

ESG Goals Tracker Greenwashing Detector

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Greenwashing

- Greenwashing is a broad umbrella term for different forms and practices of misleading communications of different organizations.

The different forms of greenwashing include below but are not limited to.

- Hidden Trade-Off
- No Proof
- Vagueness
- Irrelevance
- Lesser of Two Evils
- Fibbing
- Worshiping False Labels

- **Selective disclosure**
- Symbolic management
- Deflection of public attention
- **the disconnect between claims of companies and their lobbying and investment activities**

Greenwashing can range from slight exaggeration to full fabrication.

Regulations on Greenwashing



Australia Financial Industry Body sets Anit-Greenwashing Expectations for Fund Managers



SEC targets Greenwashing with New ESG Fund Disclosure Rules



European Commission pushes back implementation of SFDR Sustainable Investment Product Disclosures to 2023



FCA pushes back process to introduce Sustainability Disclosures, ESG Labels for Investors



Singapore unveils Disclosure Rules for ESG Funds to reduce Greenwashing Risk

Challenges to Detection of Greenwashing

The detection of greenwashing across a large set of organizations has so far been a challenge.

- Volume of disclosures
- Numerous communication channels that companies employ to make their SDG related performance known to policymakers, investors, consumers and other stakeholders

- Inconsistent metrics and definitions
- Lack of standardized reporting
- Variable rating systems
- Complex communications

Firms intentionally or unintentionally engage in “greenwashing”.

ESG Goals Tracker

- As an effective discernment of **green** vs. **brown** companies, build a greenwashing detection tool which analyses the claims of companies worldwide and contrasts them with the actual performance and activities of companies
- To combat corporate greenwashing risk and portfolio greenwashing risk, investors can use innovative AI-based ESG analytics tools such as Natural Language Processing (NLP) to detect greenwashing.
- Artificial Intelligence-driven transparency indicators are a valuable complement to ESG analytics tools and ratings currently available in the market.
- ESG Goals Tracker can facilitate investor risk management by identifying risks and opportunities, measuring performance, improving transparency, and indicating a firm's proactivity and progressiveness from their own ESG reports.
- Start by assessing a firm's climate risk exposure and compliance with international reporting standards such as the Task Force for Climate-related Financial Disclosures (TCFD) or/and disclosure of Scope 3 Emissions.

