Course 2024–2025 in Sustainable Finance
Lecture 1. Introduction

Thierry Roncalli*

*Amundi Asset Management[1]

*University of Paris-Saclay

November 2024

[1] The opinions expressed in this presentation are those of the authors and are not meant to represent the opinions or official positions of Amundi Asset Management.

Agenda

Definition

*"Sustainable finance refers to the process of taking **environmental, social and governance (ESG) considerations** into account when making investment decisions in the financial sector, leading to more long-term investments in sustainable economic activities and projects. **Environmental considerations** might include climate change mitigation and adaptation, as well as the environment more broadly, for instance the preservation of biodiversity, pollution prevention and the circular economy. **Social considerations** could refer to issues of inequality, inclusiveness, labour relations, investment in human capital and communities, as well as human rights issues. The **governance** of public and private institutions — including management structures, employee relations and executive remuneration — plays a fundamental role in ensuring the inclusion of social and environmental considerations in the decision-making process." (European Commission).*

Many words, one concept

RI, SI, SRI, ESG, etc.

Responsible investment (RI)

Responsible investment is an approach to investing that explicitly recognizes the relevance to the investor of environmental, social and governance factors, as well as the long-term health of the market as a whole

Sustainable investing (SI)

Sustainable investing is an investment approach that considers environmental, social and governance factors in portfolio selection

Socially responsible investing (SRI)

SRI is an investment strategy that is considered socially responsible, because it invests in companies that have ethical practices

Environmental, Social and Governance (ESG)

Environmental, Social, and Corporate Governance (ESG) refers to the factors that measure the sustainability of an investment

Definition

Sustainable Investing

$\approx$

Socially Responsible Investing (SRI)

$\approx$

Environmental, Social, and Governance (ESG)

Remark

Blue Finance $\subset$ **Green Finance**, Climate Finance $\subset$ Sustainable Finance

Historical perspective

- Responsible investment (RI): 2000's
- ESG investing (ESG): 2010's
- Sustainable finance (SF): 2020's

Why?

Historical perspective

- At the beginning, sustainable finance mainly concerned final investors and asset owners (ethics) $\Rightarrow$ **responsible investment**
- Then, it gains momentum in asset management $\Rightarrow$ **ESG investing**
- Finally, it spreads across all financial actors (e.g. issuers, banks, central banks, etc.) $\Rightarrow$ **Sustainable finance**

Historical perspective

- In 1758, the Quaker Philadelphia yearly meeting prohibited its members from participating in the slave trade (buying or selling humans)
- The first SRI mutual fund (Pioneer Fund) was created in 1928 by Philip Carret for evangelical Protestants.
- During the Vietnam War, shareholders organized resolutions against the production of napalm and Agent Orange (e.g., Dow Chemical)
- Creation of the Pax World Fund in 1971 (mixing both financial and social criteria for the stock selection)
- Emergence of the concept of "**sin stocks**"

Faith-based investing = Do no harm

The Friedman-Freeman debate

- 1953: Development of corporate social responsibility (CSR)
- Friedman doctrine & the **shareholder theory**

> *"There is one and only one social responsibility of business — to use its resources and engage in activities designed to increase its profits so long as it stays within the rules of the game, which is to say, engages in open and free competition without deception or fraud." (Friedman, 1962, 1970).*

- Freeman doctrine & the **stakeholder theory** (shareholders vs. customers, suppliers, employees, local communities, government agencies, financiers, etc.)

⇒ Corporate social performance (CSP) & corporate financial performance (CFP).

UN Global Compact (GC, July 2000)

The 10 principles are:

- Human rights
  1. Businesses should support and respect the protection of internationally proclaimed human rights;
  2. Ensure that they are not complicit in human rights abuses.
- Labor
  3. Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
  4. The elimination of all forms of forced and compulsory labor;
  5. The effective abolition of child labor;
  6. The elimination of discrimination in respect of employment and occupation.
- Environment
  7. Businesses should support a precautionary approach to environmental challenges;
  8. Take initiatives to promote greater environmental responsibility;
  9. Promote the development and diffusion of environmentally friendly technologies.
- Anti-corruption
  10. Businesses should work against corruption in all its forms, including extortion and bribery.

From 2004 to 2008, the UN Global Compact, the IFC & the Swiss government sponsored a series of conferences "*Who Cares Wins*" for investment professionals $\Rightarrow$ the term **ESG** was first coined in the 2004 WCW report

Investment bans

- In 1986, the US Congress passed the "*Comprehensive Anti-Apartheid Act*", which banned new investments in South Africa
- The Sudan Divestment Task Force (SDTF) was formed in 2005 to coordinate and provide resources for the Sudan divestment campaign in response to the genocide occurring in the Darfur region
- The US "*Sudan Accountability and Divestment Act*" came into force in December 2007

The climate factor

- The Intergovernmental Panel on Climate Change (IPCC) was established in 1988 by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP)
- Publication of AR1-AR6
- June 1992: Earth Summit in Rio de Janeiro (Brazil)
    1. Convention on Biological Diversity (CBD)
    2. UN Framework Convention on Climate Change (UNFCCC)
        - COP3: Kyoto Protocol in 1997
        - COP21: Paris Agreement in 2015

ESG motivations

Figure 1: The raison d'être of ESG investing

A myriad of acronyms

How many acronyms do you know?

