-M 
SUSTAINABLE DEVELOPMENT MANAGEMENT

SD-KPIntegration®: Software & Services

Company name: Microsoft Corp.

ISIN: US5949181045

Peer Group: Software & Services

SD-KPI	SD-KPIntegration®	Weight	ESG indicators Sustainalytics	Weight	Score	Weighted score
1	Sustainable Products & Services	40%	E.1.7.0 GHG Reduction Programme	10%	100,00	10,00
			E.1.9 Carbon Intensity	20%	0,00	0,00
			E.3.1.1 Sustainable Products & Services	10%	20,00	2,00
2	Customer Incidents	35%	S.3.1.3 Data Privacy & Security Policy	15%	50,00	7,50
			S.3.3 Customer Incidents	20%	50,00	10,00
3	Employee Incidents	25%	S.1.2 Discrimination Policy	7%	100,00	7,00
			S.1.3 Diversity Programmes	8%	75,00	6,00
			S.1.7 Employee Incidents	10%	80,00	8,00
Score					50,50	

SD-KPIIntegration® history: Microsoft Corp.

Peer group: Software & Services

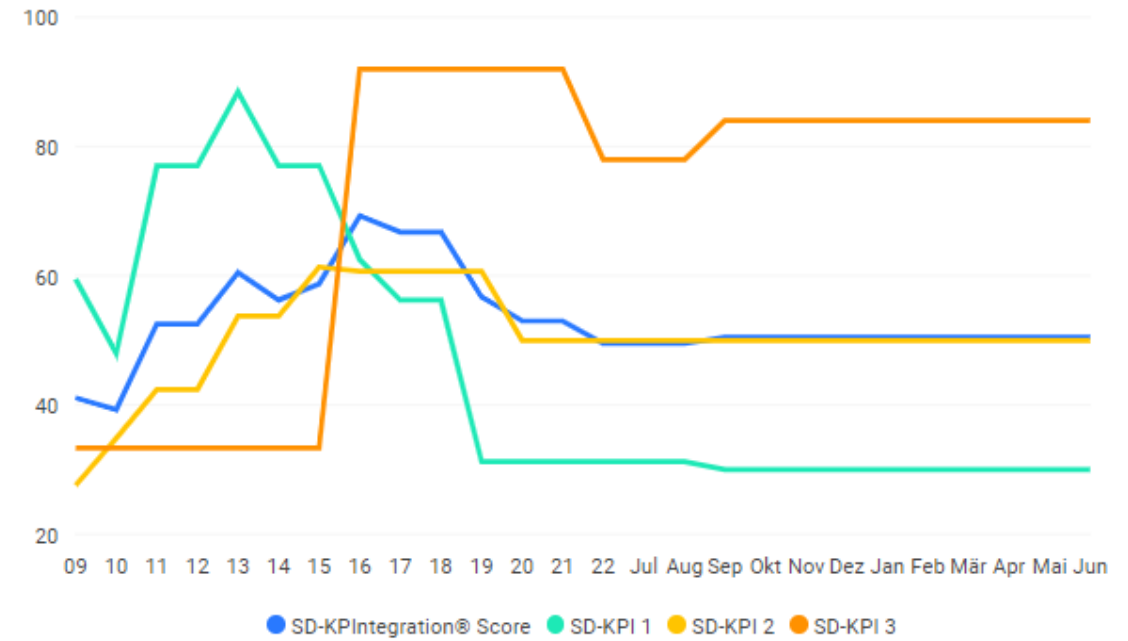
ISIN: US5949181045

SD-KPI 1: Sustainable Products & Services

SD-KPI 2: Customer Incidents

SD-KPI 3: Employee Incidents

SD-KPIs according to [SD-KPI Standard 2016-2024](#)



Date	SD-KPIIntegration® Score	SD-KPI 1 Score	SD-KPI 1 Weight	SD-KPI 2 Score	SD-KPI 2 Weight	SD-KPI 3 Score	SD-KPI 3 Weight
2024-06	50,50	30,00	0,40	50,00	0,35	84,00	0,25
2024-05	50,50	30,00	0,40	50,00	0,35	84,00	0,25

SD-KPIIntegration® history: Microsoft Corp.

