

Green finance: risks and opportunities. A central banker's view

Institute of Financial Integrity
and Sustainability



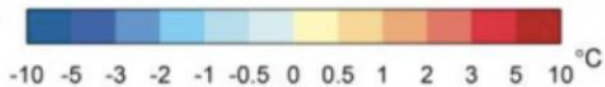
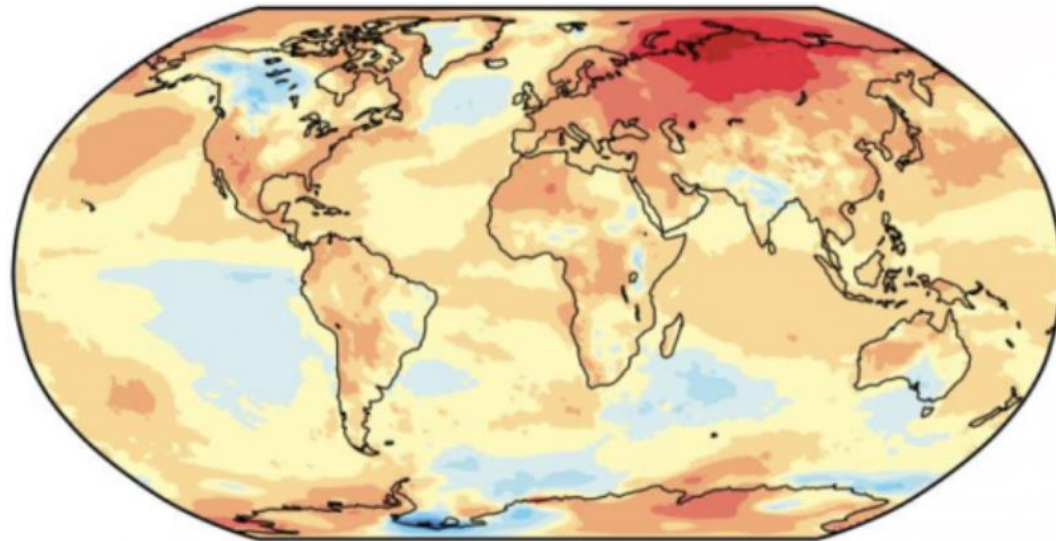
20 October 2022

Dilyara Salakhova

Setting the scene: climate change

Temperature difference between 2020 and 1981-2010

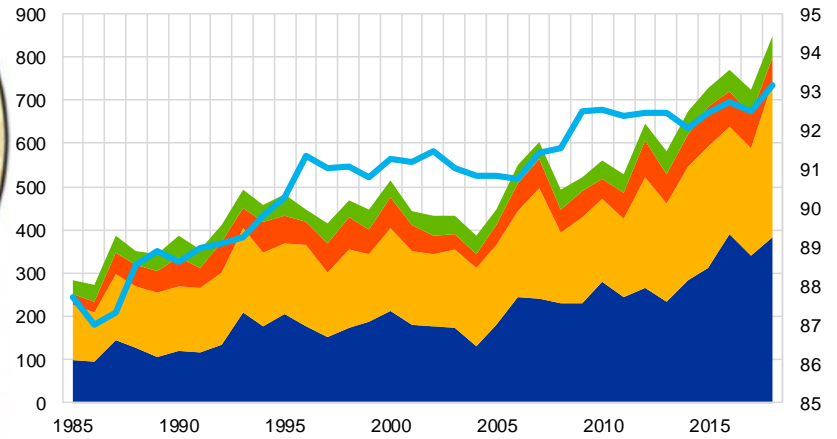
(1985-2019; LHS: number of events; RHS: percentages)



Number of relevant natural loss events worldwide

(1985-2019; LHS: number of events; RHS: percentages)

- Hydrological events
- Meteorological events
- Climatological events
- Geophysical events
- % of weather-related catastrophe losses - 5-year moving average (right-hand scale)