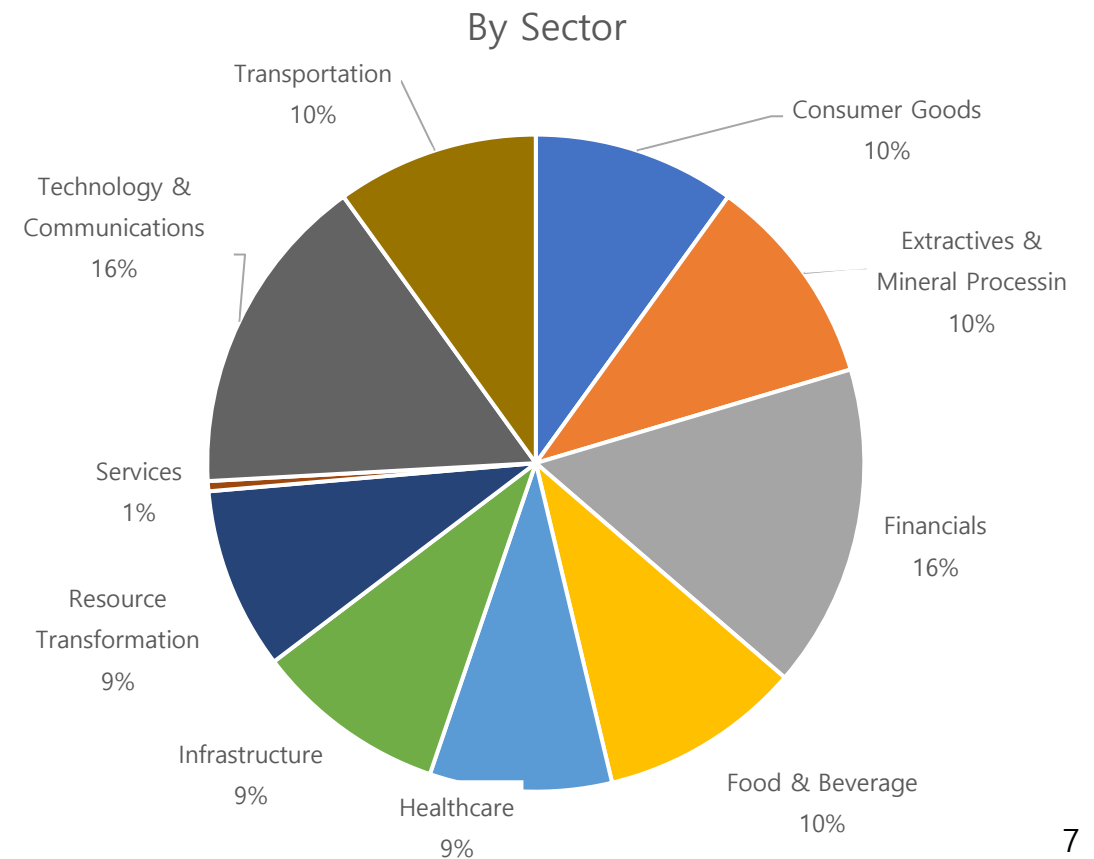
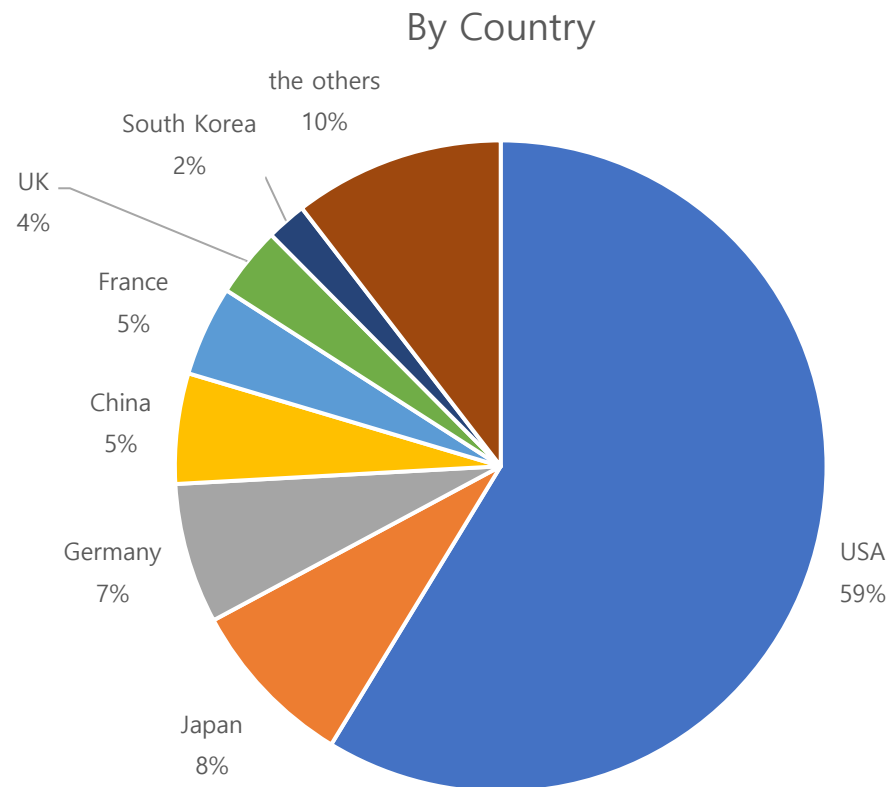
Goal Target DB (GTDB)-1