Peer group: Software & Services

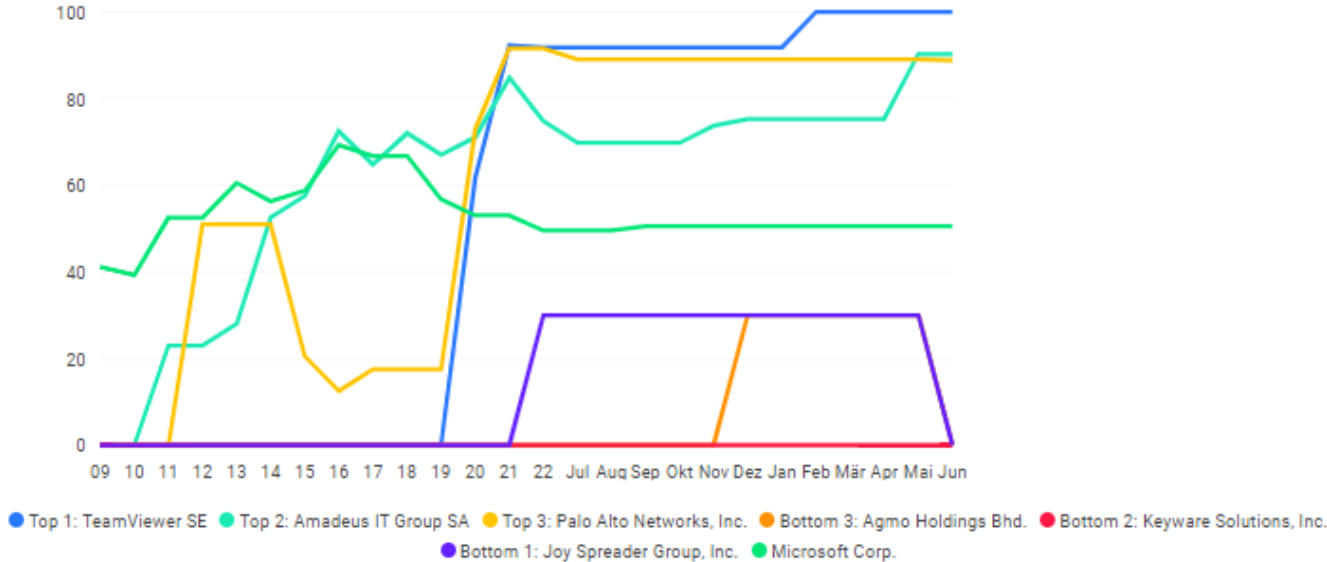
ISIN: US5949181045

SD-KPI 1: Sustainable Products & Services

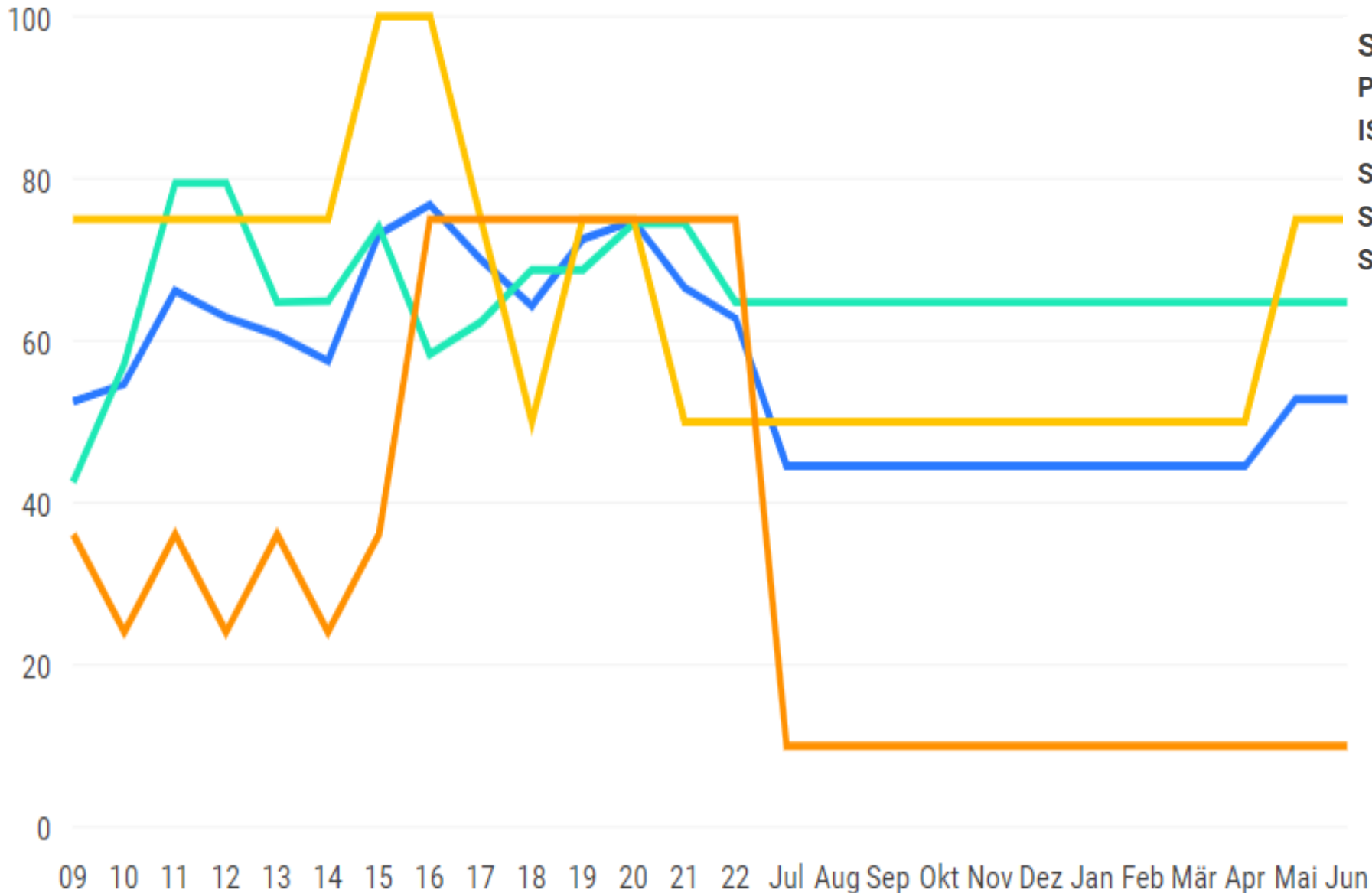
SD-KPI 2: Customer Incidents

SD-KPI 3: Employee Incidents

SD-KPIs according to [SD-KPI Standard 2016-2024](#)



Name	ISIN	SD-KPIIntegration® Score	SD-KPI 1	SD-KPI 2	SD-KPI 3	E.1.7.0 GHG Reduction Programme	E.1.9 Carbon Intensity	E.3.1.1 Sustainable Products & Services	S.3.1.3 Data Privacy & Security Policy	S.3.3 Customer Incidents	S.1.2 Discrimination Policy	S.1.3 Diversity Programmes	S.3.1.3 Data Privacy & Security Policy
TeamViewer SE	DE000A2YN900	100,00	100,00	100,00	100,00	10,00	20,00	10,00	15,00	20,00	7,00	8,00	10,00
Amadeus IT Group SA	ES0109067019	90,25	90,00	89,29	92,00	10,00	20,00	6,00	11,25	20,00	7,00	6,00	10,00
Palo Alto Networks, Inc.	US6974351057	88,80	100,00	78,00	86,00	10,00	20,00	10,00	7,50	19,80	3,50	8,00	10,00