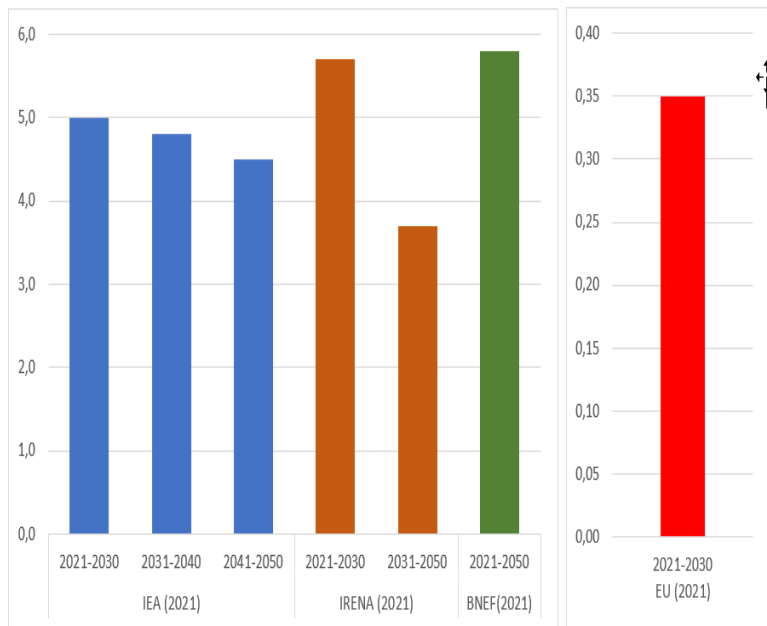


Sources: Munich Re NatCatService; Four Twenty Seven.

Setting the scene: transition and adaptation

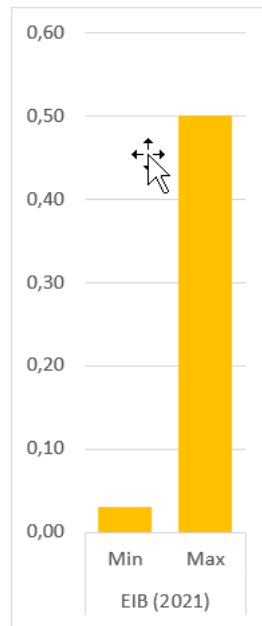
Average annual investment needs to reach net zero CO2 emissions from energy by 2050

(2021-2050, USD trillions; LHS chart: Global; RHS chart: EU)



Annual investment needs for adaptation measures in Europe

(USD trillions;)



European Climate Law:

A legal objective for the Union to reach

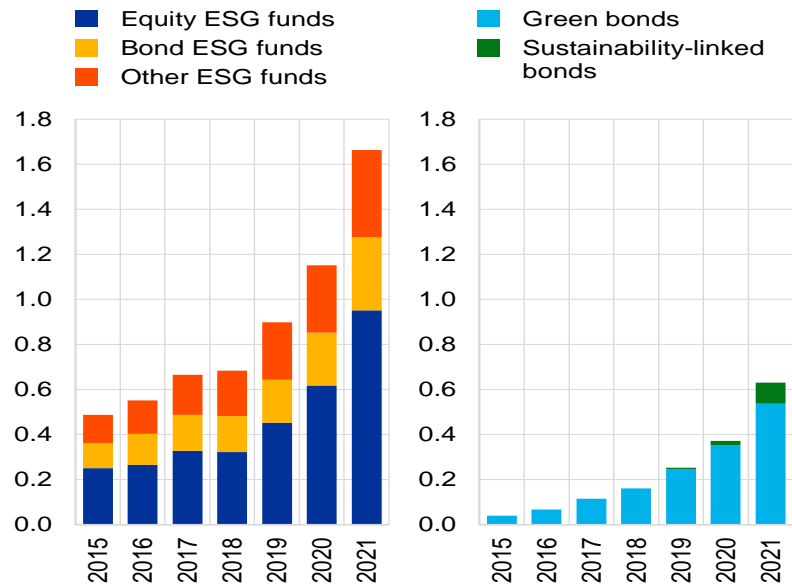
- carbon neutrality by 2050
- reduction of at least 55% of net GHG emissions by 2030

Sources: *left*: from Bruegel based on IEA (2021), IRENA (2021), BNEF (2021); *middle*: European Commission; *right*: UN Adaptation Gap Report (2021)

Growth of green finance in euro area

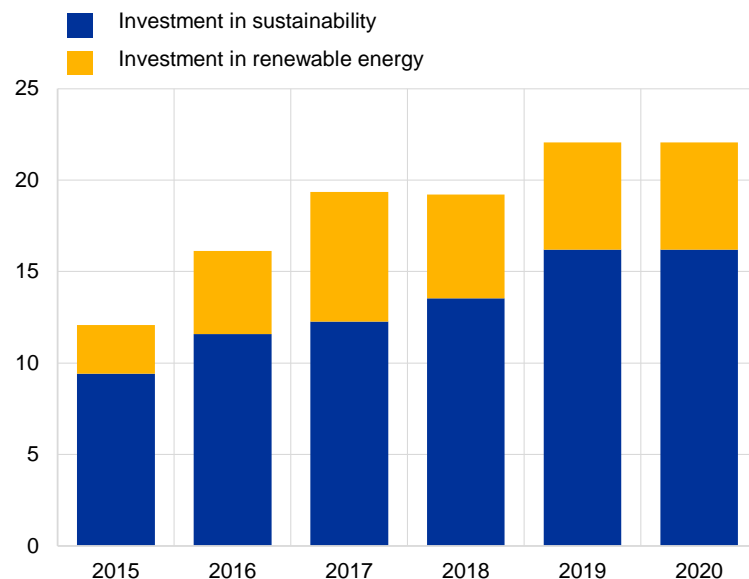
Outstanding amount of green bonds, and assets under management of ESG funds in the euro area