- Extracted ESG Goals, Targets, and Claims from ESG/CSR Reports
- Categorized them in 26 subthemes with materiality defined by SASB

Company	Goal	Metric	Focus	subtheme	Target	Target_type	Due	Result	Baseline year	Baseline reference	Source year	Link	Page
Toray Industries	100% implementing internal legal and compliance audits of group companies, group companies improving problems found in internal legal and compliance audits in the previous year	% companies	Business ethics	Business Ethics	100		2019	100			2020	https://www.responsibilityreports.com/HostedData/ResponsibilityReportArchive/t/OTC_TRYIF_2020.pdf	103
Toray Industries	100% implementing internal legal and compliance audits of group companies, group companies improving problems found in internal legal and compliance audits in the previous year	% companies	Business ethics	Business Ethics	100		2020	100			2021	https://www.responsibilityreports.com/HostedData/ResponsibilityReports/PDF/OTC_TRYIF_2021.pdf	108
Toray Industries	Achieve 90% at the Board of Directors' positive assessment of the implementation of the Basic Policy for Internal Control Systems	% positive assessment	Business ethics	Business Ethics	90		2017	94.6			2018	https://www.responsibilityreports.com/HostedData/ResponsibilityReportArchive/t/OTC_TRYIF_2018.pdf	89
Toray Industries	Zero number of major violations of laws or ordinances	number of cases	Business ethics	Business Ethics	0		2020	1			2021	https://www.responsibilityreports.com/HostedData/ResponsibilityReports/PDF/OTC_TRYIF_2021.pdf	105
Toray Industries	Reduce the number of distribution incidents to 600 by 2019	number of incidents	Workplace accidents & injuries	Critical Incident Risk Management	600		2019				2019	https://www.responsibilityreports.com/HostedData/ResponsibilityReportArchive/t/OTC_TRYIF_2019.pdf	167
Toray Industries	Set the percentage of group companies experiencing information security-related incidents to 70% by 2016 compared to 2013	%	Data protection	Data Security	70		2016	142	2013		2017	https://www.responsibilityreports.com/HostedData/ResponsibilityReportArchive/t/OTC_TRYIF_2017.pdf	108
Toray Industries	All the group companies that have achieved legally mandated employment rate of persons with disabilities	% companies	Career opportunities for minorities	Employee Engagement, Diversity & Inclusion	100		2019	61.3			2020	https://www.responsibilityreports.com/HostedData/ResponsibilityReportArchive/t/OTC_TRYIF_2020.pdf	123
Toray Industries	All the group companies that have achieved legally mandated employment rate of persons with disabilities	% companies	Career opportunities for minorities	Employee Engagement, Diversity & Inclusion	100		2022	62.5			2021	https://www.responsibilityreports.com/HostedData/ResponsibilityReports/PDF/OTC_TRYIF_2021.pdf	262

Goal Target DB (GTDB)-2

- Extracted 13,203 ESG goals from 201 global companies from 2016 to 2022



ESG Commitment Index 1

Factors to evaluate the quality of ESG Goals

Aspect	Factor	Calculation
Materiality	Goals with materiality	$\%, \# \text{ goals with materiality} / \text{total goals}$
	Coverage of industry materiality	$\%, \# \text{ goals with materiality} / \# \text{ materiality goals of the industry}$
Concreteness	Goals with Due year	$\%, \# \text{ goals with due year} / \text{total goals}$
	Goals with Target	$\%, \# \text{ goals with measurable target} / \text{total goals}$
	Goals with Results	$\%, \# \text{ goals with interim result} / \text{total goals}$
	Goals with Urgency	$\%, \# \text{ goals with less than (5) years tenor} / \text{total goals}$
Action	Results Consistency	$\%, \# \text{ goals with consistent interim results}$
	Targets on Track	$\%, \# \text{ goals on track} / \text{total goals}$



