Course 2021-2022 in ESG and Climate Risks
Lecture 3. Other ESG Topics

Thierry Roncalli*

*Amundi Asset Management[1]

*University of Paris-Saclay

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[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

- **Lecture 1: Introduction**
  - *Definition, Actors, the Market of ESG Investing* (42 slides)
- **Lecture 2: ESG Investing**
  - *ESG Scoring, ESG Ratings, Performance of ESG Investing, ESG Financing, ESG Premium* (132 slides)
- **Lecture 3: Other ESG Topics**
  - *Sustainable Financing Products, Impact Investing, Voting Policy & Engagement, ESG and Climate Accounting* (82 slides)
- **Lecture 4: Climate Risk**
  - *Definition, Global Warming, Economic Modeling, Risk Measures* (176 slides)
- **Lecture 5: Climate Investing**
  - *Portfolio Decarbonization, Net Zero Carbon Metrics, Portfolio Alignment* (164 slides)
- **Lecture 6: Mathematical Methods, Technical Tools and Exercises**
  - *Scoring System, Trend Modeling, Geolocation Data, Numerical Computations, Optimization* (150+ slides)

General information

1. **Overview**
   The objective of this course is to understand the concepts of sustainable finance from the viewpoint of asset owners and managers
2. **Prerequisites**
   M1 Finance or equivalent
3. **ECTS**
   3
4. **Keywords**
   Finance, Asset Management, ESG, Responsible Investing, Climate Change
5. **Hours**
   Lectures: 18h
6. **Evaluation**
   Project + oral examination
7. **Course website**
   `http://www.thierry-roncalli.com/SustainableFinance.html`

Class schedule

Course sessions

- Date 1 (6 hours, AM+PM)
- Date 2 (6 hours, AM+PM)
- Date 3 (6 hours, AM+PM)

Class times: Friday 9:00am-12:00pm, 1:00pm–4:00pm, Location: University of Evry

Additional materials

http://www.thierry-roncalli.com/SustainableFinance.html

- Slides
- Past examinations
- Exercises + Solutions
- LaTeX source of the slides + figures (in pdf format)
- Links to the references

Main references

Amundi publications on ESG Investing

1. Bennani *et al.* (2018), How ESG Investing Has Impacted the Asset Pricing in the Equity Market, DP-36-2018, 36 pages, November 2018
2. Drei *et al.* (2019), ESG Investing in Recent Years: New Insights from Old Challenges, DP-42-2019, 32 pages, December 2019
3. Ben Slimane *et al.* (2020), ESG Investing and Fixed Income: It's Time to Cross the Rubicon, DP-45-2019, 36 pages, January 2020
4. Roncalli, T. (2020), ESG & Factor Investing: A New Stage Has Been Reached, Amundi Viewpoint, May 2020

Available at `https://research-center.amundi.com` or `www.ssrn.com`

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Amundi publications on Climate Investing

1. Le Guenedal, T. (2019), Economic Modeling of Climate Risk, WP-83-2019, 92 pages, April 2019
2. Bouchet, V., and Le Guenedal, T. (2020), Credit Risk Sensitivity to Carbon Price, WP-95-2020, 48 pages, May 2020
3. Le Guenedal *et al.* (2020), Trajectory Monitoring in Portfolio Management and Issuer Intentionality Scoring, WP-97-2020, 54 pages, May 2020
4. Roncalli *et al.* (2020), Measuring and Managing Carbon Risk in Investment Portfolios, WP-99-2020, 67 pages, August 2020
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6. Le Guenedal, Drobinski, P., and Tankov, P. (2021), Measuring and Pricing Cyclone-Related Physical Risk under Changing Climate, WP-111-2021, 42 pages, June 2021
7. Adenot *et al.* (2022), Cascading Effects of Carbon Price through the Value Chain and their Impacts on Firm's Valuation, WP-122-2022, 82 pages, February 2022
8. Le Guenedal *et al.* (2022), Net Zero Carbon Metrics, WP-123-2022, 82 pages, February 2022

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Amundi ESG Thema

1. Créhalet, E. (2021), Introduction to Net Zero, *Amundi ESG Thema #1*, `https://research-center.amundi.com`
2. Créhalet, E., Foll, J., Haustant, P., and Hessenberger, T. (2021), Carbon Offsetting: How Can It Contribute to the Net Zero Goal?, *Amundi ESG Thema #5*, `https://research-center.amundi.com`
3. Créhalet, E., and Talwar, S. (2021), Carbon-efficient Technologies in the Race to Net Zero, *Amundi ESG Thema #6*, `https://research-center.amundi.com`
4. Le Meaux, C., Le Berthe, T., Jaulin, T., Créhalet, E., Jouanneau, M., Pouget-Abadie, T., and Elbaz, J. (2021), How can Investors Contribute to Net Zero Efforts?, *Amundi ESG Thema #3*, `https://research-center.amundi.com`

Available at `https://research-center.amundi.com` or `www.ssrn.com`

Main references
Academic publications

1. Andersson, M., Bolton, P., and Samama, F. (2016), Hedging Climate Risk, *Financial Analysts Journal*, www.ssrn.com/abstract=2499628.
2. Ardia, D., Bluteau, K., Boudt, K., and Inghelbrecht, K. (2021), Climate Change Concerns and the Performance of Green versus Brown Stocks, *National Bank of Belgium, Working Paper*, www.ssrn.com/abstract=3717722.
3. Battiston, S., Mandel, A., Monasterolo, I., Schütze, F., and Visentin, G. (2017), A Climate Stress-test of the Financial System, *Nature Climate Change*, www.ssrn.com/abstract=2726076.
4. Berg, F. Koelbel, J.F., and Rigobon, R. (2019), Aggregate Confusion: The Divergence of ESG Ratings, *Working Paper*, www.ssrn.com/abstract=3438533
5. Berg, F., Fabisik, K., and Sautner, Z. (2021), Is History Repeating Itself? The (Un)predictable Past of ESG Ratings , *Working Paper*, www.ssrn.com/abstract=3722087
6. Bolton, P., and Kacperczyk, M. (2021), Do Investors Care about Carbon Risk?, *Journal of Financial Economics*, www.ssrn.com/abstract=3594189
7. Bolton, P., Kacperczyk, M., and Samama, F. (2021), Net-Zero Carbon Portfolio Alignment, *Working Paper*, www.ssrn.com/abstract=3922686
8. Coqueret, G. (2021), Perspectives in ESG Equity Investing, *Working Paper*, www.ssrn.com/abstract=3715753

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9. Crifo, P., Diaye, M.A., and Oueghlissi, R. (2015), Measuring the Effect of Government ESG Performance on Sovereign Borrowing Cost, *Quarterly Review of Economics and Finance*, `hal.archives-ouvertes.fr/hal-00951304v3`
10. Dennig, F., Budolfson, M.B., Fleurbaey, M., Siebert, A., and Socolow, R.H. (2015), Inequality, Climate Impacts on the Future Poor, and Carbon Prices, *Proceedings of the National Academy of Sciences*, `www.pnas.org/content/112/52/15827`
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13. Harris, J. (2015), The Carbon Risk Factor, *Working Paper*, `www.ssrn.com/abstract=2666757`
14. Karydas, C., and Xepapadeas, A. (2021), Climate Change Financial Risks: Implications for Asset Pricing and Interest Rates, *Working Paper*
15. Le Guenedal, T., and Roncalli, T. (2022), Portfolio Construction and Climate Risk Measures, *Climate Investing*, `www.ssrn.com/abstract=3999971`

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16. Martellini, L., and Vallée, L. (2021), Measuring and Managing ESG Risks in Sovereign Bond Portfolios and Implications for Sovereign Debt Investing, *Journal of Portfolio Management*, www.risk.edhec.edu/measuring-and-managing-esg-risks-sovereign-bond
17. Pedersen, L.H., Fitzgibbons, S., and Pomorski, L. (2021), Responsible Investing: The ESG-Efficient Frontier, *Journal of Financial Economics*, www.ssrn.com/abstract=3466417
18. Pástor, L., Stambaugh, R.F., and Taylor, L.A. (2021), Sustainable Investing in Equilibrium, *Journal of Financial Economics*, www.ssrn.com/abstract=3498354
19. Roncalli, T., Le Guenedal, T., Lepetit, F., Roncalli, T., and Sekine, T. (2021), The Market Measure of Carbon Risk and its Impact on the Minimum Variance Portfolio, *Journal of Portfolio Management*, www.ssrn.com/abstract=3772707
20. Van der Beck, P. (2021), Flow-driven ESG returns, *Working Paper*, www.ssrn.com/abstract=3929359

SRI Investment funds

- Investment vehicles
  - Mutual funds
  - ETFs
  - Mandates & dedicated funds
- Investment strategies
  - Thematic strategies (e.g. water, social, wind energy, climate, plastic, etc.)
  - ESG-tilted strategies (e.g. exclusion, negative screening, best-in-class, enhanced ESG score, controlled tracking error, etc.)
  - Climate strategies (e.g. low carbon, $2^{\circ}\mathrm{C}$ alignment, activity exclusions[2], etc.)
  - Sustainability-linked securities (e.g. green bonds, social bonds, etc.)

Both α and β management

[2] e.g. coal exploration, oil exploration, electricity generation with a high GHG intensity

SRI Investment funds

Some examples

Mutual funds

- Amundi Climate Transition
- Amundi ARI European Credit SRI
- AXA World Funds – Euro Bonds SRI
- CPR Invest Social Impact
- Fidelity U.S. Sustainability Index
- Fidelity Sustainable Water & Waste
- Natixis ESG Dynamic Fund
- Vanguard FTSE Social Index
- Etc.