(2015-21, € trillions; LHS: outstanding amounts for bonds;
RHS: assets under management for funds;)



Investment in sustainability and renewable energy of NFCs listed in Euro STOXX 600

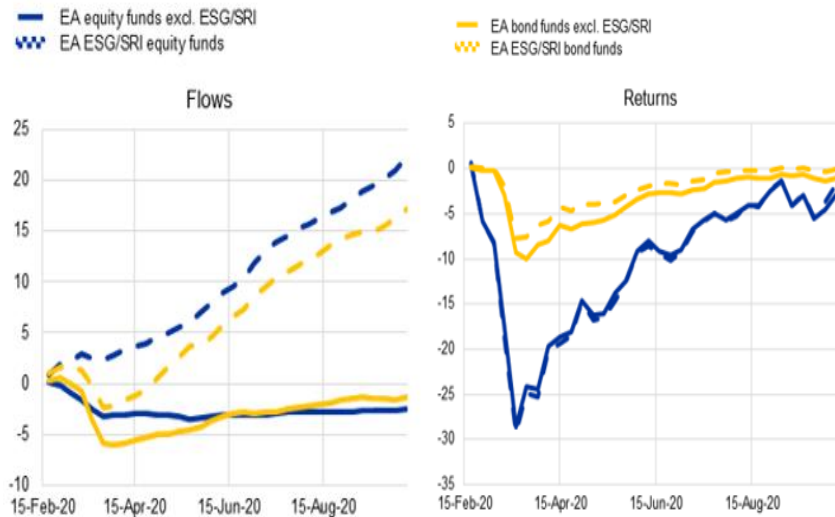
(EUR bn since 2015)



ESG funds

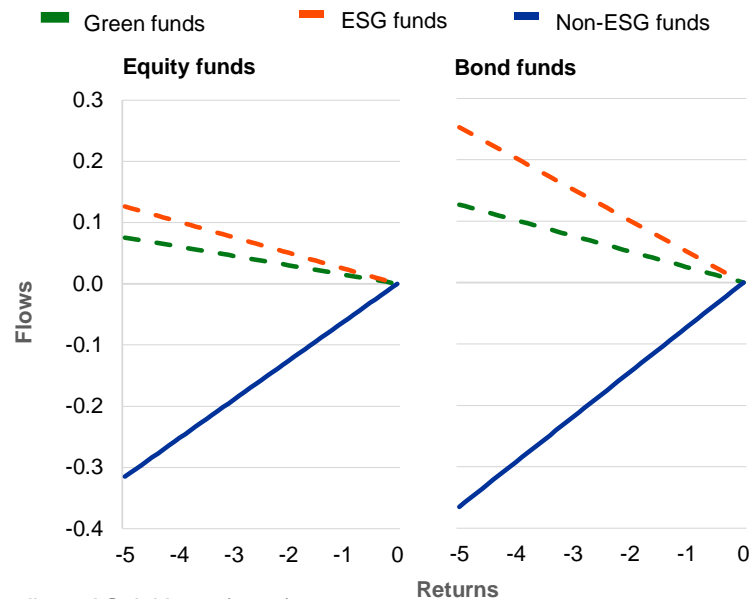
Cumulative flows and performance of ESG and non-ESG equity and bond funds

(percentage, February – November 2020)



Flow sensitivities to past negative returns of green, ESG and non-ESG corporate bond and equity funds

(coefficient estimates; dashed line: statistically not significant)