SD-KPIIntegration® history: BASF SE

Peer group: Chemicals

ISIN: DE000BASF111

SD-KPI 1: Employee Fatality Rate

SD-KPI 2: Carbon Intensity

SD-KPI 3: Hazardous Products

● SD-KPIIntegration® Score ● SD-KPI 1 ● SD-KPI 2 ● SD-KPI 3

SD-KPIntegration®: Steel

Company name: voestalpine AG

ISIN: AT0000937503

Peer Group: Steel

SD-KPI	SD-KPIntegration®	Weight	ESG indicators Sustainalytics	Weight	Score	Weighted score
1	Carbon Intensity	35%	E.1.3 EMS Certification	10%	75,00	7,50
			E.1.12 Operations Incidents	15%	80,00	12,00
			E.1.9 Carbon Intensity	10%	0,00	0,00
2	Employee Fatality Rate	34%	S.1.6.6 Employee Fatality Rate	34%	75,00	25,50
3	Society & Community Incidents	31%	S.4.2.2 Community Involvement Programmes	15%	0,00	0,00
			S.4.3 Society & Community Incidents	16%	100,00	16,00
Score					61,00	

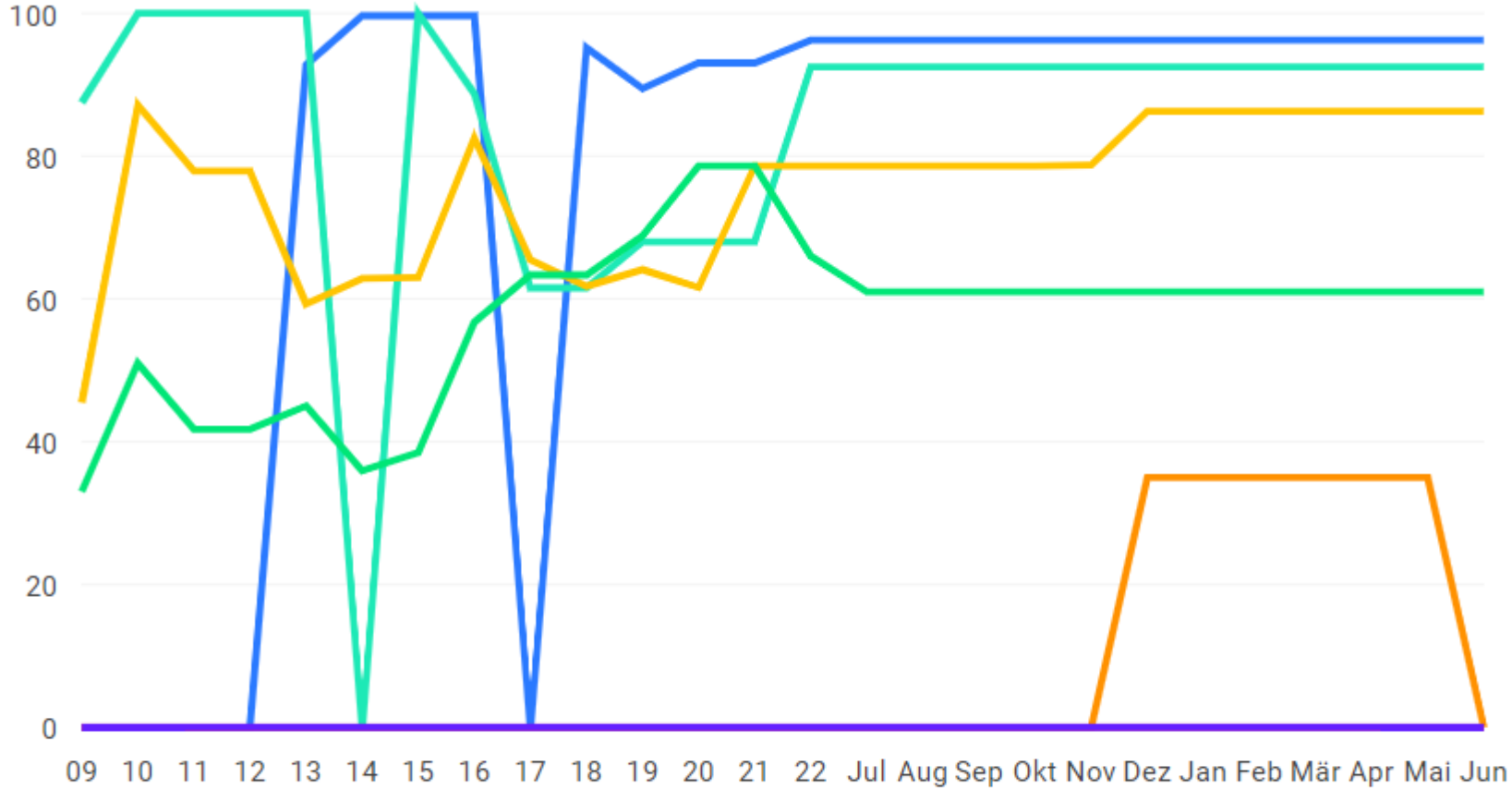
SD-KPIntegration®: Steel

Company name: voestalpine AG

ISIN: AT0000937503

Peer Group: Steel

Month: 06
Year: 2024
Select Score to compare: SD-KPIntegration®



- Top 1: Kumba Iron Ore Ltd.
- Top 2: Outokumpu Oyj
- Top 3: SSAB AB
- Bottom 3: Dongkuk Coated Metal Co., Ltd.
- Bottom 2: Henan Hengxing Science & Technology Co., Ltd.
- Bottom 1: Lingyuan Iron & Steel Co., Ltd.
- voestalpine AG

SD-M® GmbH uses the proprietary SD-KPI standards in a cooperation with the world's second largest ESG research agency *Sustainalytics*, a Morningstar company. The SD-KPIs are modeled using Sustainalytics' 42 peer groups and ESG indicators and quantitatively scored with values between 0 and 100 since 2009. The SD-KPIInform® database evaluates SD-KPIs for more than 19,000 companies worldwide.