ETFs

- Amundi Index MSCI Europe SRI UCITS ETF
- Amundi MSCI Emerging ESG Leaders UCITS ETF
- Amundi EURO ISTOXX Climate Paris Aligned PAB UCITS ETF
- Lyxor New Energy UCITS ETF
- Lyxor World Water UCITS ETF
- SPDR S&P 500 ESG
- First Trust Global Wind Energy ETF
- Invesco S&P 500 ESG UCITS ETF
- Etc.

Climate change indexes

Some examples

- MSCI Climate Change Indexes — `www.msci.com/climate-change-indexes`
- FTSE Global Climate Index Series — `www.ftserussell.com/products/indices/global-climate`
- FTSE Climate Risk-Adjusted Government Bond Index Series — `www.ftserussell.com/products/indices/climate-wgbi`
- S&P Climate Indices — `https://www.spglobal.com/spdji/en/index-family/esg/esg-climate/`
- STOXX Climate Benchmark Indices — `qontigo.com/solutions/climate-indices`

SRI Investment funds

Regulation

The big issue for an investor is:

How to avoid Greenwashing (& ESG washing)?

Greenwash (also greenwashing)

- Activities by a company or an organization that are intended to make people think that it is concerned about the environment, even if its real business actually harms the environment
- A common form of greenwash is to publicly claim a commitment to the environment while quietly lobbying to avoid regulation

Source: Oxford English Dictionary (2020), `https://www.oed.com`

In finance, greenwashing is understood as making misleading claims about environmental practices, performance or products

SRI Investment funds

Regulation

- ESG represents **58% of the net new assets** (NNA) in the European ETF market
- ESG fund assets reach $1 652 bn
  - Europe: $1 343 bn (or 81.3%)
  - US: $236.4 bn (or 14.3%)
  - Asia: $43.1 bn (or 2.6%)
- Net flows into sustainable mutual funds and ETFs in Q4 2020: $370 bn (or **+29% of assets**)
- Net flows into sustainable mutual funds and ETFs in 2020
  - Europe: $273 bn, almost double the total for 2019, almost 5 times more than in 2017
  - US: $51.2 bn, more than double the total for 2019, almost 10 times more than in 2018

Source: Morningstar, Global Sustainable Fund Flows: Q4 2020 in Review (January 2021)

SRI Investment funds

Regulation

European sustainable finance labels

- Novethic label (pioneer label in 2009, suspended in 2016)
- French SRI label — `https://www.lelabelisr.fr`
- FNG label (Germany) — `https://fng-siegel.org`
- Towards Sustainability label (Belgium) — `https://www.towardssustainability.be`
- LuxFLAG label (Luxembourg) — `https://www.luxflag.org`
- Nordic Swan Ecolabel (Nordic countries) — `https://www.nordic-ecolabel.org`
- Umweltzeichen Ecolabel (Austria) — `https://www.umweltzeichen.at/en`
- French Greenfin label — `https://www.ecologie.gouv.fr/label-greenfin`

SRI Investment funds

Regulation

Remark

According to Novethic (2020), 806 funds had a label at the end of December 2019. Nine months later, this number has increased by 392 and the AUM has be multiplied by 3.2!

SRI Investment funds

Regulation

"Today it is difficult for consumers, companies and other market actors to make sense of the many environmental labels and initiatives on the environmental performance of products and companies. There are more than 200 environmental labels active in the EU, and more than 450 active worldwide; there are more than 80 widely used reporting initiatives and methods for carbon emissions only. Some of these methods and initiatives are reliable, some not; they are variable in the issues they cover" (European Commission, 2020).

Source: `https://ec.europa.eu/environment/eussd/index.htm`

SRI Investment funds

Regulation

The High Level Expert Group (HLEG) on Sustainable Finance was created in October 2016 by the European Commission

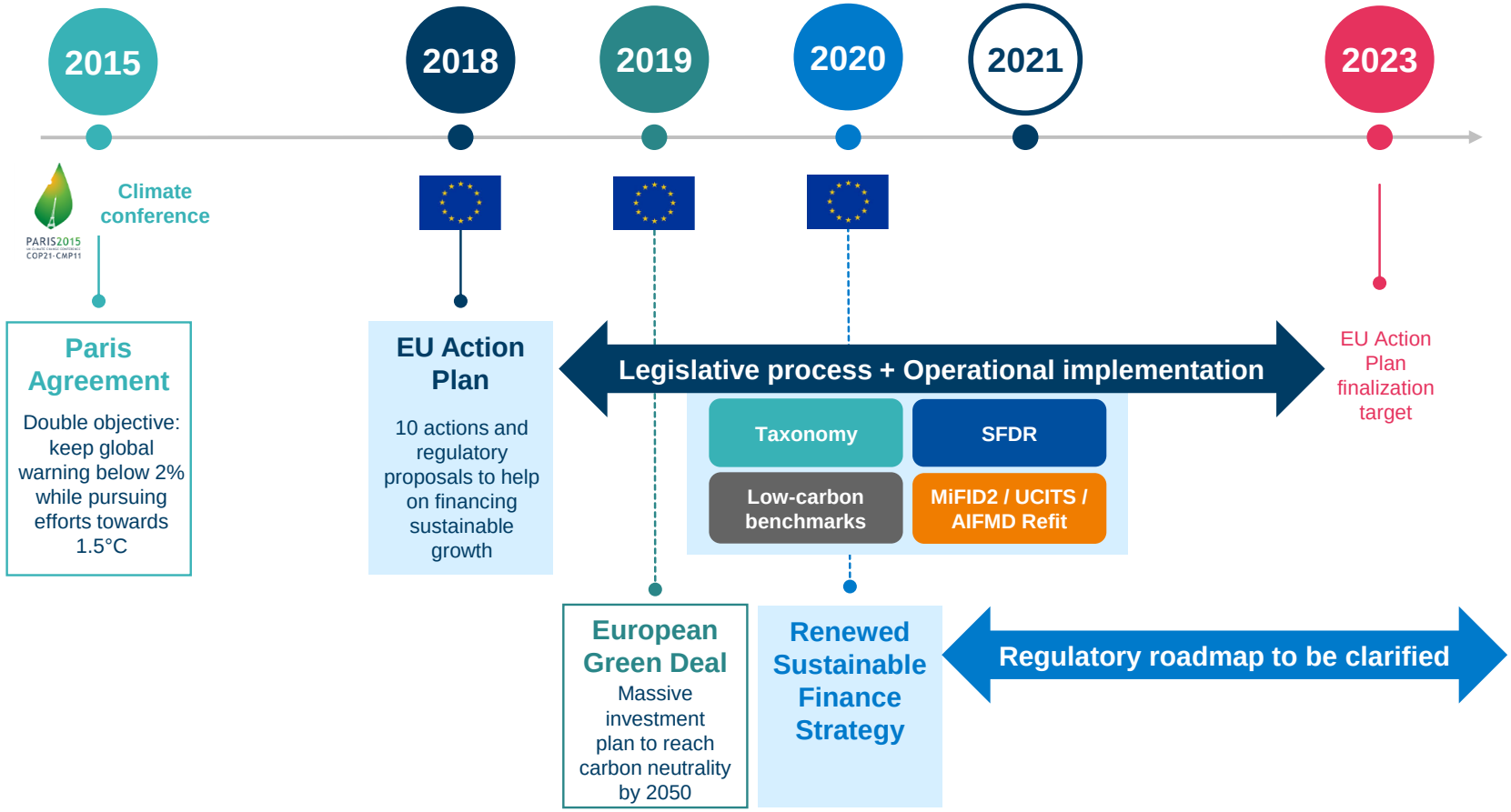
HLEG 2018 report

- Definition of a taxonomy for sustainable assets
- Inclusion of sustainability and ESG Duties of investors
- Disclosure of ESG metrics
- EU label for green investment funds
- EU standard for green bonds
- Sustainability as part of the mandates of European Supervisory Authorities (ESA)

SRI Investment funds

Regulation

Figure 1: The EU Commission regulatory initiatives



Source: Amundi ETF, Indexing & Smart Beta (January 2020)

SRI Investment funds

Regulation

1. Taxonomy
   "*Regulation on the establishment of a framework to facilitate sustainable investment*", 2020/852/EU
2. Disclosure & duties
   "*Sustainable Finance Disclosure Regulation*", 2019/2088/EU (SFDR)
3. Benchmarks
   "*Benchmark Regulation*", 2016/1011/EU (BMR)
   Climate Transition Benchmarks (CTB) & PAB: Paris-Aligned Benchmarks (PAB)
4. Sustainability preferences
   "*Markets in Financial Instruments Directive*", 2014/65/EU (MIFID II)
   "*Insurance Distribution Directive*", 2016/97/EU (IDD)

SRI Investment funds

Regulation

SFDR

- Article 6: Non-ESG funds (standard funds)
- Article 8: ESG funds (funds that promote E or S characteristics)
- Article 9: Sustainable funds (funds that have a sustainable investment objective: impact investing or reduction of carbon emissions)

SRI Investment funds

Regulation

ESMA

- Final report on integrating sustainability risks and factors in the UCITS Directive and the AIFMD (May 2019)
- Final report on integrating sustainability risks and factors in the MIFID II (May 2019)

Climate change indexes

Regulation

New benchmark rules

- Climate transition benchmarks (CTB): high level of decarbonization (-30%), no controversial weapons and tobacco, high positive impact on climate change, etc.
- Paris-aligned benchmarks (PAB): high level of decarbonization (-50%), no controversial weapons and tobacco, no activities in coal, oil and natural gas, global warming below 2°, etc.