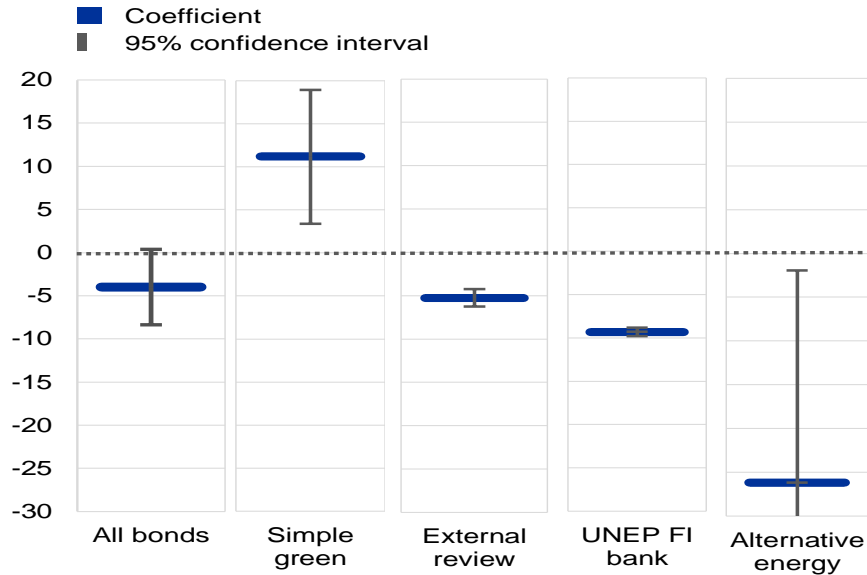


Sources: EPFR Global, Bloomberg and authors' calculations. From Capota, Giuzio, Kapadia and Salakhova (2022).

Green bonds

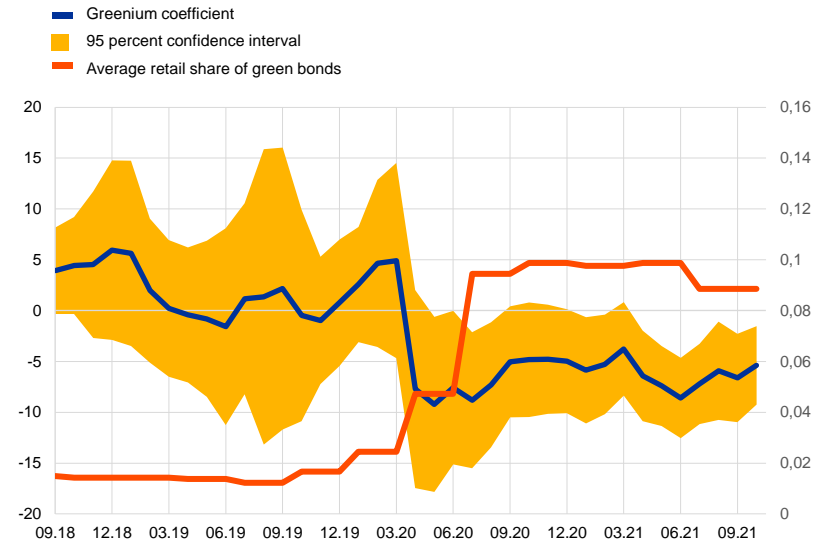
Greenium estimates in euro area secondary bond markets by category

(Basis points, difference between green and conventional bonds)



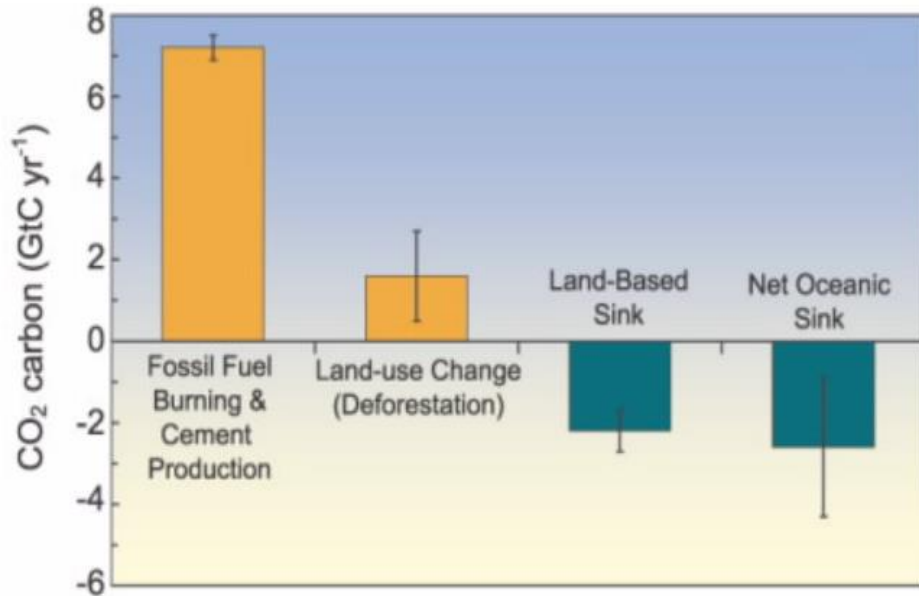
Monthly greenium estimates in euro area secondary bond markets and retail share (2018-21)

(Basis points, difference between green and conventional bonds)



Sources: Bloomberg, ECB Centralised Securities Database and authors' calculations .
From Pietsch and Salakhova (2022).