SD-M® GmbH also uses the proprietary SD-KPI standards in a cooperation with the ESG rating agency *imug rating*, using data from Moody's ESG Solutions (Moody's® is a registered trademark). The SD-KPIs are thereby modeled using 39 industry and ESG indicators and quantitatively assessed with values between 0 and 100. Further details can be found [here](#).

SD-KPIInform enables banks, investors, asset managers, data and index providers as well as software and consulting firms to easily and systematically integrate standardized material ESG KPIs into risk management, indices, funds, sustainability-linked bonds & loans and credit portfolios (SD-KPIIntegration®).

Due to the high degree of overlap between SD-KPI and SASB standards, SD-KPIInform can be used as a proxy and historical database for SASB and International Sustainability Standards Board (ISSB).



Benefits for capital markets? – Proof for financial materiality of standardised ESG KPIs

SD-KPIndex® Methodology: Tilting conventional standard indices with standardised ESG KPIs

Indices for Sustainability Transition (no exclusions, just over-/underweighting)

SD-KPIntegration® Score	Overweighting / underweighting of the conventional index components
0,00% - 20%	-50%
20,01% - 40%	-25%
40,01% - 60%	0%
60,01% - 80%	+25%
80,01%-100%	+50%

Article 6 SFDR (EU) 2019/2088:

1. Financial market participants shall include descriptions of the following in pre-contractual disclosures:

- (a) the manner in which sustainability risks are integrated into their investment decisions; and
- (b) the results of the assessment of the likely impacts of sustainability risks on the returns of the financial products they make available.**

Benefits for capital markets? – Proof for financial materiality of standardised ESG KPIs

SD-KPIndex® family

- EURO iSTOXX 50 SD-KPI
- iSTOXX Europe 50 SD-KPI
- iSTOXX Europe 600 SD-KPI

- S&P 500 SD-KPI Strategies

- iBoxx SD-KPI EUR Corporates / Financial / Non-Financial
- iBoxx SD-KPI USD Corporates / Financial / Non-Financial
- iBoxx SD-KPI GBP Corporates / Financial / Non-Financial

- **All SD-KPIndices show long-term outperformance against the standard index with small tracking errors**

STOXX | QONTIGO



S&P Global

Outperformance of iSTOXX Europe 600 SD-KPI Index

Risk and return figures¹

Index returns	Return (%)					Annualized return (%)				
	Last month	YTD	1Y	3Y	5Y	Last month	YTD	1Y	3Y	5Y
iSTOXX Europe 600 SD-KPI Index	7.6	-7.7	-1.4	24.9	36.6	N/A	N/A	-1.4	7.8	6.5
STOXX Europe 600 Index	7.8	-7.9	-2.1	23.7	35.3	N/A	N/A	-2.1	7.4	6.3
Index volatility and risk	Annualized volatility (%)					Annualized Sharpe ratio ²				
iSTOXX Europe 600 SD-KPI Index	17.3	21.0	18.0	20.4	17.4	N/A	N/A	-0.1	0.4	0.4
STOXX Europe 600 Index	17.7	21.2	18.1	20.6	17.5	N/A	N/A	-0.1	0.4	0.4
Index to benchmark	Correlation					Tracking error (%)				
iSTOXX Europe 600 SD-KPI Index	1.0	1.0	1.0	1.0	1.0	0.5	0.4	0.4	0.4	0.4
Index to benchmark	Beta					Annualized information ratio				
iSTOXX Europe 600 SD-KPI Index	1.0	1.0	1.0	1.0	1.0	-3.8	1.0	1.7	0.8	0.5

¹ For information on data calculation, please refer to STOXX [calculation reference guide](#).