- MSCI Climate Paris Aligned Indexes — `www.msci.com/esg/climate-paris-aligned-indexes`
- FTSE TPI Climate Transition Index Series — `www.ftserussell.com/products/indices/tpi-climate-transition`
- STOXX Climate Transition Benchmark (CTB) and STOXX Paris-Aligned Benchmark (PAB) Indices — `qontigo.com/solutions/climate-indices`

Green bonds

Definition

Green bonds (or green loans/green debt instruments) are debt instruments where the proceeds will be exclusively applied to finance or re-finance, in part or in full, new and/or existing eligible green projects, and which is aligned with the four core components of the Green Bond Principles (GBP) or the Green Loan Principles.

Source: CBI (2019), `https://www.climatebonds.net`

$\Rightarrow$ Green bonds are "*regular*" bonds[3] aiming at funding projects with positive environmental and/or climate benefits

[3] A regular bond pays regular interest to bondholders

Green bonds

Standardization is strongly required by investors and regulators

- Green Bond Principles[4] (ICMA, 2018)
- Climate Bonds Standard (CBI)
- EU Green Bond Standard[5]
- China's Green Bond Standards[6] (PBOC, 2015)

[4] The first version is published in 2014

[5] The European Green Deal Investment Plan of 14 January 2020 announced that the European Commission will establish a GBS based on the report of the Technical Expert Group on Sustainable Finance (TEG)

[6] See CBI (2020), *China Green Bond Market 2019 Research Report*, `https://www.climatebonds.net/resources/reports/china-green-bond-market-2019-research-report`

Green bonds

Green Bonds Principles

Green Bonds Principles (GBP)

The 4 core components of the GBP are:

1. Use of proceeds
   1. Pollution prevention and control
   2. Biodiversity conservation
   3. Climate change adaptation
2. Process for project evaluation and selection
3. Management of proceeds
4. Reporting

https://www.icmagroup.org/sustainable-finance/the-principles-guidelines-and-handbooks

Green bonds

Green Bonds Principles

The use of proceeds includes:

- Renewable energy
- Energy efficiency
- Pollution prevention (e.g. GHG control, soil remediation, waste recycling)
- Sustainable management of living natural resources (e.g. sustainable agriculture, sustainable forestry, restoration of natural landscapes)
- Terrestrial and aquatic biodiversity conservation (e.g. protection of coastal, marine and watershed environments)
- Clean transportation
- Sustainable water management
- Climate change adaptation
- Eco-efficient products
- Green buildings

Green bonds

Green Bonds Principles

With respect to the **process for project evaluation and selection** (component 2), the issuer of a green bond should clearly communicate:

- the environmental sustainability objectives
- the eligible projects
- the related eligibility criteria

The **management of proceeds** (component 3) includes:

- The tracking of the "*balance sheet*" and the allocation of funds[7]
- An external review (not mandatory but highly recommended)

[7] The proceeds should be credited to a sub-account

Green bonds

Green Bonds Principles

The **reporting** (component 4) must be based on the following pillars:

- Transparency
- Description of the projects, allocated amounts and expected impacts
- Qualitative performance indicators
- Quantitative performance measures (e.g. energy capacity, electricity generation, GHG emissions reduced/avoided, number of people provided with access to clean power, decrease in water use, reduction in the number of cars required)

Types of debt instruments

Asset-linked bond structures

- Regular bond
- Revenue bond
- Project bond
- Green loans

Asset-backed bond structures

- Securitized bond
- Project bond
- ABS/MBS/CLO/CDO
- Covered bond

The green bond market

- Solar bond by the City of San Francisco in 2001
- Equity-linked climate awareness bond by the European Investment Bank (EIB) in 2007
- First green bond issued by the World Bank (in collaboration with Skandinaviska Enskilda Banken) in November 2008

The green bond market

Green bond issuers

- Sovereigns (agencies, municipals, governments)
- Multilateral development banks (MDB)
- Energy and utility companies
- Banks
- Other corporates

Green bond investors

- Pension funds
- Sovereign wealth funds
- Insurance companies
- Asset managers
- Retail investors (e.g. employee savings plans)

Strong imbalance between supply and demand

The green bond market

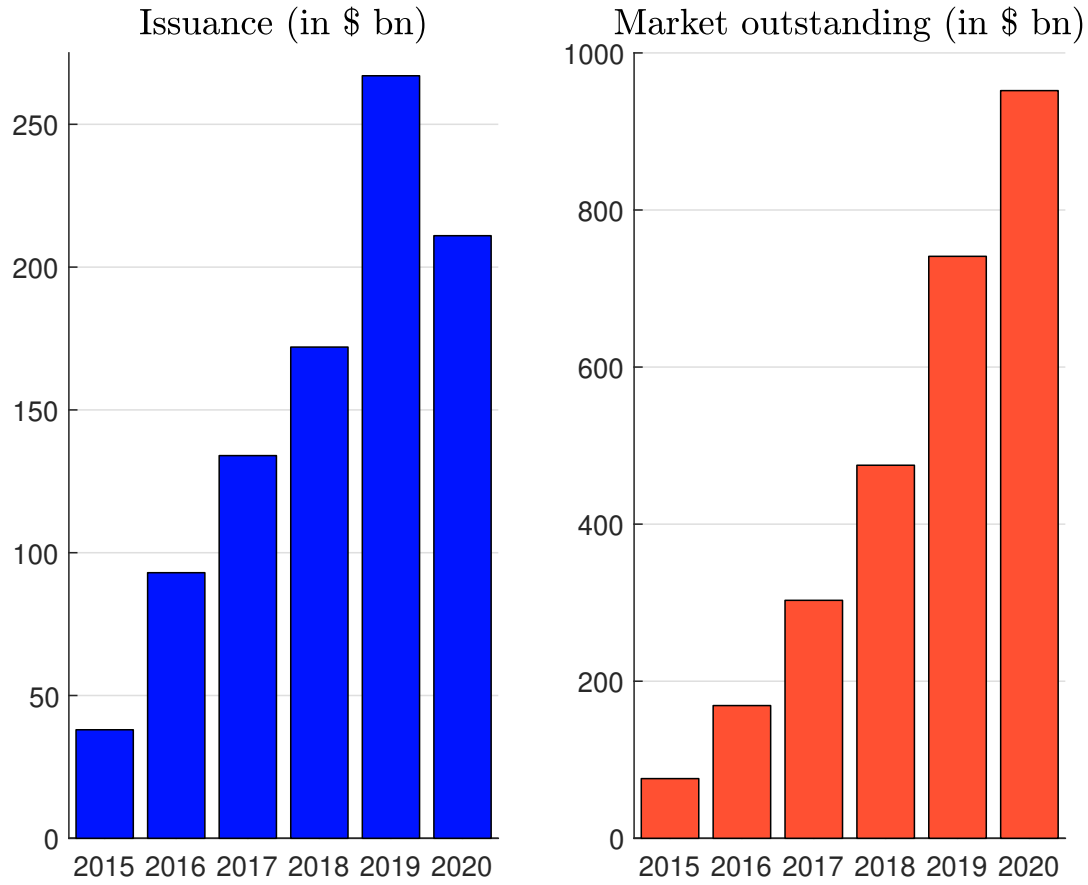


Figure 2: The green bond market

Source: CBI (2020), `https://www.climatebonds.net/market`

The green bond market

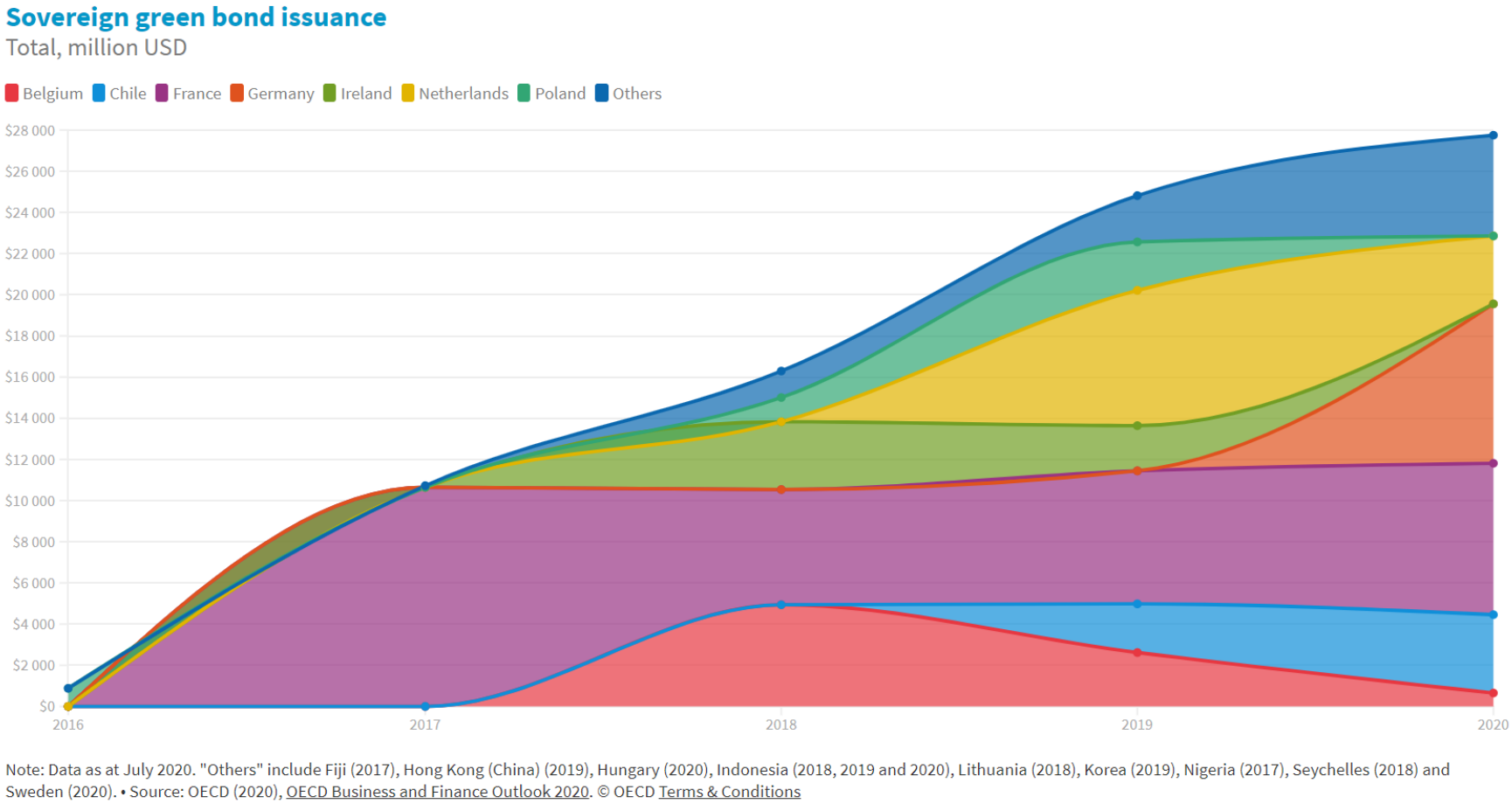


Figure 3: Growing momentum for sovereign green bonds (OECD, Sep. 2020)