More funding to foster nature-based solutions



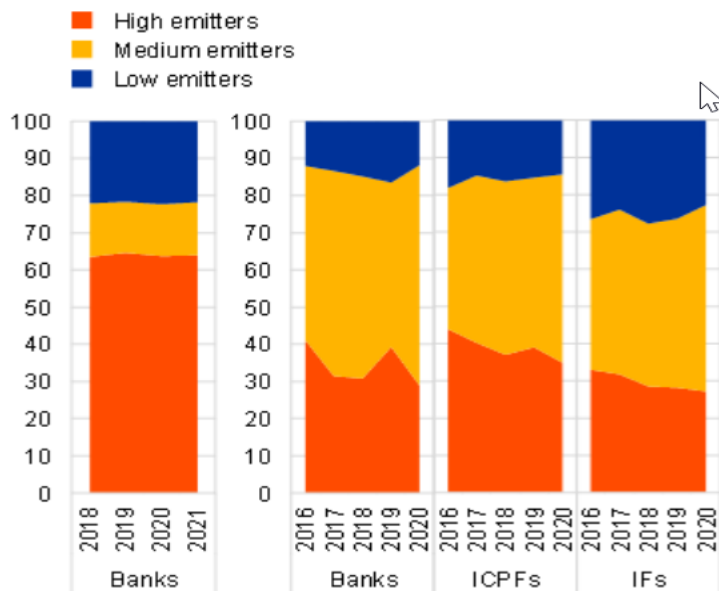
Sources: IPCC

- **Land and Ocean absorb** about **50%** of all emissions
- This is **thanks to the biodiversity** of the flora and fauna
- Unprecedented speed of species extinction
- Required funding to **preserve the biodiversity** and wild life on land and in the sea
- Growth of financial instruments aiming to finance such projects, e.g., **blue bonds**, has to be fostered

Financial sector exposure to transition and physical risk

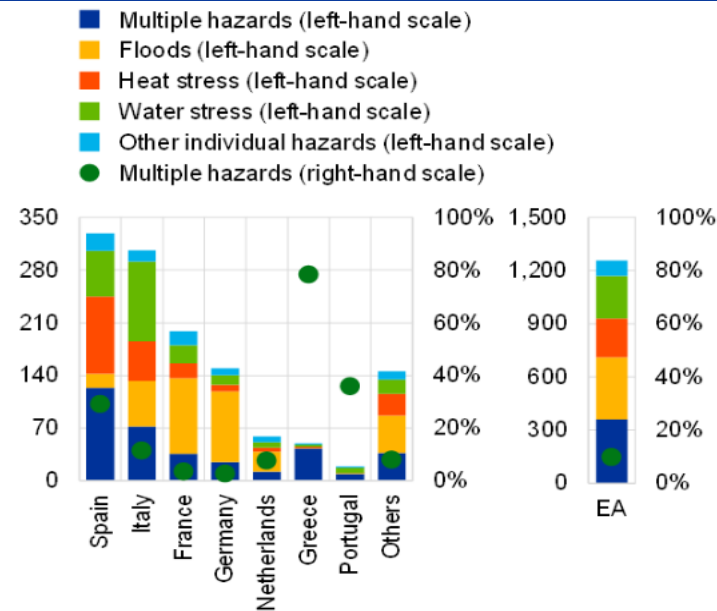
EA Financial sector exposure to securities holdings

(LHS: share of total credit exposures, percentages;
RHS: share of total securities holdings, percentages)



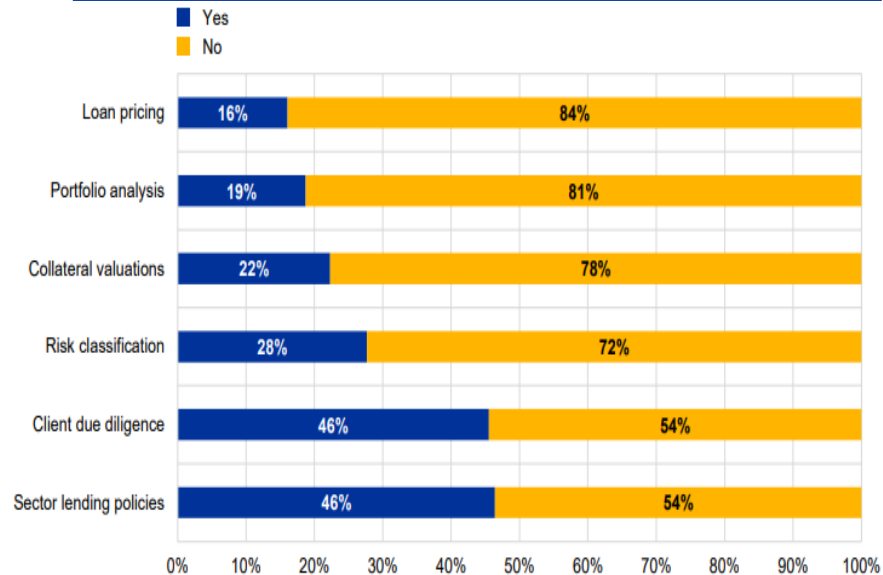
EA banks' loan exposures to firms subject to high or increasing physical risks