² Based on EURIBOR1M

(EUR, gross return), all data as of Jul. 29, 2022



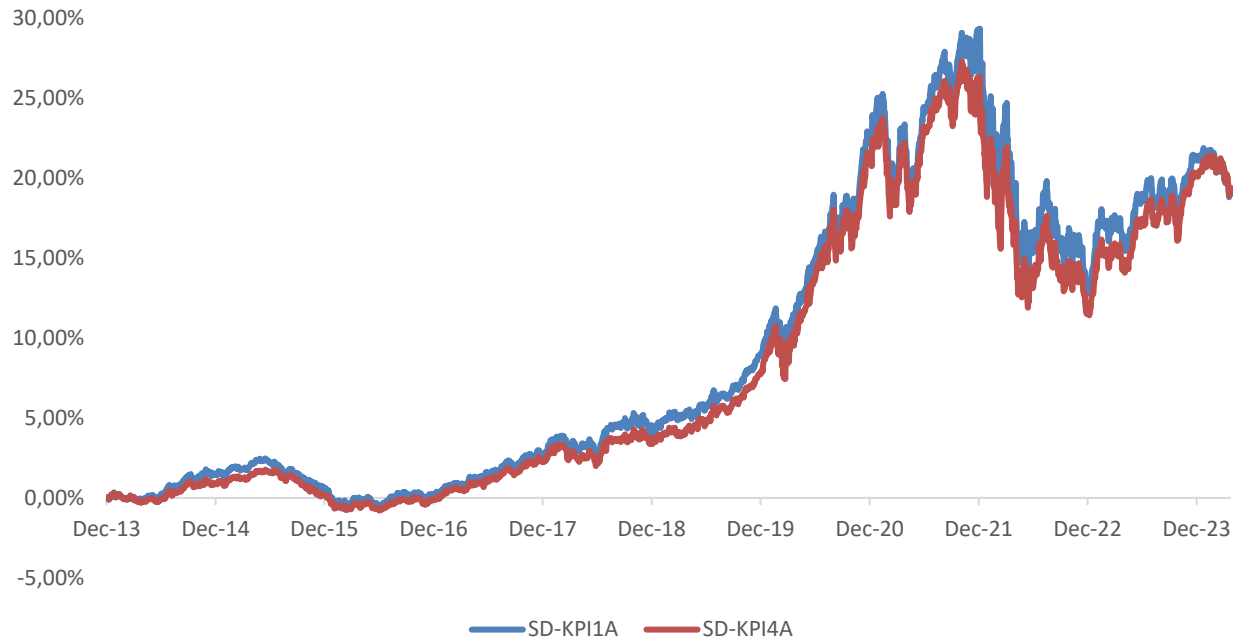
STOXX Ltd. is part of Qontigo



US 500: SD-KPI Tilt Strategies vs SPY ETF

Strategy	Composition	Weighting	Weight Modification Factor
US 500 SD-KPI Tilt 1A	Top-500 US-Listed US Companies by FF MCAP	Modified FF MCAP	Raw Integration Score/50
US 500 SD-KPI Tilt 4A	Top-500 US-Listed US Companies by FF MCAP	Modified FF MCAP	Integration Score Quintiles (-50% - +50% step up 25% for each quintile)

Cumulative Relative Return vs SPY ETF Since 2013



All Data as of March 31 2024 *Not Annualized

Annualized Returns			
	SPY ETF	SD-KPI1A	SD-KPI4A
2024 YTD*	6.76%	5.74%	6.11%
1 Yr	29.88%	29.09%	29.96%
3 Yr	11.49%	10.78%	10.92%
5 Yr	15.05%	15.72%	15.87%
10 Yr	12.96%	13.63%	13.63%

Annualized Volatility (monthly)			
	SPY ETF	SD-KPI1A	SD-KPI4A
1 Yr	13.62%	14.05%	14.01%
3 Yr	17.60%	18.28%	18.26%
5 Yr	18.37%	18.81%	18.78%
10 Yr	15.16%	15.49%	15.45%

Information Ratio vs SPY		
	SD-KPI1A	SD-KPI4A
1 Yr	(0.65)	0.07
3 Yr	(0.44)	(0.39)
5 Yr	0.40	0.52
10 Yr	0.48	0.53

intalcon alpha for
impact

Outperforming S&P 500 by applying
Systematic Strategies & SD-KPIs

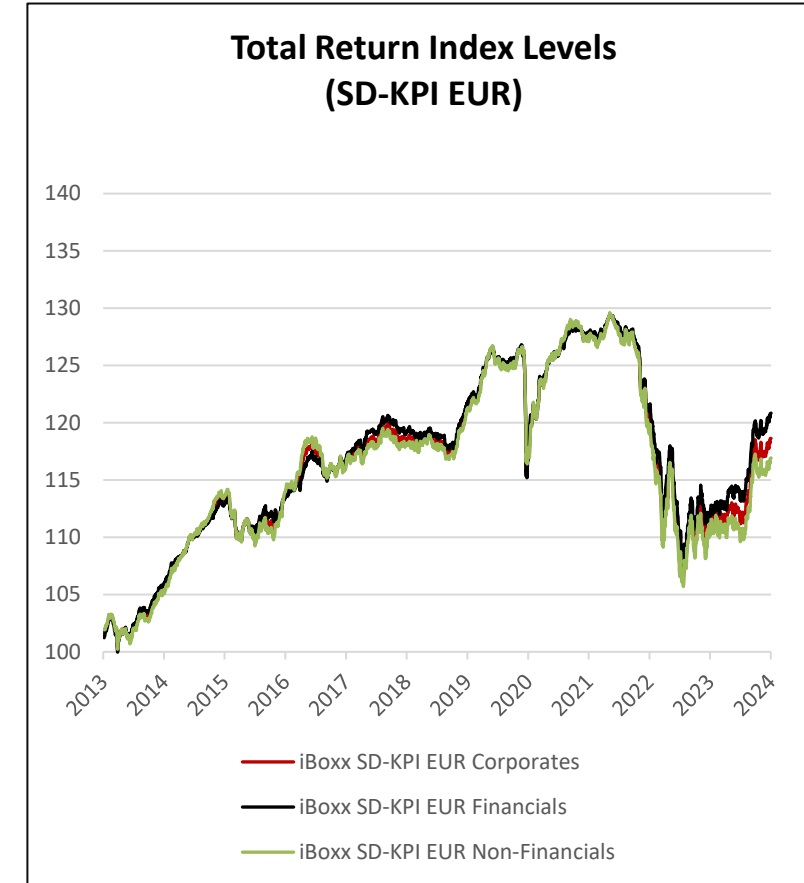
SD-KPIs generate more Alpha & Return

ALPHA	+0.40%
RETURN	+0.28%
VOLATILITY	+0.08%
SHARPE RATIO	+0.02
MAX DRAWDOWN	-3.70%

*All values (except max drawdown) annualized
since September 2009*

iBoxx SD-KPI EUR – Index Performance

Period: 4/04/2013 – 01/04/2024	iBoxx SD-KPI EUR Corporates	iBoxx € Corporates	iBoxx SD-KPI EUR Financials	iBoxx € Financials	iBoxx SD-KPI EUR Non- Financials	iBoxx € Non- Financials
Volatility	3.03%	3.03%	2.82%	2.87%	3.27%	3.26%
Annualized Return	1.37%	1.33%	1.57%	1.54%	1.22%	1.17%
Sharpe (0 rates)	0.45	0.44	0.56	0.54	0.37	0.36
Tracking Error	.003%		.003%		.003%	
Max Drawdown	-17.80%	-18.00%	-16.96%	-17.46%	-18.44%	-18.55%
Max Drawdown Date	21/10/2022	21/10/2022	21/10/2022	21/10/2022	21/10/2022	21/10/2022
Snapshot: 01/04/2024						
Annual Yield	3.63%	3.63%	3.80%	3.82%	3.52%	3.52%
Annual Modified Duration	4.48	4.52	3.92	3.92	4.96	4.96
Annual Spread	127	126	142	143	116	116
Expected Remaining Life	5.2	5.3	4.45	4.46	5.85	5.84
Coupon	2.24%	2.22%	2.37%	2.36%	2.12%	2.12%
Asset Swap Spread	101	101	115	116	91	91
OAS	125	125	141	142	114	114
Number of Bonds	3821	3821	1519	1519	2302	2302