Investing in green bonds
Active management

Example of green bond funds:

- Amundi Planet Emerging Green One (EGO), in collaboration with IFC (World Bank)
- Amundi ARI Impact Green Bonds
- AXA WF Global Green Bonds
- BNP Paribas Green Bond
- Mirova Global Green Bond Fund
- Etc.

Investing in green bonds

Passive management

List of green bond indices:

- Bloomberg Barclays MSCI Global Green Bond Index
- S&P Green Bond Index
- Solactive Green Bond Index
- ChinaBond China Climate-Aligned Bond Index:
- ICE BofA Green Index

$\Rightarrow$ ETF and index funds (e.g. Lyxor Green Bond UCITS ETF, iShares Green Bond Index Fund)

The green bond premium

Definition

The green bond premium (or greenium) is the difference in pricing between green bonds and regular bonds

The green bond premium

The greenium debate is a hot topic

You can read the article of the Wall Street Journal written by Matt Wirz[8]:

Why Going Green Saves Bond Borrowers Money

[8] The article is available on the following webpage: `https://www.wsj.com/articles/why-going-green-saves-bond-borrowers-money-11608201002`

The green bond premium

Table 1: Overview of GB pricing

Study	Market	#GBs	Universe	Period	Method	Greenium
Bachelet *et al.*(2019)	Secondary	89	Global	2013 - 2017	OLS model	2.1/5.9
Bour (2019)	Secondary	95	Global	2014 - 2018	Fixed effects model	−23.2
Ehlers and Packer (2017)	Primary	21	EUR & USD	2014 - 2017	Yield comparison	−18
Fatica *et al.* (2019)	Primary	1 397	Global	2007 - 2018	OLS model	
Hachenberg and Sciereck (2018)	Secondary	63	Global	August 2016	Panel data regression	NS
Hyun *et al* (2020)	Secondary	60	Global	2010 - 2017	Fixed effects GLS model	NS
Karpf and Mandel (2018)	Secondary	1 880	US Municipals	2010 - 2016	Oaxaca-Blinder decomposition	+7.8
Larcker and Watts (2019)	Secondary	640	US Municipals	2013 - 2018	Matching & Yield comparison	NS
Lau *et al.* (2020)	Secondary	267	Global	2013 - 2017	Two-way Fixed effects model	−1.2
Nanayakkara and Colombage (2019)	Secondary	43	Global	2016 - 2017	Panel data with hybrid model	−62.7
Ostlund (2015)	Secondary	28	Global	2011 - 2015	Yield comparison	NS
Preclaw and Bakshi (2015)	Secondary	Index	Global	2014 - 2015	OLS model	−16.7
Schmitt (2017)	Secondary	160	Global	2015 - 2017	Fixed effects model	−3.2
Zerbib (2019)	Secondary	110	Global	2013 - 2017	Fixed effects model	−1.8
Baker *et al.* (2018)	Secondary	2 083 19	US Municipals US Corporates	2010 - 2016 2014 - 2016	OLS model	−7.6/−5.5
Gianfrate and Peri (2019)	Primary Secondary	121 70/118	EUR	2013 - 2017 3 dates in 2017	Propensity score matching	−18 −11/−5
Kapraun and Scheins (2019)	Primary Secondary	1 513 769	Global	2009 - 2018	Fixed effects model	−18 +10
Partridge and Medda (2018)	Primary Secondary	521	US Municipals	2013 - 2018	Yield curve analysis	−4 NS

Source: Ben Slimane *et al.* (2020)

The green bond premium

- From the issuer's point of view, a green bond issuance is more expensive than a conventional issuance due to the need for external review, regular reporting and impact assessments
- From the investor's point of view, there is no fundamental difference between a green bond and a conventional bond, meaning that one should consider a negative green bond premium as a market anomaly

The green bond premium

Ben Slimane *et al.* (2020) test two approaches:

1. Top-down approach
   - Compare a green bond index portfolio to a conventional bond index portfolio
   - Same characteristics in terms of currency, sector, credit quality and maturity
2. Bottom-up approach
   - Compares the green bond of an issuer with a synthetic conventional bond of the same issuer
   - Same characteristics in terms of currency, seniority and duration.

The green bond premium

Main result (Ben Slimane *et al.*, 2020)

The greenium is negative between -5 and -2 bps on average

Other results:

- Differences between sectors, currencies, maturities, regions and ratings
- Transatlantic divided between US and Europe
- The volatility of green bond portfolios are lower than the volatility of conventional bond portfolios $\Rightarrow$ identical Sharpe ratio since the last four years
- Time-varying property of the greenium

The green bond premium

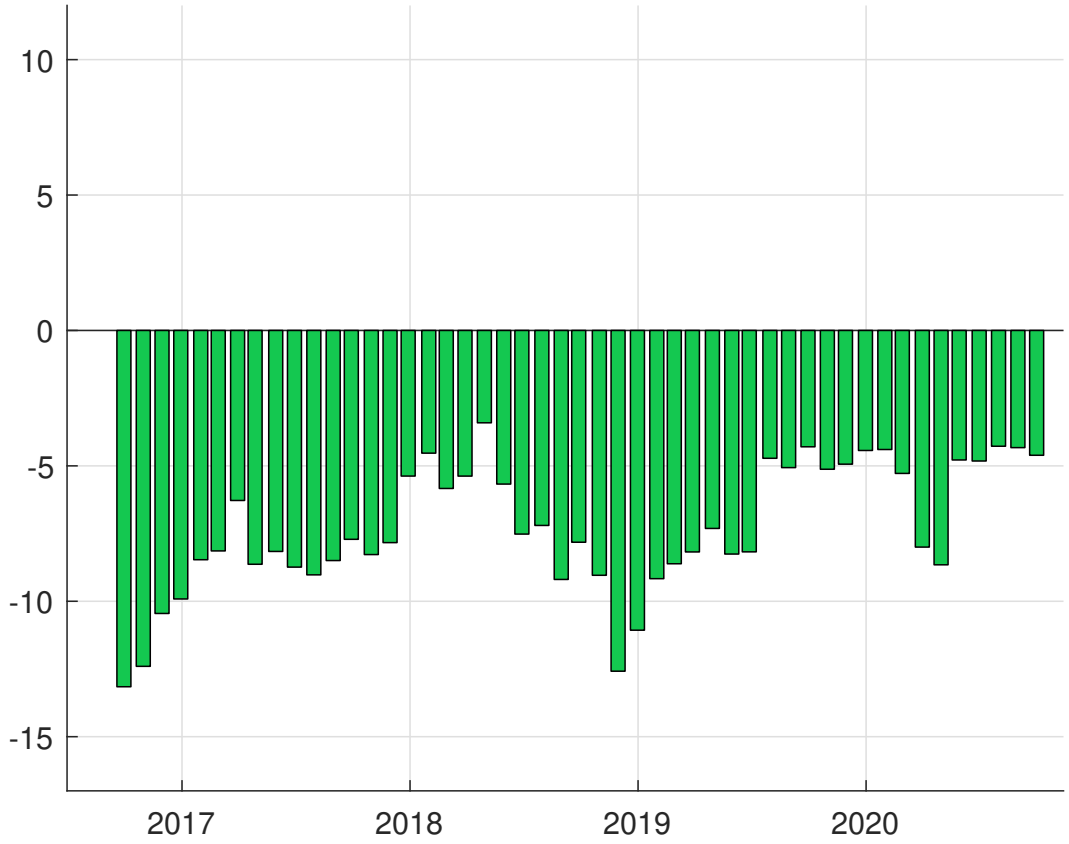


Figure 4: Evolution of the EUR greenium

Source: Ben Slimane *et al.* (2020)