A myriad of acronyms

CAT: Cap-And-Trade, CBI: Climate Bonds Initiative, **CDP: Carbon Disclosure Project**, CDR: Carbon Dioxide Removal, CDSB: Climate Disclosure Standards Board, CI: Carbon Intensity, **COP: Conference of the Parties**, **CTB: Climate Transition Benchmark**, DAC: Direct Air Capture, DICE: Dynamic Integrated Climate-Economy Model, ETS: Emissions Trading Scheme, Eurosif: European Sustainable Investment Forum, ESG: Environmental, Social and Governance, GB: Green Bond, **GBP: Green Bonds Principles**, : Greenhouse gas Emissions per unit of Value Added, **GHG: Greenhouse Gaz**, **GIIN: Global Impact Investing Network**, GLP: Green Loans Principles, GQE: Green Quantitative Easing, GRI: Global Reporting Initiative, **GSIA: Global Sustainable Investment Alliance**, HLEG: High Level Expert Group on Sustainable Finance, IAM: Integrated Assessment Model (economic model of climate risk), IIRC: International Integrated Reporting Council, **IPCC: Intergovernmental Panel on Climate Change**, **NDC: Nationally Determined Contribution**, NFRD: Non-financial Reporting Directive, NGFS: Network for Greening the Financial System, OPS: One Planet Summit, **PAB: Paris Aligned Benchmark**, PBOC: People's Bank of China (China green bonds), **PRI: Principles for Responsible Investment**, **RCP: Representative Concentration Pathway (climate scenario)**, SASB: Sustainability Accounting Standards Board, SB: Social Bond, SBP: Social Bonds Principles, SBT: Science-Based Target, SCC: Social Cost of Carbon (= optimal carbon tax), SDA: Sectoral Decarbonisation Approach **SDG: Sustainable Development Goals**, **SFDR: Sustainable Finance Disclosure Reporting**, SIB: Social Impact Bond, SRI: Socially Responsible Investing, SSB: Sustainabilty Standards Board (IFRS), SSP: Shared Socioeconomic Pathway, **TCFD: Task Force on Climate-Related Financial Disclosures**, TEG: Technical Expert Group on Sustainable Finance, UNPRI: Principles for Responsible Investment (PRI)

Many financial actors

ESG financial ecosystem

- Asset owners (pension funds, sovereign wealth funds (SWF), insurance and institutional investors, retail investors, etc.)
- Asset managers
- ESG rating agencies
- ESG index sponsors
- Banks
- ESG associations (GSIA, UNPRI, etc.)
- Regulators and international bodies (governments, financial and industry regulators, central banks, etc.)
- **Issuers** (equities, bonds, loans, etc.)
- Society and people

ESG Investing $\Leftrightarrow$ ESG Financing (= Sustainable Finance)

The issuer point of view of ESG

Corporate financial performance (CFP)

- Friedman (1970)
- Shareholder theory
- Corporations have no social responsibility to the public or society
- Their only responsibility is to its shareholders (profit maximization)

Corporate social responsibility (CSR)

- Freeman (2010)
- Stakeholder theory
- Corporations create negative externalities
- They must have social and moral responsibilities
- Impact on the cost-of-capital and business risk

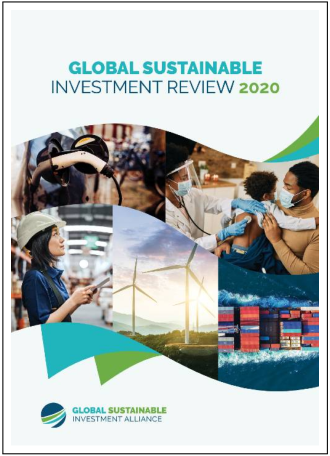
Sustainable investment forums

GSIA members

- The European Sustainable Investment Forum (Eurosif), http://www.eurosif.org
- Responsible Investment Association Australasia (RIAA), https://responsibleinvestment.org
- Responsible Investment Association Canada (RIA Canada), https://www.riacanada.ca
- UK Sustainable Investment & Finance Association (UKSIF), https://www.uksif.org
- The Forum for Sustainable & Responsible Investment (US SIF), https://www.ussif.org
- Dutch Association of Investors for Sustainable Development (VBDO), https://www.vbdo.nl/en/
- Japan Sustainable Investment Forum (JSIF), https://japansif.com/english

Sustainable investment forums

Figure 2: 2020 & 2022 GSIA reports



Initiatives

Initiatives

- Principles for responsible investment (PRI)
- Climate Action 100+
- Net zero alliances: (NZAOA, NZAM, PAII, NZBA, NZIA, etc) $\Rightarrow$ GFANZ

PRI (or UNPRI)

Figure 3: Principles for Responsible Investment (PRI)

https://www.unpri.org

PRI

PRI (or UNPRI)

- Early 2005: UN Secretary-General Kofi Annan invited a group of the world's largest institutional investors to join a process to develop the Principles for Responsible Investment
- April 2006: The Principles were launched at the New York Stock Exchange
- 6 ESG principles
- The 63 founding signatories are 32 asset owners[a] and 31 asset managers[b] and data providers[c]

[a] AP2, CDC, CDPQ, CalPERS, ERAFP, FRR, IFC, NZSF, NGPF, PGGM, UNJSPF, USS, etc.

[b] Amundi (CAAM), Sumitomo Trust, BNP PAM, Mitsubishi Trust, Threadneedle, Aviva, Candriam, etc.

[c] Trucost, Vigeo, etc.

PRI

Signatories' commitment

"As institutional investors, we have a duty to act in the best long-term interests of our beneficiaries. In this fiduciary role, we believe that environmental, social, and corporate governance (ESG) issues can affect the performance of investment portfolios (to varying degrees across companies, sectors, regions, asset classes and through time).
We also recognise that applying these Principles may better align investors with broader objectives of society. Therefore, where consistent with our fiduciary responsibilities, we commit to the following:

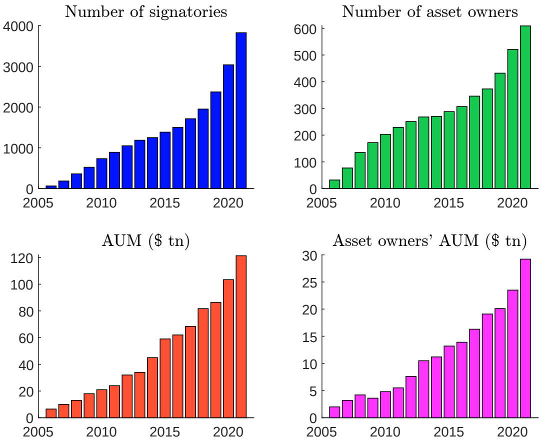
- Principle 1: We will incorporate ESG issues into investment analysis and decision-making processes.
- Principle 2: We will be active owners and incorporate ESG issues into our ownership policies and practices.
- Principle 3: We will seek appropriate disclosure on ESG issues by the entities in which we invest.
- Principle 4: We will promote acceptance and implementation of the Principles within the investment industry.
- Principle 5: We will work together to enhance our effectiveness in implementing the Principles.
- Principle 6: We will each report on our activities and progress towards implementing the Principles.