(Dec 2020, LHS scale: EUR billions, RHS scale: share of total loans)



Banks' integration of C&E risks

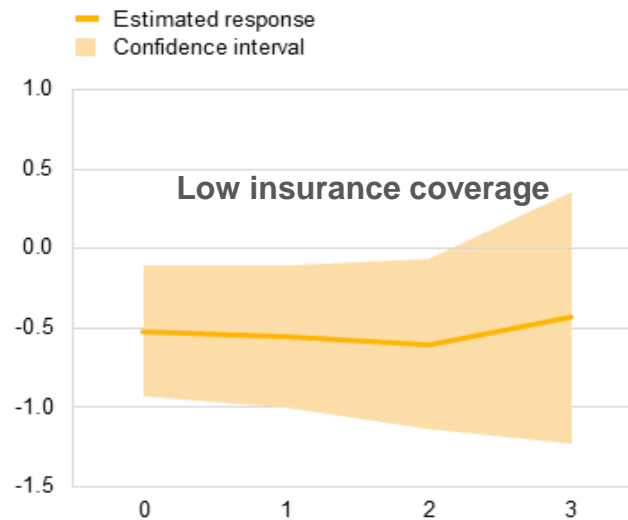
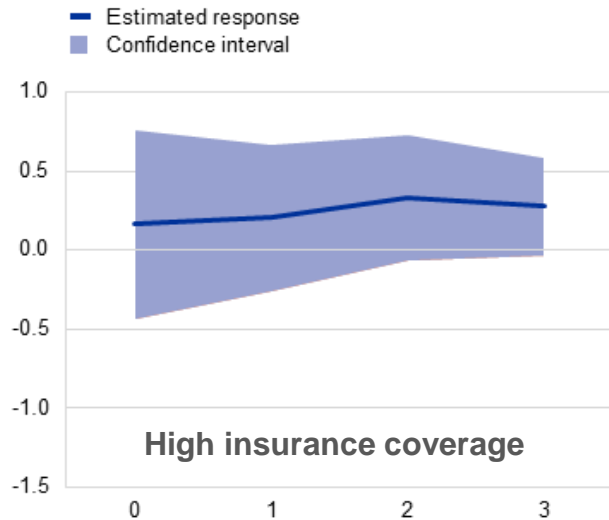
Percentage of EA banks that have integrated C&E risks into selected processes for credit risk management



Sources: ECB's supervisory assessment from "[The state of climate and environmental risk management in the banking sector](#)" (2021);

Insurance protection gap

Impact of insured vs uninsured losses from a large-scale disaster on annual GDP growth rate
(y-axis: impact on annual GDP growth rate (%); predictions up to three quarters ahead after a large-scale disaster)



- **33%** of climate-related economic losses in the euro area are **insured**.
- In **southern** European countries this share is **12%**.

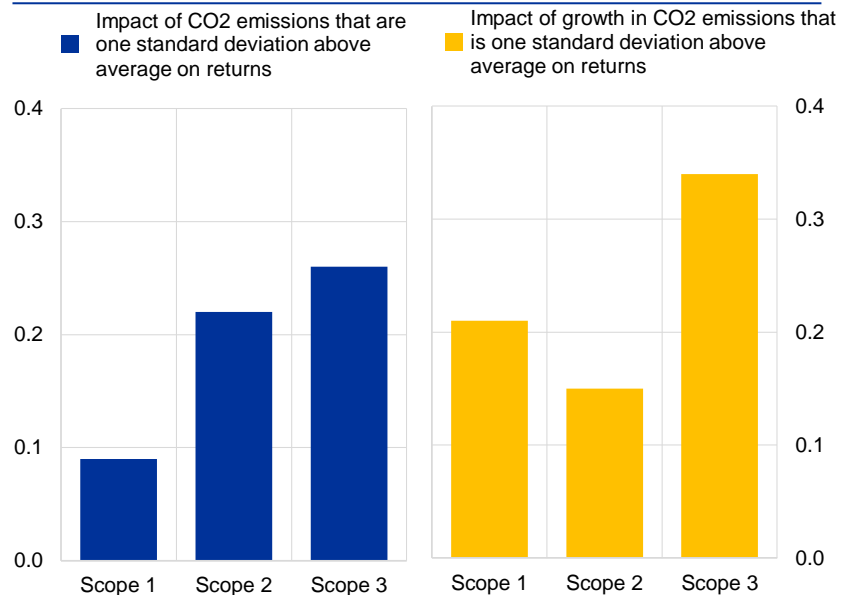
Sources: EM-DAT, OECD and authors' calculations.