The green bond premium

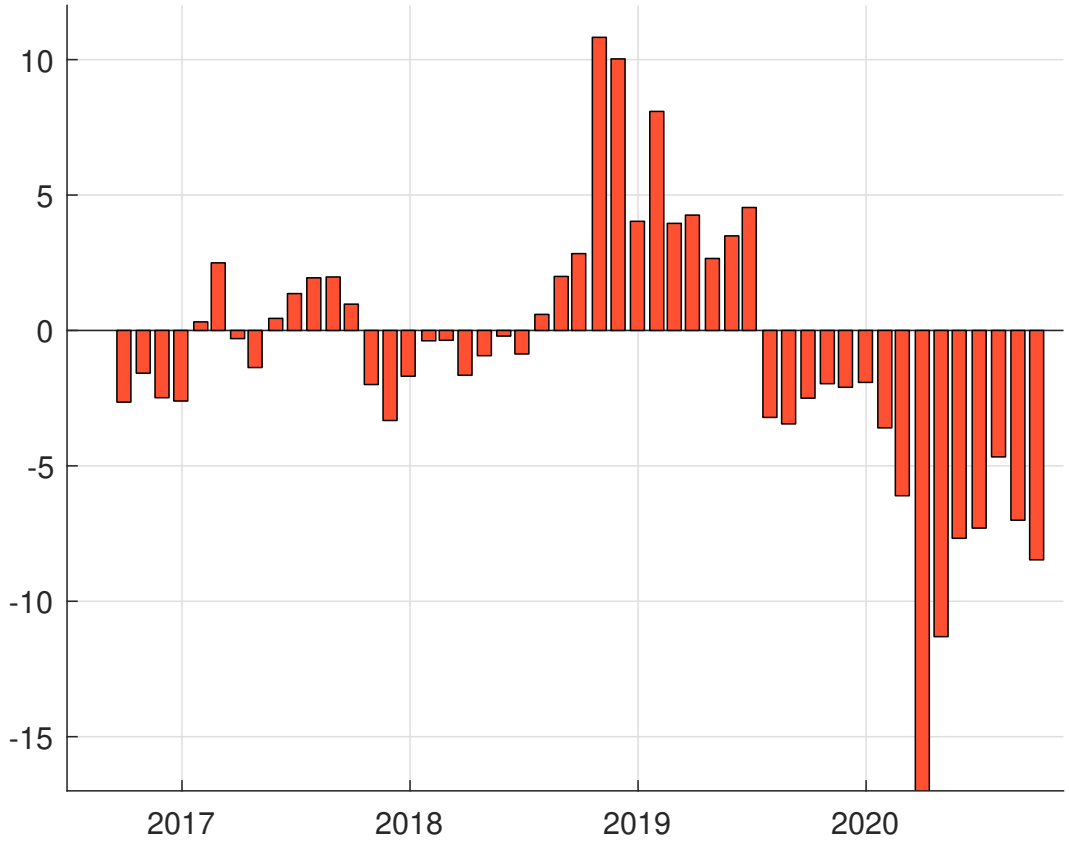


Figure 5: Evolution of the USD greenium

Source: Ben Slimane *et al.* (2020)

The green bond premium

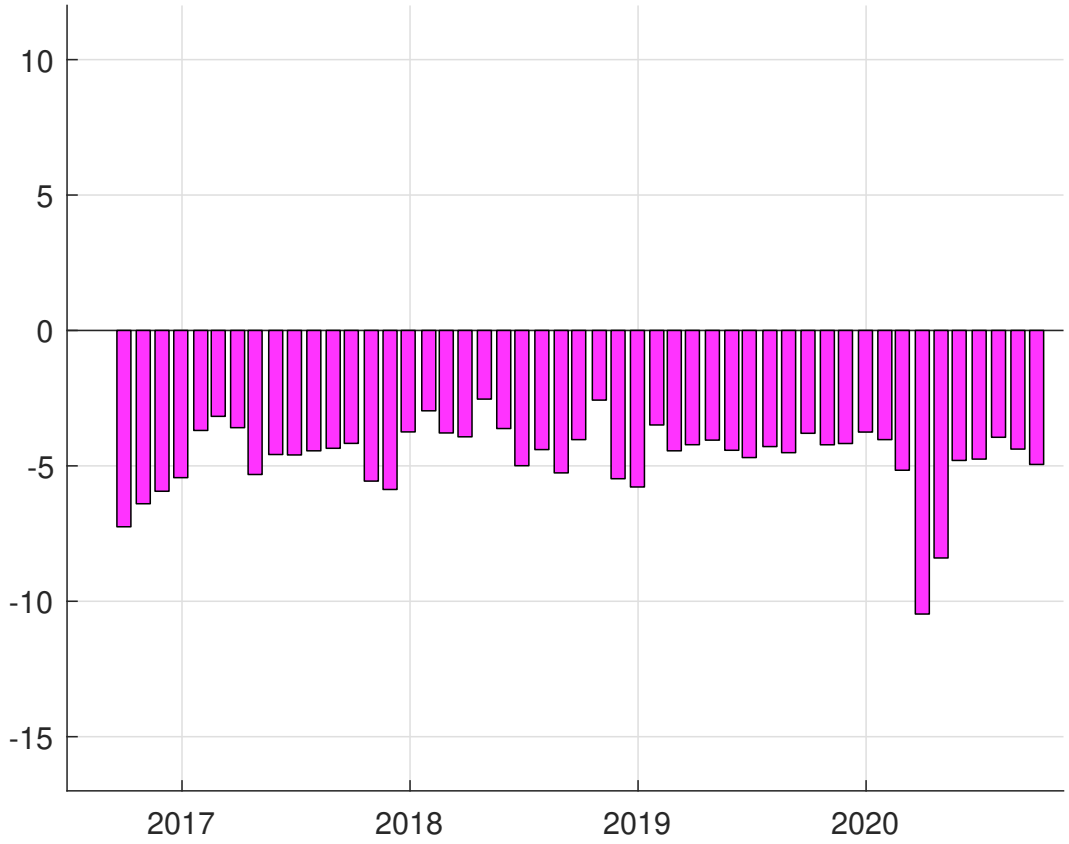


Figure 6: Evolution of the green bond premium (all currencies)

Source: Ben Slimane *et al.* (2020)

The green bond premium

Green financing $\Leftrightarrow$ green investing

1. Bond issuers have a competitive advantage to finance their environmental projects using green bonds instead of conventional bonds
2. Another premium? the "green bond issuer premium"

Social bonds

Definition

Social Bonds are any type of bond instrument where the proceeds will be exclusively applied to finance or re-finance in part or in full new and/or existing eligible Social Projects and which are aligned with the four core components of the Social Bonds Principles (SBP).

Source: ICMA (2020), `https://www.icmagroup.org/sustainable-finance`

Social bonds
Social Bonds Principles

Social Bonds Principles (SBP)

The 4 core components of the SBP are:

1. Use of proceeds
   1. Eligible social project categories
   2. Target populations
2. Process for project evaluation and selection
3. Management of proceeds
4. Reporting

https://www.icmagroup.org/sustainable-finance/the-principles-guidelines-and-handbooks

Social bonds

Social Bonds Principles

The **eligible social projects categories** (component 1) are:

- Affordable basic infrastructure (e.g. clean drinking water, sanitation, clean energy)
- Access to essential services (e.g. health, education)
- Affordable housing (e.g. sustainable cities)
- Employment generation (e.g. pandemic crisis)
- Food security and sustainable food systems (e.g. nutritious and sufficient food, resilient agriculture)
- Socioeconomic advancement and empowerment (e.g. income inequality, gender inequality)
- Etc.

Social bonds

Social Bonds Principles

The **target populations** (component 1) are:

- Living below the poverty line
- Excluded and/or marginalised populations/communities
- People with disabilities
- Migrants and /or displaced persons
- Undereducated
- Unemployed
- Women and/or sexual and gender minorities
- Aging populations and vulnerable youth
- Etc.

Social bonds

Social Bonds Principles

With respect to the **process for project evaluation and selection** (component 2), the issuer of a social bond should clearly communicate:

- the social objectives
- the eligible projects
- the related eligibility criteria

The **management of proceeds** (component 3) includes:

- The tracking of the "*balance sheet*" and the allocation of funds[9]
- An external review (not mandatory but highly recommended)

[9] The proceeds should be credited to a sub-account

Social bonds
Social Bonds Principles

The **reporting** (component 4) must be based on the following pillars:

- Transparency
- Description of the projects, allocated amounts and expected impacts
- Qualitative performance indicators
- Quantitative performance measures (e.g. number of beneficiaries)

Social bonds

Examples

You can download the *Green, Social and Sustainability bonds database* at the following webpage:

`https://www.icmagroup.org/sustainable-finance/green-social-and-sustainability-bonds-database`

You can download the market information template of the social project "*Women's Livelihood Bond 2 (WLB 2) — Singapore*" at the following address:

`https://www.icmagroup.org/Emails/icma-vcards/WLB2_Market%20Information%20Template.pdf`

The social bond market

- The tremendous growth of the social bond market

  "Of the $\$1,280$ *bn in cumulative sustainable fixed-income issuance, social bonds account for around 14% of the total, amounting to $180bn [...] This overall expansion trend has intensified during the pandemic. In fact, the growth of the social bond market in 2020, i.e.* $+374\%$ *with respect to 2019 levels, dwarf both the green and sustainability bonds markets' expansion, respectively* $+37\%$ *and* $+100\%$*" (Laugel and Vic-Philippe, 2020)*

- The pandemic has increased the popularity of social bonds
- Investors focus more on the (S) pillar of ESG

Other sustainability-related products

- Sustainability bonds (= green + social)
- Sustainable loans
- Green notes
- Green ABCP notes
- Financing renewables
- Green infrastructure funds
- ESG private equity funds
- Etc.