The Principles for Responsible Investment were developed by an international group of institutional investors reflecting the increasing relevance of environmental, social and corporate governance issues to investment practices. The process was convened by the United Nations Secretary-General.
In signing the Principles, we as investors publicly commit to adopt and implement them, where consistent with our fiduciary responsibilities. We also commit to evaluate the effectiveness and improve the content of the Principles over time. We believe this will improve our ability to meet commitments to beneficiaries as well as better align our investment activities with the broader interests of society.
We encourage other investors to adopt the Principles."

Source: `https://www.unpri.org`

PRI

Figure 4: PRI Signatory growth



Source: `https://www.unpri.org`

Regulators: Who? Why?

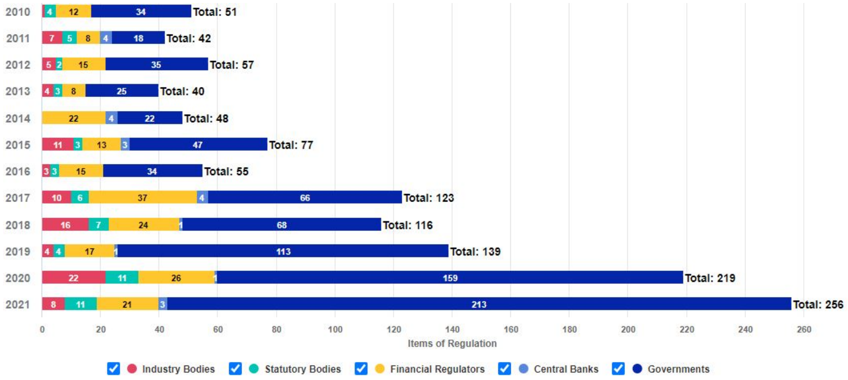
Table 1: The supervision institutions in finance

	Banks	Insurers	Markets	All sectors
Global	BCBS	IAIS	IOSCO	FSB
EU	EBA/ECB	EIOPA	ESMA	ESFS
US	FDIC/FRB	FIO	SEC	FSOC

- Greenwashing
  - Explicit & deliberate greenwashing;
  - Unintentional greenwashing.
- Fiduciary duties

ESG regulations

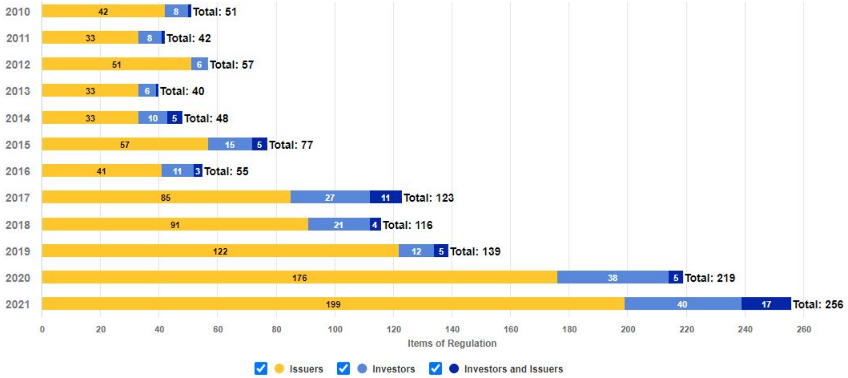
Figure 5: Who will regulate ESG? — The regulators viewpoint (MSCI, 2022)



Source: `https://www.msci.com/who-will-regulate-esg`.

ESG regulations

Figure 6: Who will regulate ESG? — The regulated viewpoint (MSCI, 2022)



Source: https://www.msci.com/who-will-regulate-esg.

ESG regulations

Visit the MSCI website

https://www.msci.com/who-will-regulate-esg

and obtain the detailed list of regulations

by year, country, regulator, regulated investors, etc.

The example of central banks

Figure 7: Network of Central Banks and Supervisors for Greening the Financial System (NGFS)

- Launched at the Paris One Planet Summit (OPS) on December 2017
- 8 founding members: Banco de Mexico, BoE, BdF, Dutch Central Bank, Buba, Swedish FSA, HKMA, MAS and PBOC
- As of March 19th 2021, the NGFS consists of 89 members (CBs, EBA, EIOPA, ESMA) and 13 observers (BCBS, IMF, IAIS, IOSCO)

The example of central banks

Go the NGFS website (https://www.ngfs.net) and download the NGFS climate scenarios: https://www.ngfs.net/en/publications/ngfs-climate-finance-research-portal

See also https://data.ene.iiasa.ac.at/ngfs (NGFS scenario explorer hosted by IIASA[2])

[2] International Institute for Applied Systems Analysis

Rating agencies

- Early stage (1990-2010): Eiris (1985, UK), KLD (1988, US), Jantzi Research (1992, Canada), GES (1992, Sweden), Innovest (1995, US), SAM (1995, Switzerland), RepRisk (1998, Switzerland), Oekom (1999, Germany), Ethix (1999, Sweden), Trucost (2000, UK), Inrate (2001, Switzerland), Vigeo (2002, France), DSR (2002, Netherlands), EthiFinance (2004, France), etc.
- Consolidation of the industry (2010-2020): ISS ESG, Moody's, MSCI, Refinitiv, Reprisk, S&P Global, Sustainalytics.