- SBTi based Targets
- Impact

ESG Commitment Index 2

Equal weighted average of 9 factors

- Factors calculated upon ESG report publishment on a yearly basis
- Each factor of the companies converted to z-score
- Z-scores scaled to factor scores ranging from 0 to 100
- The average of the company's 7 factor scores is equal to ESG Commitment Index of the company of the year
- ESG Commitment Index ranges between 0 and 100 theoretically while the actual values between 13.3 and 84.7 over 201 companies

Factors of ESG Commitment Index

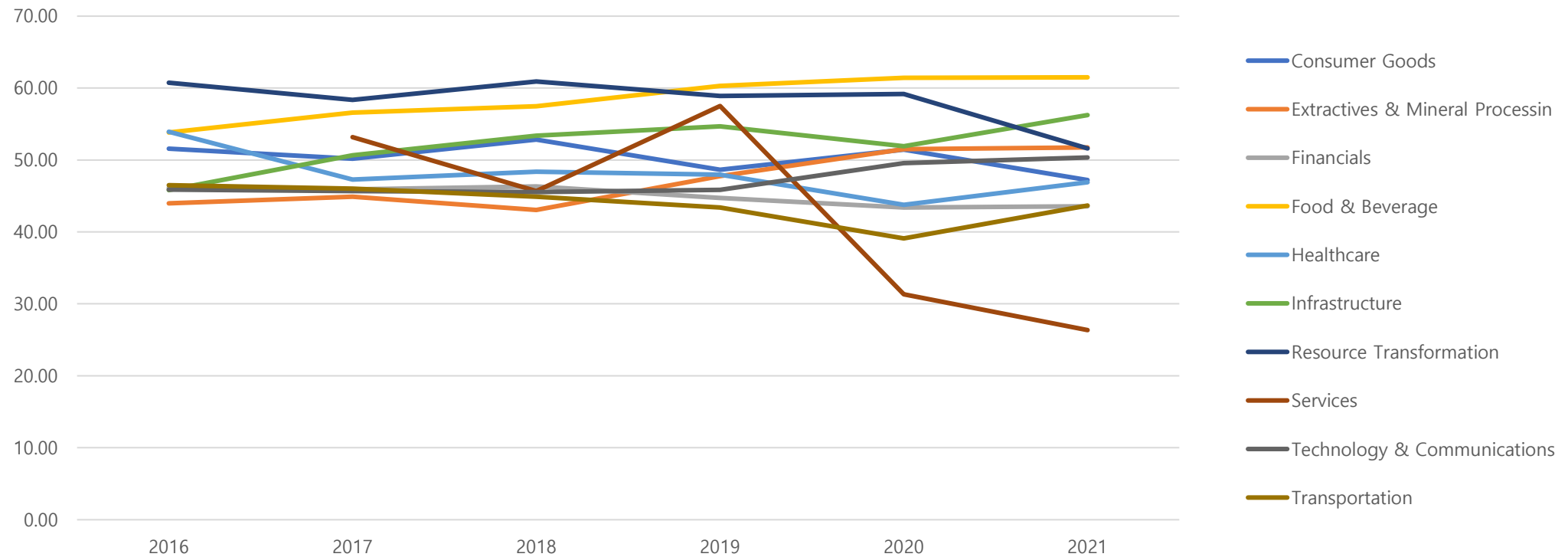
Lower correlations among factors : 0.076 of the average correlation

	Materiality	Materiality Coverage	Due	Target	Urgency	Result	Results Consistency	Target on track	Climate transition
Materiality	1.00								
Materiality Coverage	0.29	1.00							
Due	-0.10	0.07	1.00						
Target	-0.05	-0.14	0.53	1.00					
Urgency	-0.11	-0.10	0.34	0.63	1.00				
Result	0.00	0.10	0.29	0.50	0.45	1.00			
Results Consistency	-0.05	-0.02	0.15	-0.22	-0.21	-0.13	1.00		
Target on track	-0.06	0.04	0.18	-0.21	-0.29	-0.26	0.45	1.00	
Climate transition	-0.02	0.36	0.10	0.03	0.05	0.23	-0.07	0.00	1.00