Other sustainability-related products

Sustainability-linked bond (SLB)

- Two principles:
  - = a sustainability bond (green/social)
  - + a step up coupon if the KPI is not satisfied

  $\Rightarrow$ forward-looking performance-based instrument
- The financial characteristics of the bond depends on whether the issuer achieves predefined ESG objectives
- Those objectives are:
  1. measured through predefined Key Performance Indicators (KPI)
  2. assessed against predefined Sustainability Performance Targets (SPT)

Other sustainability-related products

ENEL General Purpose SDG Linked Bond

- SDG: 7 (affordable and clean energy), 13 (climate action), 9 (industry, innovation and infrastructure) and 11 (sustainable cities and communties)
- SDG 7 target: renewables installed capacity as of December 31, 2021 $\geq 55\%$ (confirmed by external verifier[a])
- One time coupon step up if SDG 7 is not achieved[b] (+ 25 bps)

[a] The external auditor is EY
[b] As of 30 June 2019, the KPI was equal to 45.9%

Other sustainability-related products

H&M sustainability-linked bond

- 18 February 2021
- €500 mn
- Maturity of 8.5 years
- The annual coupon rate is 25 bps
- The objectives to achieve by 2025 are:

  KPI_1 Increase the share of recycled materials used to 30% (SPT_1)

  KPI_2 Reduce emissions from the Group's own operations (scopes 1+2) by 20% (SPT_2)

  KPI_3 Reduce scope 3 emissions from fabric production, garment manufacturing, raw materials and upstream transport by 10% (SPT_3)
- The global KPI is equal to $40\% \times \mathrm{KPI}_1 + 20\% \times \mathrm{KPI}_2 + 40\% \times \mathrm{KPI}_3$
- The step-up of the coupons can consequently be 0%, 20%, 40%, 60%, 80% or 100% of the total step-up rate

The bond generated was 7.6 times oversubscribed!

Definition

Principle

- Financial risks ⇒ financial performance (return, volatility, Sharpe ratio, etc.)
- Extra-financial risks ⇒ financial performance (return, volatility, Sharpe ratio, etc.)
- **Extra-financial risks ⇒ extra-financial performance** (ESG KPIs)

What is the final motivation of the ESG investor?

Financial performance or/and extra-financial performance?

Definition

Definition

The key elements of impact investing are:

1. Intentionality
   The intention of an investor to generate a positive and measurable social and environmental impact
2. Additionality
   Fulfilling a positive impact beyond the provision of private capital
3. **Measurement**
   Being able to account for in a transparent way on the financial, social and environmental performance of investments

Source: Eurosif (2019)

The investor must be able to measure its impact from a quantitative point of view

GIIN

Figure 7: Global Impact Investing Network (GIIN)

https://thegiin.org

The example of social impact bonds

Social impact bond (SIB) = **pay-for-success bond** ($\approx$ call option)

The Peterborough SIB

- On 18 March 2010, the UK Secretary of State for Justice announced a six-year SIB pilot scheme that will see around 3 000 short term prisoners from Peterborough prison, serving less than 12 months, receiving intensive interventions both in prison and in the community
- Funding from investors will be initially used to pay for the services
- If reoffending is not reduced by at least 7.5%, the investors will receive no recompense

The example of sustainability-linked bonds

Sustainability-linked[10] (SLB) = **pay-for-failure bond** ($\approx$ cap option)

Risk taker

SIB: investor viewpoint $\neq$ SLB: issuer viewpoint

[10] See the examples of ENEL and H&M previouly

Measurement tools

Impact assessment and metrics

- Avoided CO2 emissions in tons per $M invested
- Amount of clean water produced by the project
- Number of children who are less obese
- Land management
- Affordable housing
- Job creation
- Construction of student housing

Sustainable development goals (SDG)

The sustainable development goals are a collection of 17 interlinked global goals designed to be a "*blueprint to achieve a better and more sustainable future for all*"

https://sdgs.un.org

Sustainable development goals (SDG)

Figure 8: The map of sustainable development goals

Sustainable development goals (SDG)

Figure 9: Mapping the SDGs across E, S and G

Sustainable development goals (SDG)

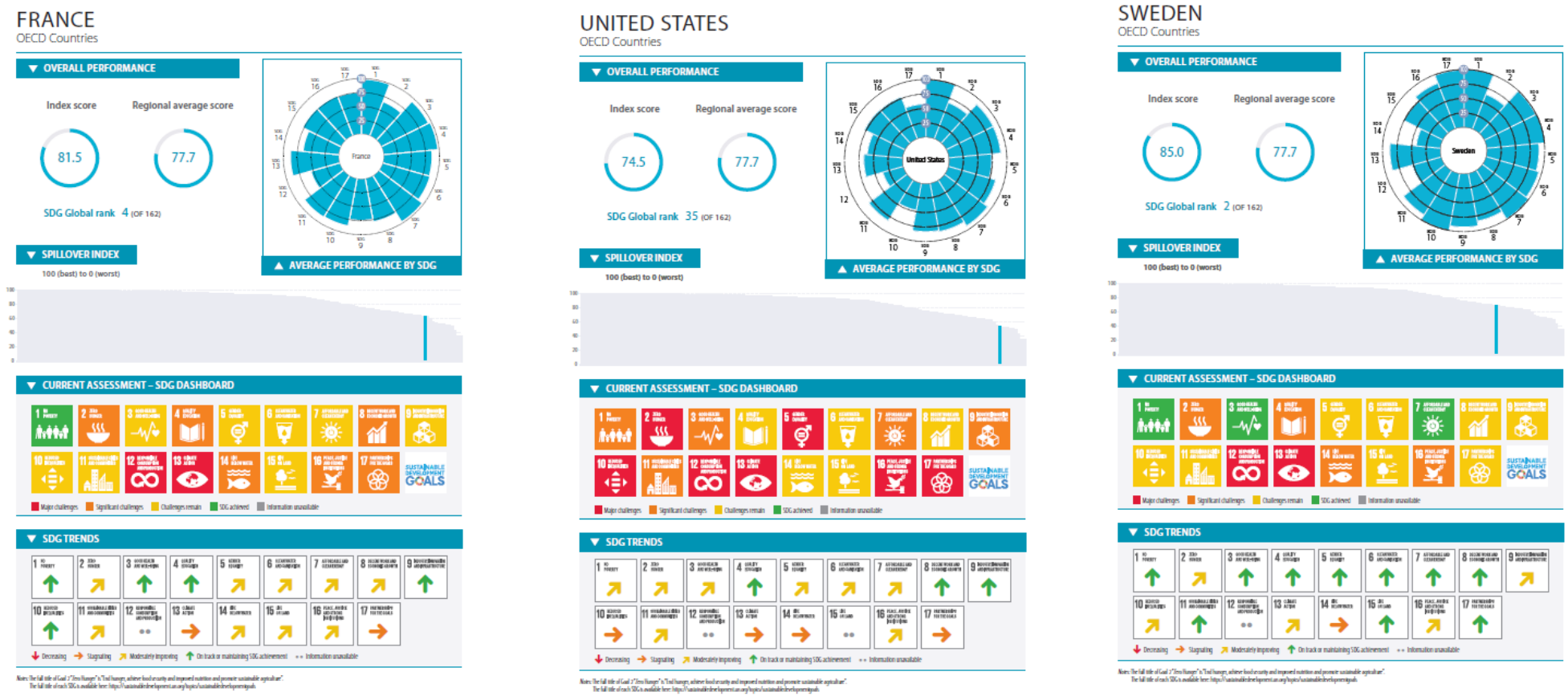


Figure 10: Examples of sovereign SDG reports

Source: Sustainable Development Report 2019, `https://dashboards.sdgindex.org`

The challenge of reporting

- Impact reporting and investment standards (IRIS) proposed by GIIN
- EU taxonomy on sustainable finance
- Non-financial reporting directive 2014/95/EU (NFRD)
- Carbon accounting

The challenge of reporting

Table 2: Impact reporting of the CPR Invest — Social Impact fund

	Social indicator		Coverage ratio	
	Global Index	CPR Fund	Global Index	CPR Fund
CEO pay ratio	333	114	82%	84%
% of women in the board direction	18%	19%	79%	75%
Hours of training	33 hours	39 hours	33%	45%
Trade union rate	36%	45%	25%	36%

Source: CPR Asset Management (2021)

The challenge of reporting

- Amundi ARI – Impact Green Bonds (Annual impact record 2020)
  - GHG avoided emissions per €1 mn invested per year : 586.5 tCO_2e
  - GHG avoided emissions rebased per €1 mn invested per year 882.7 tCO_2e
- CPR Invest – Climate Action
  - -69% of tCO_2e wrt MSCI ACWI
- CPR Invest – Food For Generations
  - **Water consumption**: 6 765 m3/meur for the fund vs 13 258 for the benchmark and 18 869 for the universe
  - **Waste recycling ratio**: 71.14% for the fund vs 66.45% for the benchmark and 67.22% for the universe

Source: Amundi (2021) and CPR Asset Management (2021)

The challenge of reporting

Table 3: Impact investing reporting of the Amundi Finance & Solidarité fund

	2020	Since inception (2012)
People housed	2 364	10 336
Job created/preserved	9 439	43 655
Care recipients	83 240	250 314
Trained people	18 702	59 686
Preserved agricultural farmland (hectare)	438	987
Waste recycling (ton)	82 590	219 287
Microcredit beneficiaries	60 171	276 514

Source: Amundi (2021)

The challenge of reporting

Figure 11: Companies' portfolio contribution of the Finance & Solidarité fund

Source: Amundi (2021)

Shareholder activism

Shareholder activism can take various forms

1. Exit (sell shares, take an offsetting bet)
2. Vote (form coalition/express dissent/call back lent shares)
3. Engage behind the scene with management and the board
4. Voice displeasure publicly (in the media)
5. Propose resolutions (shareholder proposals)
6. Initiate a takeover (acquire a sizable equity share)

Source: Bekjarovski and Brière (2018)

ESG engagement policies

- On-going engagement
  - Meet companies in order to better understand sectorial ESG challenges
  - Encourage companies to adopt best ESG practices
  - Challenge companies on ESG risks
- Engagement for influence
  - Make recommendations
  - Measure companies ESG progress
- AGM[11] engagement
  - Exercise on voting rights
  - Discuss with companies any resolution items that the investor may vote against