Rating agencies

Consolidation in the 2010s:

- Vigeo and Eiris merged in October 2015 to form Vigeo-Eiris (V.E), which is acquired by Moody's in April 2019
- In September 2015 and March 2018, ISS acquired Ethix SRI Advisors and Oekom to form ISS ESG solutions (ISS-ethix, ISS-climate and ISS-oekom). In November 2020, ISS is majority owned by Deutsche Börse Group
- In February and November 2009, RiskMetrics acquired Innovest and KLD. RiskMetrics is bought by MSCI in 2010, which creates MSCI ESG Research LLC
- In September 2009, DSR and Jantzi Research merged to form Sustainalytics. In the 2010s, Sustainalytics acquired Responsible Research (Singapore), ESG Analytics (Switzerland), Solaron (India) and GES (Sweden). In April 2020, Sustainalytics becomes a wholly-owned subsidiary of Morningstar.
- S&P Global acquired Trucost in October 2016 and the ESG ratings business of RobecoSAM in November 2019

Rating agencies

1. ESG data
2. ESG scores and ratings
3. ESG indices

Reporting frameworks

Table 2: List of the main reporting frameworks

Perimeter	Acronym	Name	Dates
General	GC	UN Global Compact Initiative	2000/2000
	GRI	Global Reporting Initiative	1997/2000
	IIRC	International Integrated Reporting Council	2010/2013
	ISSB	International SustainabilityÂăStandards Board	2021/2023
	SASB	Sustainability Accounting Standards Board	2011/2016
	SDGs	UN Sustainable Development Goals	2015/2016
Climate	CDP	Carbon Disclosure Project	2000/2000
	CDSB	Climate Disclosure Standards Board	2007/2015
	GHG Protocol	Greenhouse Gas Protocol	1998/2001
	PCAF	Partnership for Carbon Accounting Financials	2019/2020
	SBTi	Science Based Targets initiative	2015/2015
	TCFD	Task Force on Climate-Related Financial Disclosures	2015/2017

International Sustainability Standards Board (ISSB)

On 26 June 2023, ISSB published the two IFRS standards that will take effect in January 2024:

- IFRS S1 general requirements for disclosure of sustainability-related financial information
- IFRS S2 climate-related disclosures

Sustainable Development Goals

Figure 8: The SDGs icons

Source: `https://sdgs.un.org/goals#icons`.

Sustainable Development Goals

Table 3: The 17 SDGs

#	Name	Description	E	S	G
1	No poverty	End poverty in all its forms everywhere		✓	
2	Zero hunger	End hunger, achieve food security and improved nutrition and promote sustainable agriculture		✓	
3	Good health and well-being	Ensure healthy lives and promote well-being for all at all ages		✓	
4	Quality education	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all		✓	
5	Gender equality	Achieve gender equality and empower all women and girls		✓	✓
6	Clean water and sanitation	Ensure availability and sustainable management of water and sanitation for all	✓	✓	
7	Affordable and clean energy	Ensure access to affordable, reliable, sustainable and modern energy for all	✓		
8	Decent work and economic growth	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all		✓	✓
9	Industry, innovation and infrastructure	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	✓	✓	✓

Source: `https://sdgs.un.org/goals`.

Sustainable Development Goals

Table 4: The 17 SDGs

#	Name	Description	E	S	G
10	Reduced inequality	Reduce inequality within and among countries		✓	
11	Sustainable cities and communities	Make cities and human settlements inclusive, safe, resilient and sustainable	✓		✓
12	Responsible consumption and production	Ensure sustainable consumption and production patterns	✓	✓	✓
13	Climate action	Take urgent action to combat climate change and its impacts	✓		✓
14	Life below water	Conserve and sustainably use the oceans, seas and marine resources for sustainable development	✓		
15	Life on land	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	✓		
16	Peace, justice, and strong institutions	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels		✓	✓
17	Partnerships for the goals	Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development			✓

Source: `https://sdgs.un.org/goals`.

GHG Protocol

The GHG Protocol corporate standard classifies a company's greenhouse gas emissions in three scopes[3]:

- **Scope 1**: Direct GHG emissions (○)
- **Scope 2**: Consumption of purchased energy (○ ○)
- **Scope 3**: Other indirect GHG emissions (● ●)
  - **Scope 3 upstream**: emissions associated to the supply side
    1. First tier direct (●)
    2. Tier 2 and 3 suppliers (● ●)
  - **Scope 3 downstream**: emissions associated with the product sold by the entity
    1. Use of the product (● ● ●)
    2. Waste disposal & recycling (● ● ● ●)

[3] Measurement robustness: from ○ ○ ○ ○ (very high) to ● ● ● ● (very low)

Carbon Disclosure Project (CDP)

Each year, CDP sends a questionnaire to organizations and collects information on three environmental dimensions:

1. Climate change (based on the GHG Protocol)
2. Forest management
3. Water security

Carbon Disclosure Project (CDP)

Table 5: Examples of 2019 carbon emissions and intensity

Company	Emission (in tCO_2e) $\mathcal{SC}_1$	$\mathcal{SC}_2$	$\mathcal{SC}_3^{\text{up}}$	$\mathcal{SC}_3^{\text{down}}$	Revenue (in $ mn)	Intensity (in $tCO_2e/\$$ mn) $\mathcal{SC}_1$	$\mathcal{SC}_2$	$\mathcal{SC}_3^{\text{up}}$	$\mathcal{SC}_3^{\text{down}}$
Amazon	5 760 000	5 500 000	20 054 722	10 438 551	280 522	20.5	19.6	71.5	37.2
Apple	50 549	862 127	27 624 282	5 470 771	260 174	**0.2**	**3.3**	**106.2**	21.0
BNP Paribas	64 829	280 789	1 923 307	1 884	78 244	0.8	3.6	24.6	0.0
BP	49 199 999	5 200 000	103 840 194	582 639 687	276 850	177.7	18.8	375.1	2 104.5
Caterpillar	905 000	926 000	15 197 607	401 993 744	53 800	16.8	17.2	282.5	7 472.0
Danone	722 122	944 877	28 969 780	4 464 773	28 308	25.5	33.4	**1 023.4**	**157.7**
Exxon	111 000 000	9 000 000	107 282 831	594 131 943	255 583	434.3	35.2	419.8	2 324.6
JPMorgan Chase	81 655	692 299	3 101 582	15 448 469	115 627	0.7	6.0	26.8	133.6
LVMH	67 613	262 609	11 853 749	942 520	60 083	1.1	4.4	197.3	15.7
Microsoft	113 414	3 556 553	5 977 488	4 003 770	125 843	0.9	28.3	47.5	31.8
Nestle	3 291 303	3 206 495	61 262 078	33 900 606	93 153	35.3	34.4	**657.6**	**363.9**
Pfizer	734 638	762 840	4 667 225	133 468	51 750	14.2	14.7	90.2	2.6
Samsung Electronics	5 067 000	10 998 000	33 554 245	60 978 947	197 733	**25.6**	**55.6**	169.7	308.4
Volkswagen	4 494 066	5 973 894	65 335 372	354 913 446	282 817	15.9	21.1	231.0	1 254.9
Walmart	6 101 641	13 057 352	40 651 079	32 346 229	514 405	11.9	25.4	79.0	62.9

Source: Trucost (2022) & Authors' calculations.