- Targets are set with due year
- Targets comes with interim results reporting
- Targets with short-term due year

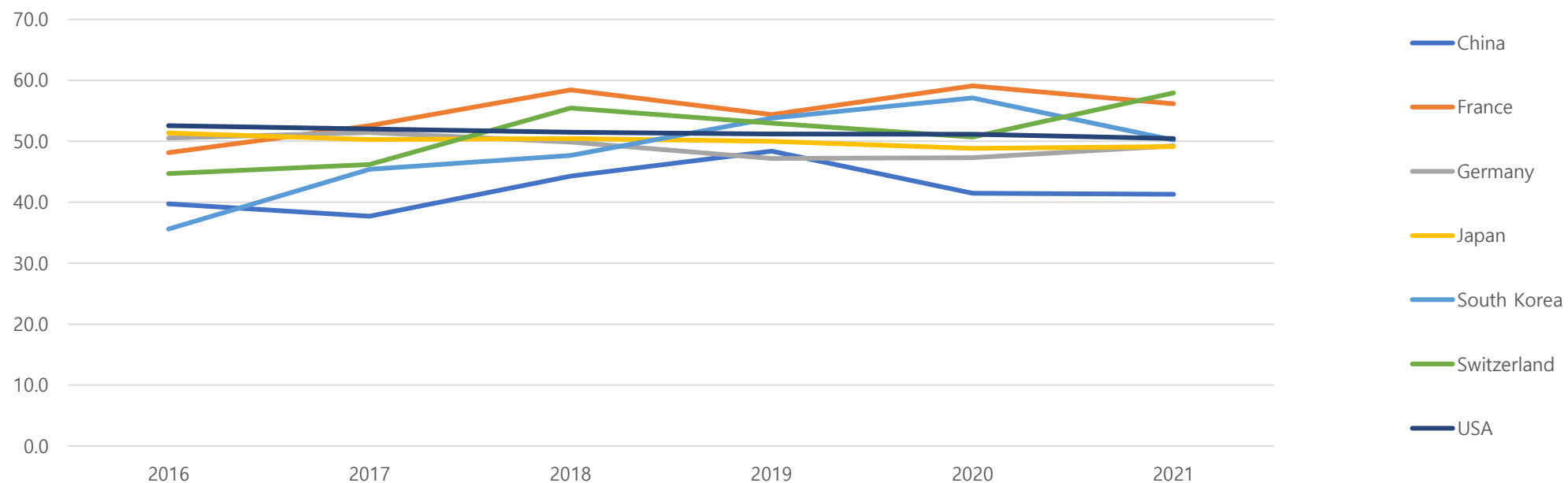
Performance by Sector

- Food & Beverage : on a rise and 1st sector as of year 2021
- Services : got worse recently
- Financials: little change over time