TCBT VanEck iBoxx EUR Corporates UCITS ETF



30 September 2023

Fund Details

Base Currency	EUR
Inception Date	14 April 2011
Domicile	The Netherlands
Net Assets	€33.6M
Shares Outstanding	2,108,390
Total Expense Ratio	0.15%
Product Structure	Physical (Full Replication)
UCITS Compliant	Yes
Rebalance Frequency	Quarterly
Distribution Frequency	Quarterly

Fund Description

The VanEck iBoxx EUR Corporates UCITS ETF is a UCITS-compliant exchange-traded fund that invests in a portfolio of bond securities with the aim of providing investment returns that closely track the performance of the Markit iBoxx EUR Liquid Corporates Index.

Performance History* (%)

Month End as of 30 Sep 2023	1 MO*	3 MO*	YTD*	1 YR	3 YR	5 YR	10 YR	INCEPTION	ETF
ETF	-1.31	-0.33	2.19	2.81	-4.07	-1.09	0.56	1.52	
IBXXELTR (Index)	-1.30	-0.29	2.27	2.85	-4.02	-1.01	0.67	1.72	

Index data up to 28th February 2022 EOD reflects index data of the Markit iBoxx EUR Liquid Corporates Index (IB8A). From 1st March 2022 onwards, the index data reflects that of the Fund's underlying index, the **iBoxx SD-KPI EUR Liquid Corporates Index (IBXXELTR)**. Index history which includes periods prior to the index change shows a blended performance and is not intended for third party use.

Next step banking: ESG Standards for counterparty and credit risk analysis



EBA Report on management and supervision of ESG risks for credit institutions and investment firms (EBA/REP/2021/18)

3. Quantitative and qualitative indicators, metrics and methods to assess ESG risks

3.2 Methodological approaches for assessing and evaluating ESG risks

3.2.3 Exposure Method

“A key step towards making ESG ratings and evaluations more comparable, transparent and hence more effective, is a standardisation of the relevance and importance of different ESG factors for the various industries and companies.”



Minimum Requirements for Risk Management (MaRisk), version of 29.06.2023

BTO 1 Credit business

BTO 1.2 Requirements relating to credit business processes

4 The aspects that are significant for the counterparty default risk of a credit exposure must be identified and assessed, whereby the intensity of these activities depends on the risk content of the exposure. **Sector** and, where applicable, **country risks as well as the impact of ESG risks must be taken into account** in an appropriate manner. When assessing the impact of ESG risks, an appropriately long period of time must be selected.

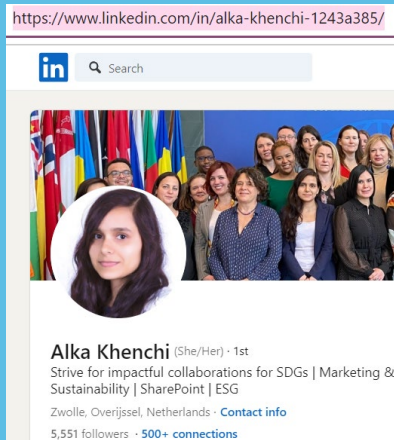
6 Depending on the risk content of the lending transactions, the risks of an exposure must be assessed using risk classification procedures both **as part of the lending decision and in regular or ad hoc assessments. The effects of ESG risks must be taken into account appropriately.** The risk classification must be reviewed annually.

What is the correlation between the risk-adjusted outperformance effect of SD-KPIntegration in corporate bond portfolios and the probability of default (PD) in credit portfolios?

Conclusion: Global ESG standards and their benefits for capital markets

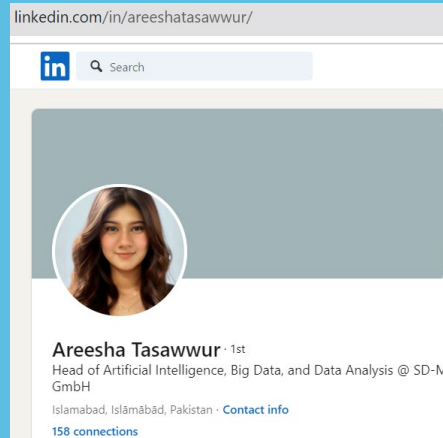
- **ISSB/SASB** will prevail as a 'comprehensive global baseline' for financially material ESG disclosure
- **Industry-specific standards like SD-KPI / SASB Standards** are key for financial materiality
- **Less is more: 3-9 standardised material ESG KPIs per industry are sufficient for steering of equity, corporate bond & credit portfolios**
- **Banks and asset managers could already start using 14 years of historical data for globally standardised material ESG KPIs**
- **Integration of standardised material ESG KPIs into mainstream equity, corporate bonds and credit portfolios have led to risk-adjusted outperformance effects in the long-term**