TCFD

- TCFD = Task Force on Climate Related Financial Disclosures
- TCFD is established by the FSB in 2015 and chaired by Michael Bloomberg
- TCFD $\Rightarrow$ ISSB

TCFD

Table 6: The 11 recommended disclosures (TCFD, 2017)

Recommendation	#	Recommended Disclosure
Governance	1	Board oversight
	2	Management's role
Strategy	3	Risks and opportunities
	4	Impact on organization
	5	Resilience of strategy
Risk management	6	Risk ID and assessment processes
	7	Risk management processes
	8	Integration into overall risk management
Metrics and targets	9	Climate-related metrics
	10	Scope 1, 2, 3 GHG emissions
	11	Climate-related targets

Source: `https://www.fsb-tcfd.org`.

TCFD

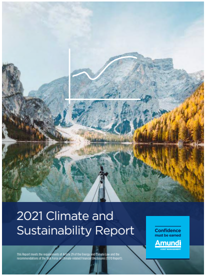
Examples of recommended metrics

- GHG emissions (absolute scope 1, scope 2, and scope 3 GHG emissions; financed emissions by asset class; weighted average carbon intensity)
- Transition risks (volume of real estate collaterals highly exposed to transition risk; concentration of credit exposure to carbon-related assets; percent of revenue from coal mining)
- Physical risks (number and value of mortgage loans in 100-year flood zones; proportion of real assets exposed to 1:100 or 1:200 climate-related hazards)
- Climate-related opportunities (proportion of green buildings, green revenues)
- Capital deployment (green CAPEX)
- Internal carbon prices (internal carbon price, shadow carbon price)
- Remuneration

TCFD

Figure 9: Examples of TCFD reports

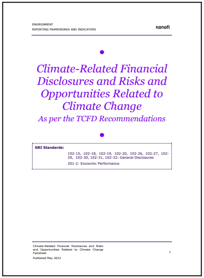
Amundi (2021)



BlackRock (2021)

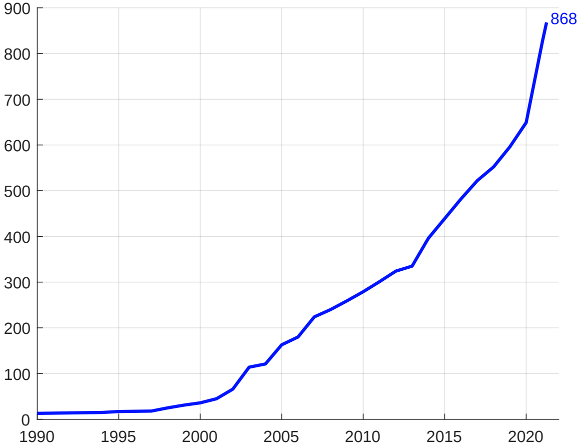
Engie (2022)

Sanofi (2021)



Regulatory framework

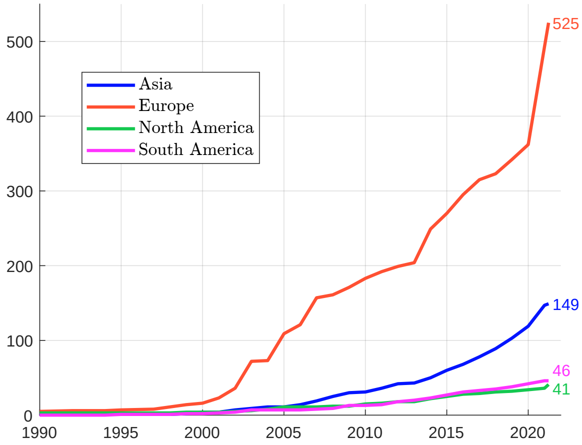
Figure 10: Total number of ESG regulations



Source: PRI (2022), `https://www.unpri.org/policy/regulation-database`.

Regulatory framework

Figure 11: Number of ESG regulations per region



Source: PRI (2022), `https://www.unpri.org/policy/regulation-database`.

European Union

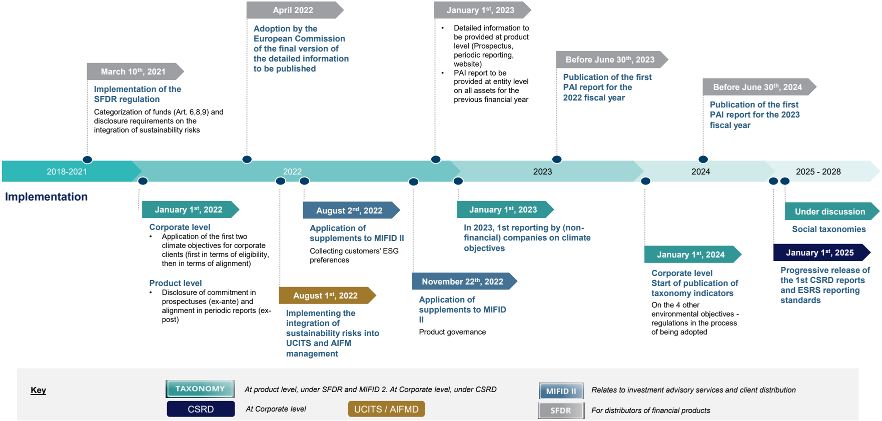
- The action plan on sustainable finance (May 2018)
- The European Green Deal (December 2019)
- The Fit-for-55 package (July 2021)
- The REPowerEU plan or energy security package (May 2022)