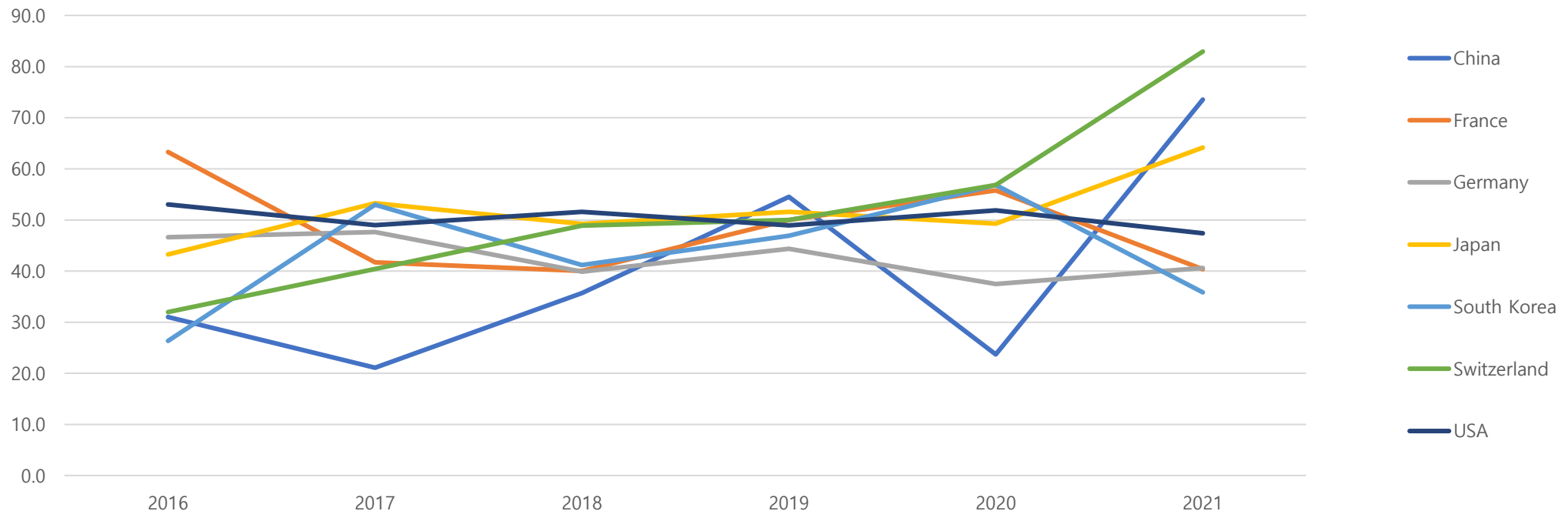
Performance by Country

- Companies in Switzerland and South Korea: got better
- Companies in USA, Japan & Germany: average performance
- Companies in China: got worse recently



Climate Transition Reporting by Country

- Companies in Switzerland: got better and improved recently
- Companies in Japan and China: improved recently
- Companies in USA: average performance



Performances of Japanese companies

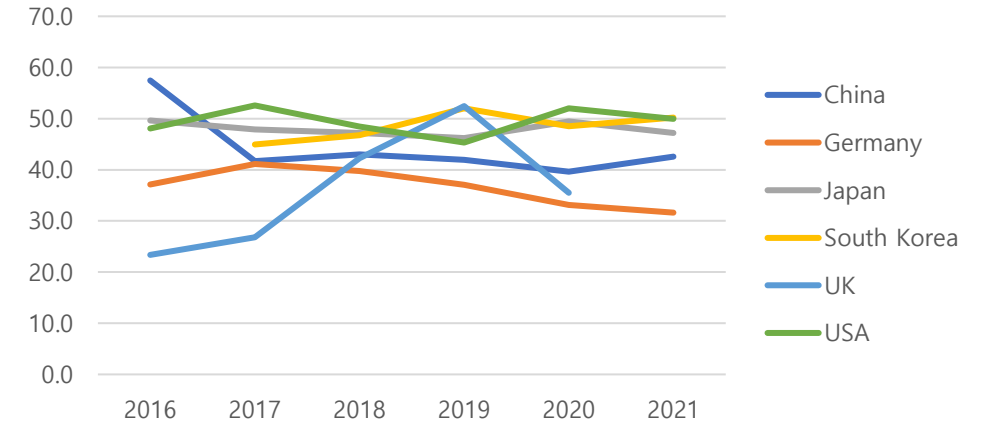
2021 publishment

Company name	Commitment
Toray Industries	70.48
Toshiba	66.04
Mitsubishi Electric Corp	56.49
N.T.T.	50.77
Toyota Motor	50.65
Seven & I	50.56
Sony	50.54
Hitachi	50.43
Nissan Motor	47.44
Fujitsu Ltd.	46.74
Aeon	46.38
Panasonic	45.93
Marubeni	42.93
Softbank	41.97
Honda Motor	35.90
JX Holdings	32.65