[11] Annual General Meeting

Shareaction 2020 Report

Figure 12: Shareaction 2020 Report: Voting Matters

Source: `https://shareaction.org/research-resources/voting-matters-2020/`

Statistics

Key findings

- One in six asset managers did not use their voting rights at over 10% of the resolutions they could have voted on
- European asset managers continue to outperform US asset managers
- European asset managers do not tend to file shareholder resolutions on climate change and social issues in their own jurisdictions
- 70 additional resolutions would have passed, if one or more of the Big Three had changed their vote

Statistics

Key findings (climate)

- A number of Climate Action 100+ (CA100+) members fail to vote for climate action
- Banks are under pressure to act on climate change

Statistics

Key findings (social)

- Despite the rhetoric on Covid-19 increasing the focus on (S), there is little evidence of it affecting voting decisions
- Support for diversity resolutions is higher than for those on human rights and pay gaps
- Investors showed less support for resolutions requesting companies to disclose both gender and race pay gaps, than for gender pay gap only

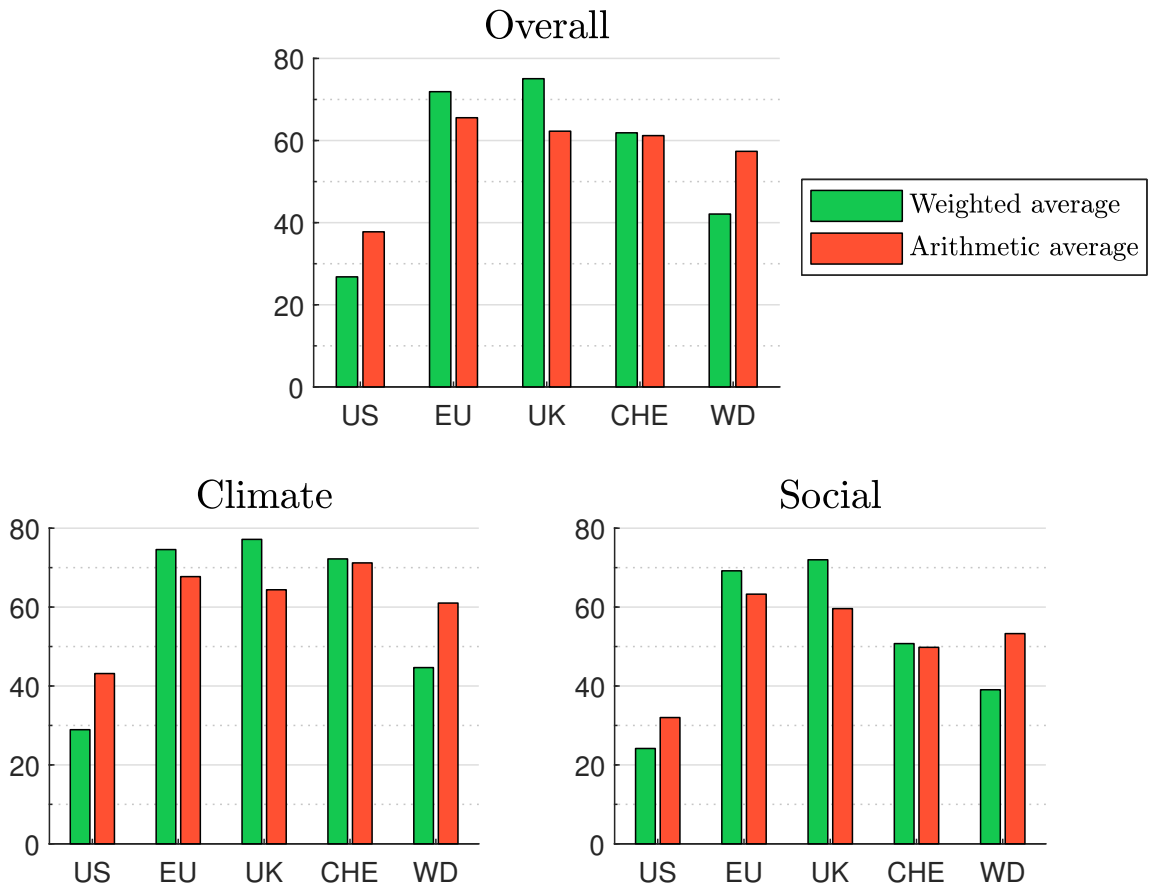
Statistics

Table 4: Ranking of the largest asset managers wrt voting ratios (2020)

Name	Country	AUM	Rank	Overall	Climate	Social
BlackRock	US	6 704	**19**	12%	11%	12%
Vanguard	US	5 625	**18**	14%	15%	12%
Fidelity	US	2 852	16	31%	20%	44%
State Street	US	2 776	15	35%	40%	29%
Capital Group	US	1 833	**20**	8%	12%	4%
JPMorgan IM	US	1 805	13	43%	51%	34%
Amundi	France	1 653	**2**	89%	91%	88%
GSAM	US	1 500	12	45%	48%	43%
Legal & General IM	UK	1 412	**1**	96%	96%	95%
Invesco	US	1 093	14	37%	52%	19%
T. Rowe Price	US	1 075	17	22%	27%	17%
Wellington	US	1 029	11	51%	62%	39%
Nuveen AM	US	948	10	63%	71%	56%
Northern Trust AM	US	906	7	70%	79%	59%
UBS AM	Switzerland	806	4	79%	91%	67%
AXA IM	France	801	6	71%	85%	55%
DWS	Germany	767	9	66%	66%	65%
BNP Paribas AM	France	594	5	72%	65%	80%
Aberdeen	UK	574	8	66%	78%	52%
Allianz GI	Germany	563	**3**	81%	89%	73%

Statistics

Figure 13: Voting ratios (in %) per country (2020)



Source: ShareAction (2020) & author's calculation

An example

Amundi's 2020 voting season

Key facts

- 4 241 general meetings
- 71% general meetings at which Amundi voted against at least one resolution
- 49 968 resolution votes
- 20% resolution votes against management:
  1. Structure of the board (47%)
  2. Capital transaction (20%)
  3. Remunerations (16%)
  4. Shareholder resolutions (12%)
  5. Other (5%)

Source: Amundi's stewardship report 2020

An example

Amundi's 2020 voting season

Shareholder resolutions

- **E** Amundi voted in favor of 86% of climate-related shareholder resolutions
- **S** Amundi voted in favor of 79% of social-related shareholder resolutions (social, health and human rights)
- **G** Amundi supported 88% of compensation-related shareholder resolutions

Engagement

- 489 pre-AGM meetings, 2 378 issues raised with companies
- Amundi engaged with 472 companies on energy transition and climate change and 447 companies on the protection of direct and indirect employees and human rights

Source: Amundi's stewardship report 2020

Shareaction 2021 Report

Figure 14: Shareaction 2021 Report: Voting Matters

Source: `https://shareaction.org/reports/voting-matters-2021-are-asset-managers-using-their-proxy-votes-for-action-on-environmental-and-social-issues`

Shareaction 2021 Report

Summary

The world's largest asset managers continue to block efforts to make progress on environmental and social issues.

- *[...] voting performance of the industry overall has remained stagnant, with a mere four percentage point increase in 'for' votes.*
- *The very largest asset managers' voting records provide particular cause for concern. [...] The six largest asset managers also vote more conservatively than the recommendations of their proxy advisors.*
- *Many asset managers are not exercising their voting rights, with seven assessed managers voting on fewer than 60 per cent of resolutions. Five of these are members of Climate Action 100+ [...]*

(Shareaction 2021 Report, page 5)

Statistics

Table 5: Ranking of the largest asset managers wrt voting ratios (2021)

Name	Country	AUM	Rank	Overall	Climate	Social
BlackRock	US	8 671	12	40%	53%	34%
Vanguard	US	7 253	**19**	26%	38%	20%
Fidelity	US	3 783	17	29%	23%	33%
State Street	US	3 465	15	32%	42%	27%
Capital Group	US	2 382	**18**	28%	26%	31%
JP Morgan AM	US	2 381	13	37%	50%	31%
Amundi	France	2 114	**2**	93%	97%	90%
GSAM	US	1 954	10	47%	57%	40%
Legal & General IM	UK	1 750	4	77%	87%	73%
Franklin Templeton	US	1 499	**20**	25%	25%	27%
T. Rowe Price	US	1 470	16	31%	44%	25%
Morgan Stanley IM	US	1 458	8	55%	59%	53%
Invesco	US/UK	1 349	13	37%	51%	28%
Wellington	US	1 291	11	44%	60%	37%
Northern Trust AM	US	1 165	6	60%	68%	57%
Nuveen	US	1 151	7	56%	76%	48%
UBS AM	Switzerland	1 087	5	75%	72%	75%
AXA IM	France	1 049	8	55%	72%	45%
DWS Group	Germany	969	**3**	85%	92%	80%
BNP Paribas AM	France	756	**1**	98%	96%	99%