European Union

- EU taxonomy regulation
- Climate benchmarks (PAB)
- Sustainable finance disclosure regulation (SFDR)
- MiFID II & IDD
- Corporate sustainability reporting directive (CSRD)

European Union

Figure 12: Sustainable finance action plan timeline

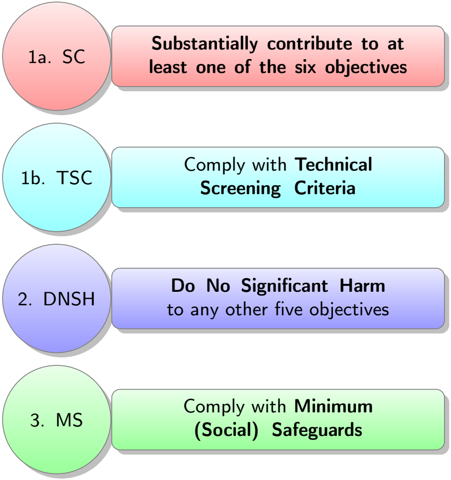


EU taxonomy regulation

1. Climate change mitigation
2. Climate change adaptation
3. Sustainable use and protection of water and marine resources
4. Transition to a circular economy
5. Pollution prevention and control
6. Protection and restoration of biodiversity and ecosystem

EU taxonomy regulation

Figure 13: EU taxonomy for sustainable activities



EU taxonomy regulation

Table 7: Activities eligible for the six environmental objectives

Activity name	# of activity numbers (1)	(2)	(3)	(4)	(5)	(6)
Accommodation activities						1
Arts, entertainment and recreation		3				
Construction and real estate	7	7		5		
Disaster risk management		2	1			
Education		1				
Energy	31	31				
Environmental protection and restoration activities	1	1				1
Financial and insurance activities		2				
Forestry	4	4				
Human health and social work activities		1				
Information and communication	2	4	1	1		
Manufacturing	21	17	1	2	2	
Professional, scientific and technical activities	3	3				
Services				6		
Transport	20	20				
Water supply, sewerage, waste management and remediation	12	13	3	7	4	
Total	101	106	6	21	6	2

Source: EU Taxonomy Compass,
`https://ec.europa.eu/sustainable-finance-taxonomy`.

EU taxonomy regulation

EU taxonomy KPIs

- Green turnover (sales/revenues)
- **Green CapEx** (capital expenditure)
- Green OpEx (operating expenses)

EU taxonomy regulation

- Large public-interest companies already subject to the NFRD
- Large companies that are not presently subject to the NFRD, meeting two out of three CSRD criteria (250+ employees, balance sheet of €25+ mn, net turnover of €50+ mn)
- Listed SMEs and other undertakings
- Financial market participants

Climate benchmarks

The common principles are:

- A year-on-year self-decarbonization of 7% on average per annum, based on scope 1, 2 and 3 emissions
- A minimum carbon intensity reduction $\mathcal{R}^-$ compared to the investable universe
- A minimum exposure to sectors highly exposed to climate change

Two labels:

1. CTB: (climate transition benchmark) $\Rightarrow \mathcal{R}^- = 30\%$
2. PAB: (Paris aligned benchmark) $\Rightarrow \mathcal{R}^- = 50\%$

SFDR

- Article 6 (or non-ESG products)
  It covers standard financial products that cannot be Article 8 or Article 9
- Article 8 (or ESG products)
  It corresponds to financial products which "*promote, among other characteristics, environmental or social characteristics, or a combination of those characteristics, provided that the companies in which the investments are made follow good governance practices*"
- Article 9 (or sustainable products)
  In addition to the points covered by Article 8, these financial products have a sustainable investment objective

+ SI (sustainable investment): S or/and E objectives
+ PAI (principal adverse impact): 64 PAIs (18 mandatory, 22 E 24 S)

SFDR

Corporates		
Climate and other environment-related indicators		
	1	GHG emissions
	2	Carbon footprint
	3	GHG intensity of investee companies
	4	Exposure to companies active in the fossil fuel sector
	5	Share of non renewable energy consumption and production
	6	Energy consumption intensity per high impact climate sector
	7	Activities negatively affecting biodiversity sensitive areas
	8	Emissions to water
	9	Hazardous waste ratio
Social and employee, respect for human rights, anti-corruption and anti-bribery matters		
	10	Violations of UN Global Compact principles and OECD Guidelines for Multinational Enterprises
	11	Lack of processes and compliance mechanisms to monitor compliance with UN Global Compact principles and OECD Guidelines for MNEs
	12	Unadjusted gender pay gap
	13	Board gender diversity
	14	Exposure to controversial weapons (anti personnel mines, cluster munitions, chemical and biological weapons)
Sovereigns and supranationals		
	15	GHG intensity (Climate indicator)
	16	Investee countries subject to social violations (social indicator)
Real estate assets		
Climate and other environment-related indicators		
	17	Exposure to fossil fuels through real estate assets
	18	Exposure to energy-inefficient real estate assets

Table 8: The 18 mandatory principal adverse indicators

MiFID II & IDD

- MiFID II Suitability Test
- Integration of sustainability preferences to define the suitable product
- Integration of ESG criteria in the product governance

If the client has any sustainability preferences (yes/no), it has to choose one or a combination of the criteria below:

1. Minimum percentage in environmentally sustainable investments aligned to the EU Taxonomy
2. Minimum percentage invested in sustainable investments as defined in the SFDR (Articles 8 and 9)
3. Quantitative/qualitative elements of principal adverse impacts defined by the client

CSRD

- **E**nvironmental factors: (1) climate change mitigation; (2) climate change adaptation; (3) water and marine resources; (4) resource use and circular economy; (5) pollution; (6) biodiversity and ecosystems.
- **S**ocial factors: (1) equal opportunities for all; (2) working conditions; (3) respect for human rights.
- **G**overnance factors: (1) role and composition of administrative, management and supervisory bodies; (2) business ethics and corporate culture, including anti-corruption and anti-bribery; (3) political engagements of the undertaking, including its lobbying activities; (4) management and quality of relationships with business partners.