SD-M's Global Team



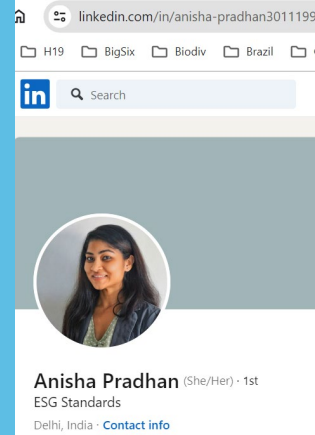
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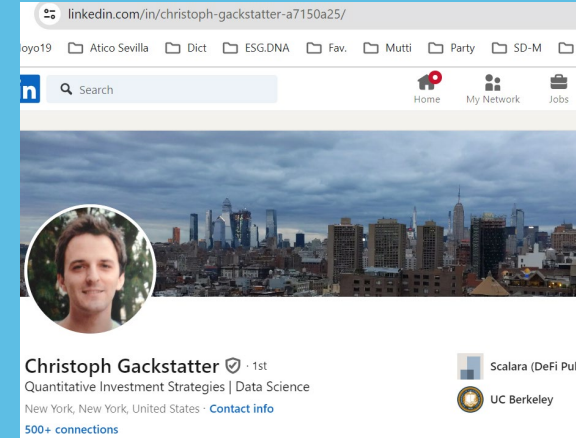
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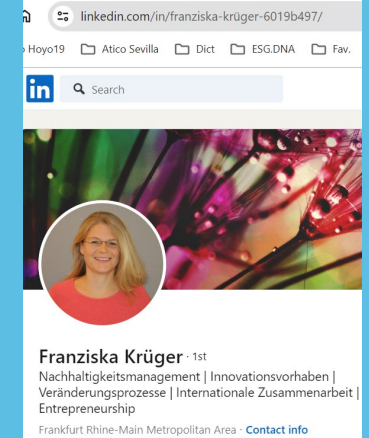
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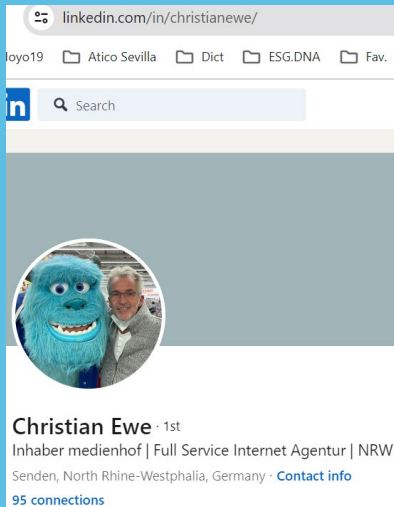
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Scalara (DeFi Pulse)
UC Berkeley



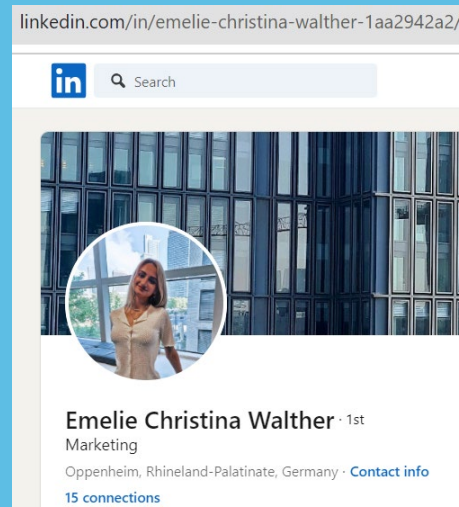
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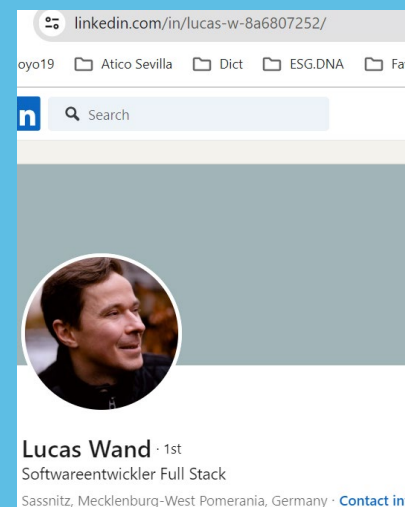
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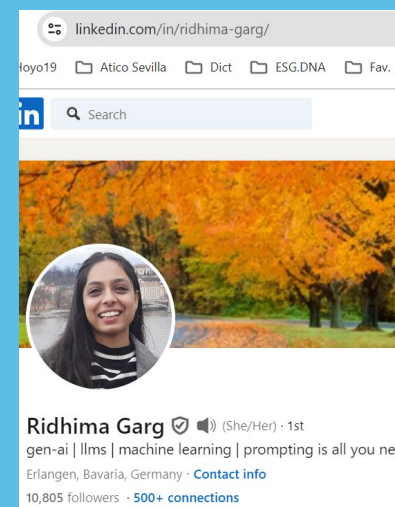
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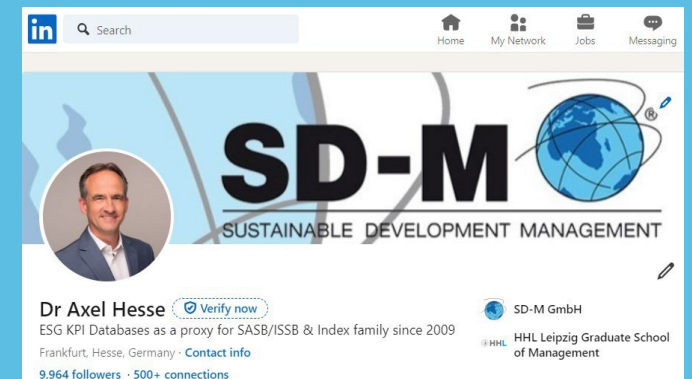
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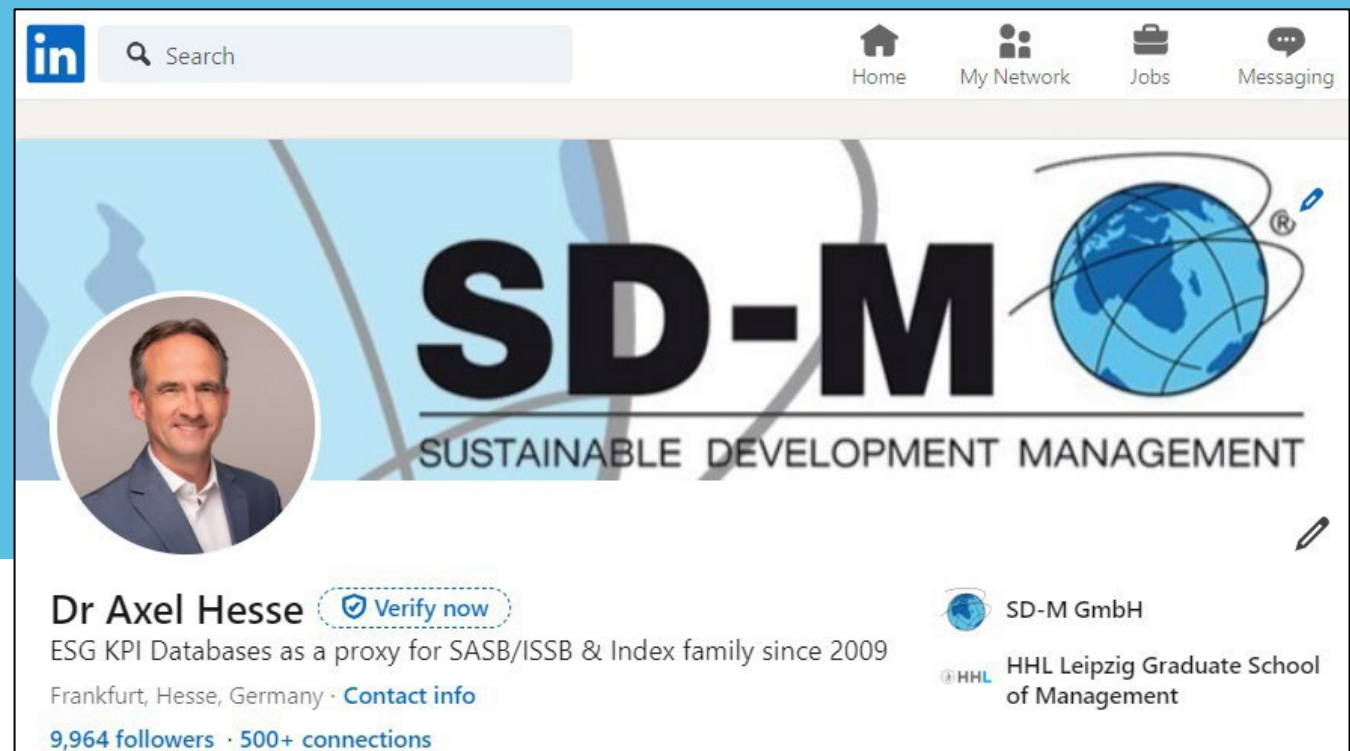
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ESG KPI Databases as a proxy for SASB/ISSB & Index family since 2009
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SD-M
SUSTAINABLE DEVELOPMENT MANAGEMENT