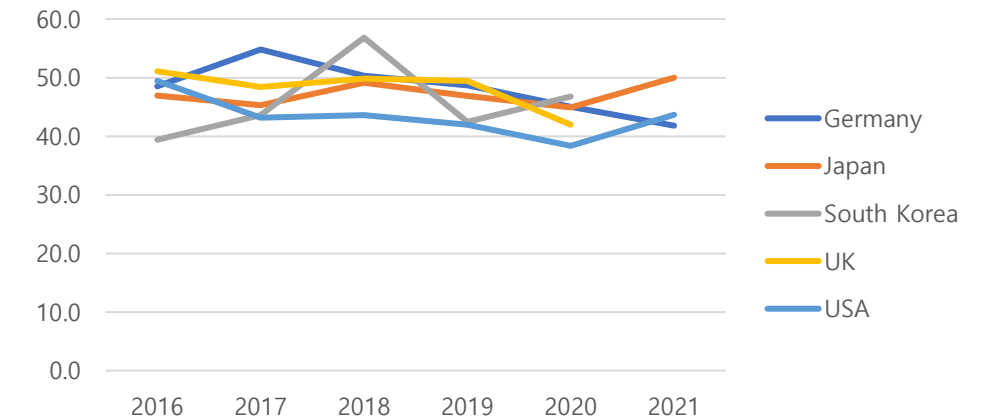
16 Japanese companies in 6 Sectors

- Technology & Communications : 5
- Transportation :4
- Resource Transformation :3
- Food & Beverage :2
- Consumer Goods :1
- Extractives & Mineral Processing:1

Technology & Communications



Transportation



Time-series of ESG Commitment Index

Consistency of the performance

Top10 2017	Top10 2018	Top10 2019	Top10 2020	Top10 2021
Dell	J&J	J&J	POSCO	Enel
Enel	Enel	Enel	Enel	Saint-Gobain
Caterpillar	Ecolab	Dell	Boeing	AbbVie
Unilever	Caterpillar	Campbell Soup	Archer Daniels Midland	3M
J&J	Dell	International Paper	3M	Citigroup
Coca-Cola	McDonald's	P&G	J&J	Campbell Soup
Intel	Becton Dickinson	Mondelez International	Campbell Soup	Cisco Systems
International Paper	Toray Industries	Engie	Texas Instruments	Toray Industries
P&G	International Paper	Hartford Financial Services	Cisco Systems	Engie
Becton Dickinson	P&G	Sinopec Group	Intel	J&J
Bottom10 2017	Bottom10 2018	Bottom10 2019	Bottom10 2020	Bottom10 2021
Walgreens	Norfolk Southern	China Life Insurance	UPS	Allstate
Prudential Financial	Capital One Financial	Petrobras	Thermo Fisher Scientific	CITIC Group
Amerisourcebergen	Union Pacific	Comcast	Comcast	JX Holdings
LVMH	PNC Financial Services	Prudential Financial	Emerson Electric	Thermo Fisher Scientific
Vodafone	Amerisourcebergen	Wells Fargo	Microsoft	Deutsche Telekom
Capital One Financial	Arcelormittal	Norfolk Southern	Halliburton	Halliburton
Sinopec Group	Prudential Financial	China Telecommunications	China Telecommunications	Northrop Grumman
Emerson Electric	Walgreens	CenturyLink	Prudential Financial	Synchrony Financial
Norfolk Southern	Synchrony Financial	Synchrony Financial	Synchrony Financial	Lincoln National
CITIC Group	CenturyLink	Union Pacific	Norfolk Southern	Comcast

What's next

- The more data, the more companies
- Tracking ESG goals until its due year by
 - tracking achievements of that specific goal
 - detecting disappearance of the goal declared previously
 - detecting changes to the target of goals
 - detecting changes to the due year of the goals
- Applying dynamic materiality as per the different framework
- Making comparisons material goals among companies in the same industry
- Coming up with metrics for Climate Risk Management
- Enhancing NLP based language model for ESG goals extraction