single materiality $\neq$ double materiality

CSRD

- CSRD will replace progressively NFRD (Non-Financial Reporting Directive)
- Under the NFRD, large companies have to publish information related to environmental matters, social matters and treatment of employees, respect for human rights, anti-corruption and bribery, and diversity on company boards (in terms of age, gender, educational and professional background)
- The NFRD reporting rules apply to large public-interest companies with more than 500 employees (approximately 11 700 companies across the EU)

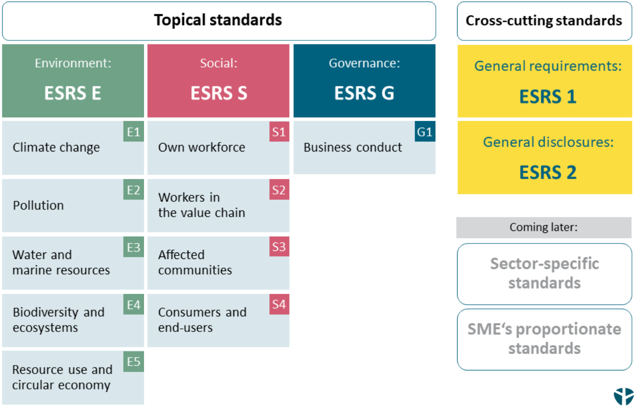
CSRD

Who need to comply?

- EU companies (two of the following three conditions)
  - 250+ employees
  - Balance sheet of €25+ mn
  - Net turnover of €50+ mn
- Non-EU based companies with a net turnover of €150+ mn in the European Union

CSRD

Figure 14: ESRS standards



Source: `https://denkstatt.eu/esrs-standards-explained`.

ESG strategies

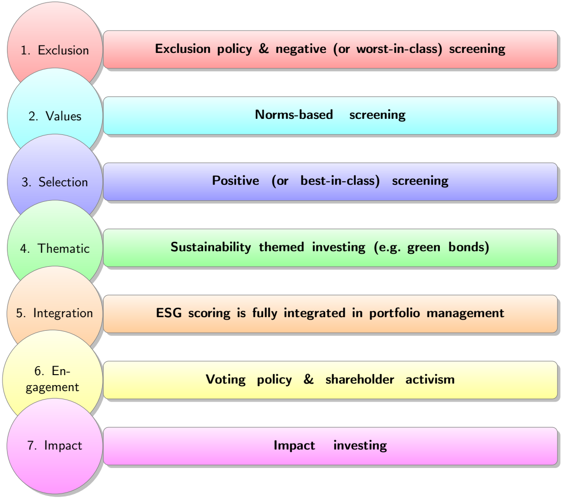


Figure 15: Categorisation of ESG strategies (Eurosif, 2019)

ESG strategies

Exclusion/Negative Screening

The exclusion from a fund or portfolio of certain sectors, companies or practices based on specific ESG criteria (worst-in-class)

Source: Global Sustainable Investment Alliance (2019)

Examples:

- Systematic exclusion of issuers rated **CCC**
- Exclusion of issuers rated **BB**, **B** and **CCC**
- Sector exclusion (e.g., Energy)
- Sub-industry exclusion (e.g. Coal & Consumable Fuels)
- Exclusion list of individual issuers

ESG strategies

Values/Norms-based Screening (and Red Flags)

Screening of investments against minimum standards of business practice based on international norms, such as those issued by the OECD, ILO, UN (Global Compact) and UNICEF[a]

[a] In Europe, the top exclusion criteria are (1) controversial weapons (Ottawa and Oslo treaties), (2), tobacco, (3) all weapons, (4) gambling, (5) pornography, (6) nuclear energy, (7) alcohol, (8) GMO and (9) animal testing (Eurosif, 2019)

Source: Global Sustainable Investment Alliance (2019)

Examples:

- Controversial sectors: controversial weapons, conventional weapons, civilian firearms, nuclear weapons, nuclear power, thermal coal, tobacco, alcohol, gambling, adult entertainment, genetically modified, fossil fuels production & reserves
- Many ETF funds

ESG strategies

Selection/Positive Screening

Investment in sectors, companies or projects selected for positive ESG performance relative to industry peers (best-in-class)

Source: Global Sustainable Investment Alliance (2019)

Examples:

- Selection of issuers rated **AAA**, **AA** and **A**
- Selection of issuers that have improved their rating (Momentum ESG strategy)

ESG strategies

Thematic/Sustainability Themed Investing

Investment in themes or assets specifically related to sustainability (for example clean energy, green technology or sustainable agriculture)

Source: Global Sustainable Investment Alliance (2019)

Examples:

- Funds invested in Green Bonds
- Funds invested in Social Bonds
- Funds invested in Sustainable Infrastructure
- Funds invested in Natural Ressources

ESG strategies

ESG Integration

The systematic and explicit inclusion by investment managers of environmental, social and governance factors into financial analysis

Source: Global Sustainable Investment Alliance (2019)

Examples:

- The stock picking score is a mix (50/50) of a fundamental score and an ESG score
- The fund must have an ESG score greater than the score of its benchmark

ESG strategies

Corporate Engagement/Shareholder Action

The use of shareholder power to influence corporate behavior, including through direct corporate engagement (i.e., communicating with senior management and/or boards of companies), filing or co-filing shareholder proposals, and proxy voting that is guided by comprehensive ESG guidelines.

Source: Global Sustainable Investment Alliance (2019)

Examples:

- Voting policy
- Public divestment
- Biodiversity and deforestation financing
- Engagement with target companies on a specific subject (e.g., pay ratio or living wage)
- Escalated engagement: concerns public, proposing shareholder resolutions & litigation

ESG strategies

Impact Investing

Targeted investments aimed at solving social or environmental problems, and including community investing, where capital is specifically directed to traditionally underserved individuals or communities, as well as financing that is provided to businesses with a clear social or environmental purpose

Source: Global Sustainable Investment Alliance (2019)

Examples:

- Funds with a Social Impact objective
- Funds invested in Green Bonds
- PAB and CTB ETFs

ESG strategies

Impact Investing/Community Investing

- Impact Investing
  Investing to achieve positive, social and environmental impacts – requires measuring and reporting against these impacts, demonstrating the intentionality of investor and underlying asset/investee, and demonstrating the investor contribution
- Community Investing
  Where capital is specifically directed to traditionally underserved individuals or communities, as well as financing that is provided to businesses with a clear social or environmental purpose. Some community investing is impact investing, but community investing is broader and considers other forms of investing and targeted lending activities.