From Fache Rousová, Giuzio, Kapadia, Kumar, Mazzotta Parker and Zafeiris (2021).

Pricing of transition risk in equity and debt markets

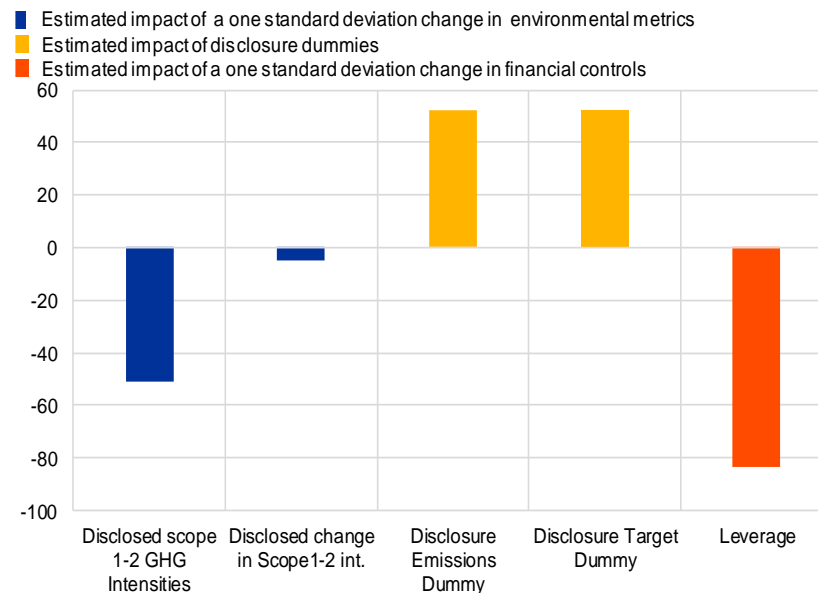
Carbon premia of firms with higher level and increase in carbon emissions

(2005 – 2018, percentage points, monthly stock returns)



Magnitude of transition risk metrics on credit ratings vis-a-vis leverage

(2010-2019, percentage of a credit notch)

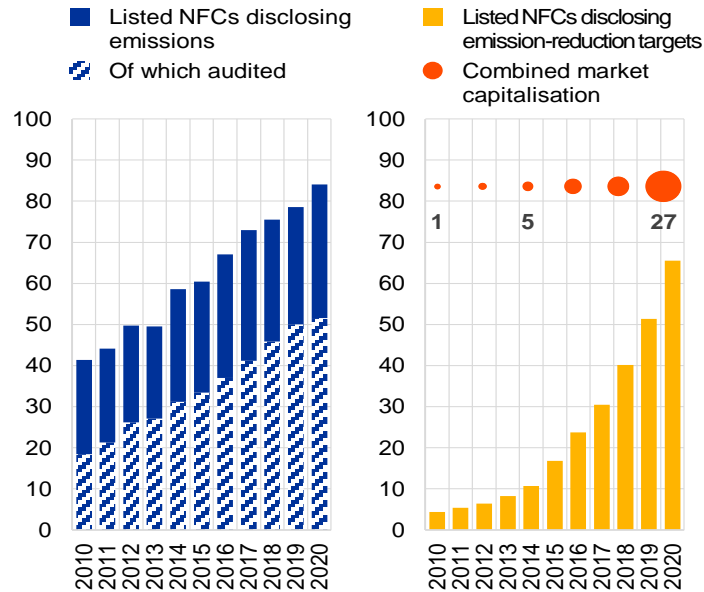


Sources: *left* From Bolton and Kacperczyk (2021); *right* Bloomberg and authors' calculations; from Carbone, Giuzio, Kapadia, Krämer, Nyholm and Vozian (2021).