Statistics

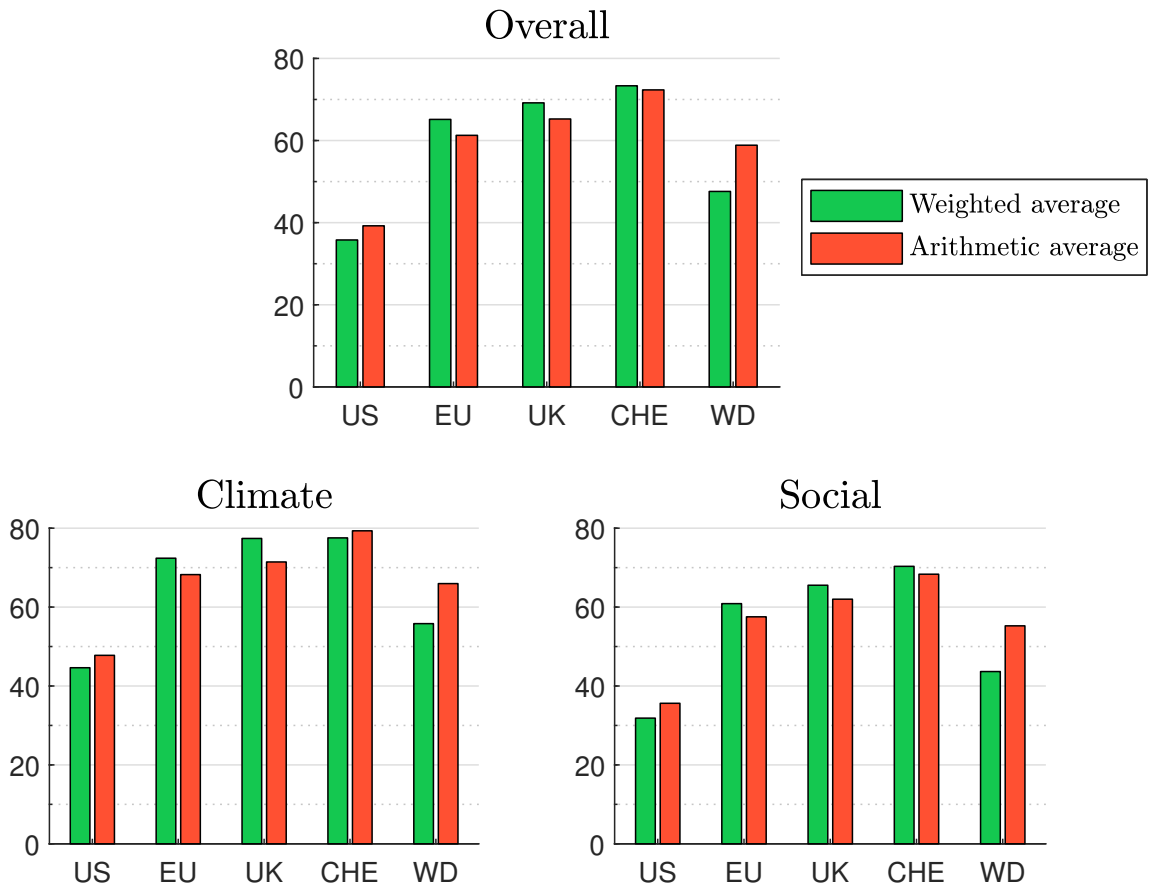
Table 6: Asset managers who saw the largest increase in votes 'for' between 2020 and 2021

Asset manager	Average percentage 'for' in 2020	Average percentage 'for' in 2021	Change in percentage points
Credit Suisse Asset Management	16%	77%	61
Nordea Asset Management	30%	91%	61
Lyxor Asset Management	1%	42%	41
Achmea Investment Management	58%	96%	38
BlackRock	12%	40%	28
BNP Paribas Asset Management	72%	98%	26
Capital Group	8%	28%	20

Source: ShareAction (2021)

Statistics

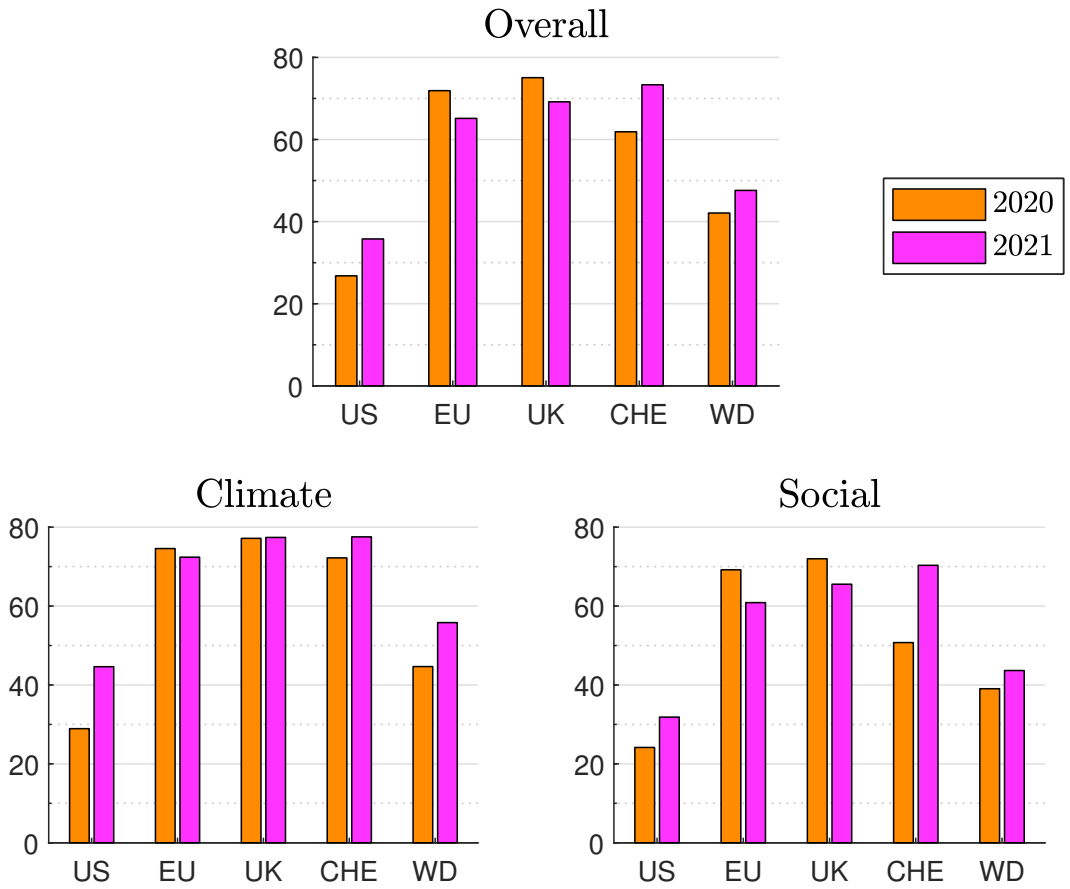
Figure 15: Voting ratios (in %) per country (2021)



Source: ShareAction (2021) & author's calculation

Statistics

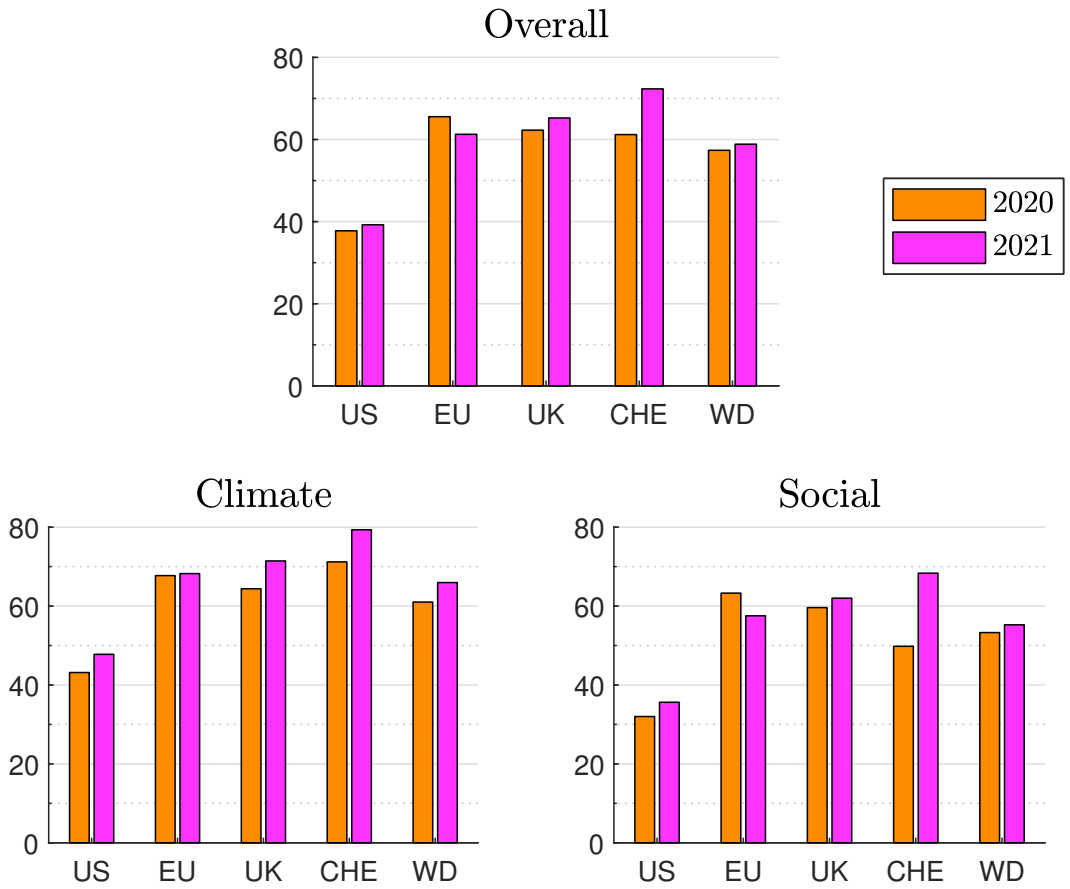
Figure 16: Comparison of 2020 and 2021 voting ratios (in %) per country (weighted average)



Source: ShareAction (2020, 2021) & author's calculation

Statistics

Figure 17: Comparison of 2020 and 2021 voting ratios (in %) per country (arithmetic average)



Source: ShareAction (2020, 2021) & author's calculation

Accounting