Source: Global Sustainable Investment Alliance (2021)

The market of ESG investing

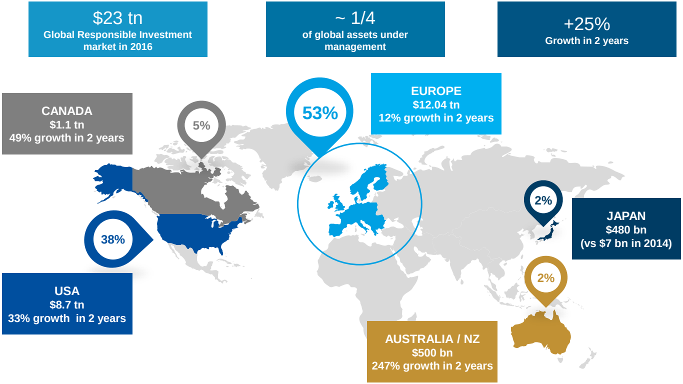
Table 9: ESG asset growth by region

Region	Asset under management (in \$ bn)				Asset growth (in %)			
	2016	2018	2020	2022	2016	2018	2020	2022
Europe	12 040	14 075	12 017	14 054	12%	11%	−13%	31%
Canada	1 086	1 699	2 423	2 358	49%	42%	48%	−5%
Australasia	516	734	906	1 220	248%	46%	25%	30%
Japan	474	2 180	2 874	4 289	6 692%	307%	34%	59%
Sub-total	14 116	18 688	18 220	21 921	21%	32%	−3%	20%
United Sates	8 723	11 995	17 081	8 400	33%	38%	42%	−51%
Total	22 839	30 683	35 301	30 321	25%	34%	15%	−14%

Source: GSIA (2015–2023) & Author's calculations.

The market of ESG investing

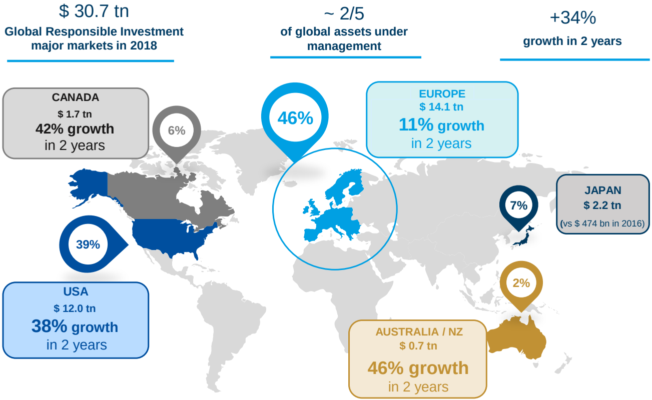
Figure 16: Sustainable investment assets at the start of 2016



Source: GSIA (2016).

The market of ESG investing

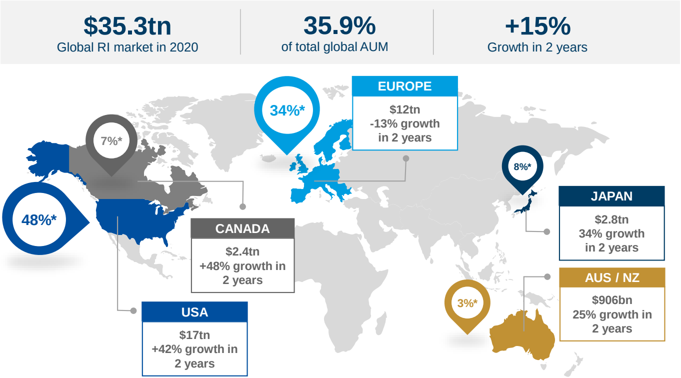
Figure 17: Sustainable investment assets at the start of 2018



Source: GSIA (2018).

The market of ESG investing

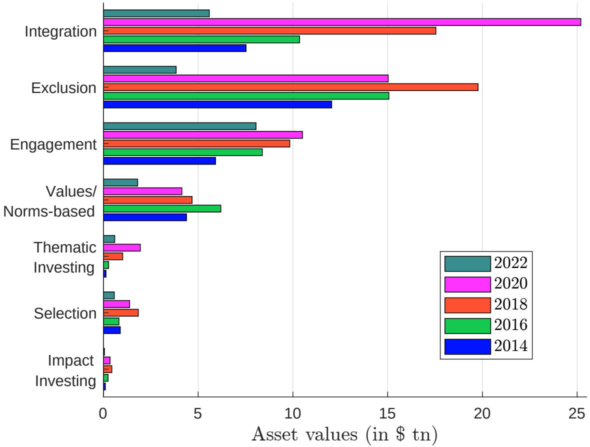
Figure 18: Sustainable investment assets at the start of 2020



Source: GSIA (2020).

The market of ESG investing

Figure 19: Asset values of ESG strategies between 2014 and 2022



Source: GSIA (2015–2023)) & Author's calculations.

The market of ESG investing

Table 10: ESG asset growth by strategy

#	ESG strategy	Asset growth			AUM (in \$ bn)	
		2014–2016	2016–2018	2018–2020	2020	2022
1	Exclusion	11.7%	14.6%	−24.0%	15 030	3 840
2	Values/Norms-based	19.0%	−13.1%	−11.5%	4 140	1 807
3	Selection	7.6%	50.1%	−24.9%	1 384	574
4	Thematic Investing	55.1%	92.0%	91.4%	1 948	598
5	Integration	17.4%	30.2%	43.6%	25 195	5 588
6	Engagement	18.9%	8.3%	6.8%	10 504	8 053
7	Impact Investing	56.8%	33.7%	−20.8%	352	55
	Total				58 553	20 515

Source: GSIA (2015–2023) & Author's calculations.