SD-M GmbH
HHL Leipzig Graduate School of Management

Thank you for your attention!



The screenshot shows a LinkedIn profile for Dr. Axel Hesse. At the top, there is a navigation bar with icons for Home, My Network, Jobs, and Messaging. Below this is a search bar and the LinkedIn logo. The profile header features a circular profile picture of Dr. Hesse, the company logo 'SD-M' with a globe icon, and the text 'SUSTAINABLE DEVELOPMENT MANAGEMENT'. The profile name is 'Dr Axel Hesse' with a 'Verify now' button. Below the name, it states 'ESG KPI Databases as a proxy for SASB/ISSB & Index family since 2009' and 'Frankfurt, Hesse, Germany · Contact info'. It also shows '9,964 followers · 500+ connections'. On the right side, there are two affiliations: 'SD-M GmbH' and 'HHL Leipzig Graduate School of Management'.

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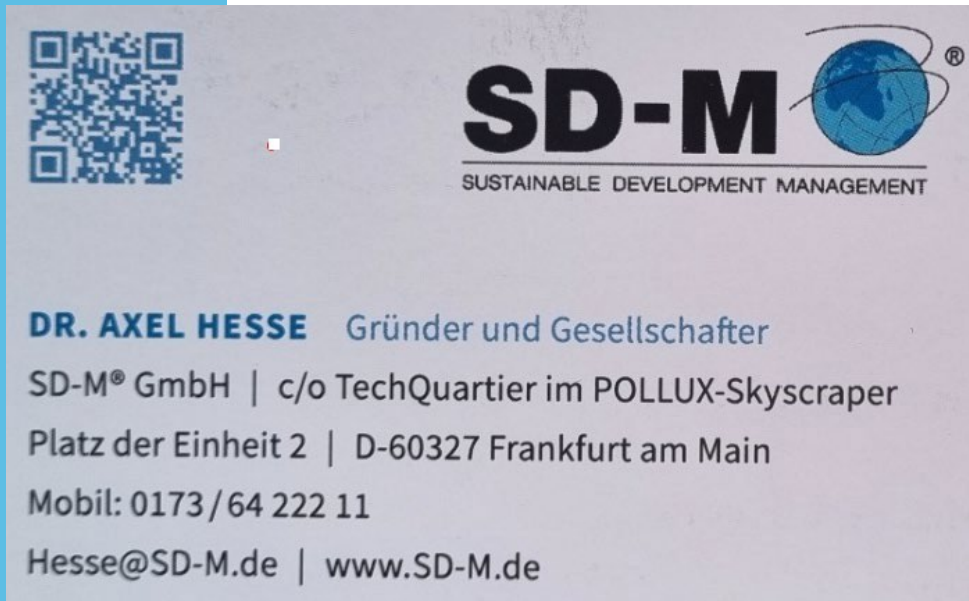
<https://www.linkedin.com/in/dr-axel-hesse/>

Dr. Axel Hesse

Founder & Shareholder

Mobile: +49 173 6422211

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The business card features a QR code on the left and the 'SD-M' logo with a globe icon on the right. Below the logo, it reads 'SUSTAINABLE DEVELOPMENT MANAGEMENT'. The card contains the following text: 'DR. AXEL HESSE Gründer und Gesellschafter', 'SD-M® GmbH | c/o TechQuartier im POLLUX-Skyscraper', 'Platz der Einheit 2 | D-60327 Frankfurt am Main', 'Mobil: 0173 / 64 222 11', and 'Hesse@SD-M.de | www.SD-M.de'.