Green finance, targets and the path to net zero (1)

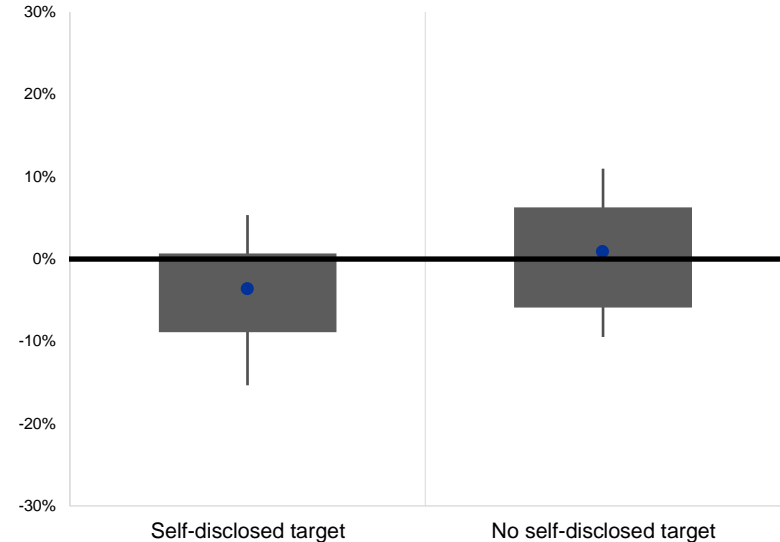
Disclosure of NFCs' GHG emission data by type of emitter, Covering firms in Eurostoxx 600 and S&P500

(LHS: percentages; RHS: percentages; market capitalisation, USD trillions)



Year-on-year change in Scope 1 and 2 emission intensity for firms disclosing or not an emissions reduction target

(YoY change in 2019 relative to 2018)

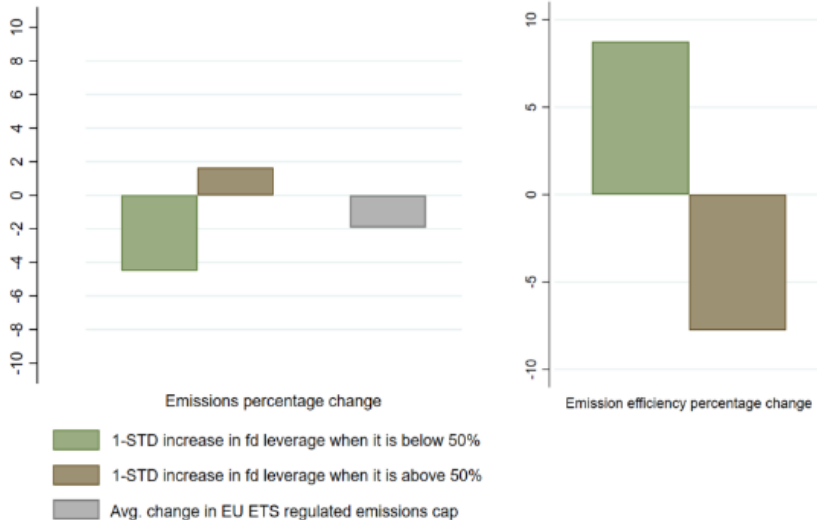


Sources: *left* Bloomberg and authors' calculations. *Right*. From Carbone, Giuzio, Kapadia, Krämer, Nyholm and Vozian (2021);

Green finance, targets and the path to net zero (2)

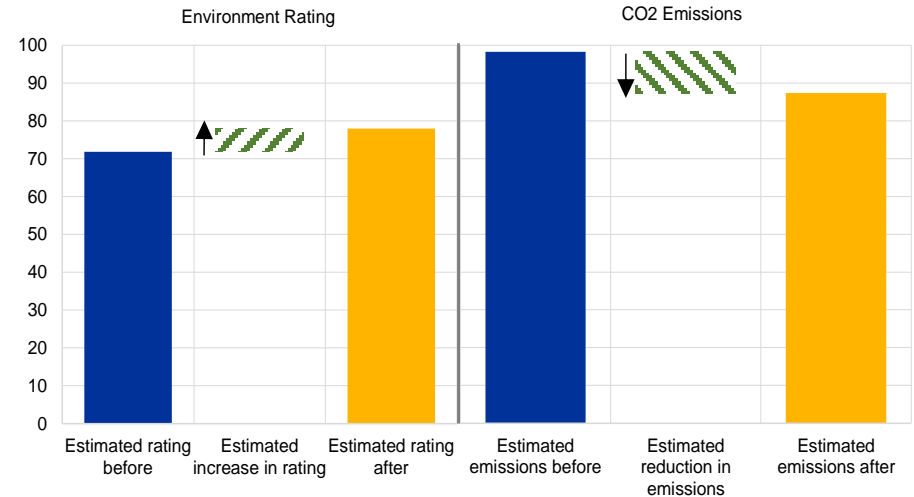
Impact of an increase in leverage on transition performance in firms subject to EU ETS

(Percentage change in absolute emissions and emission efficiency)



Firms' environmental performance following issuance of green bonds

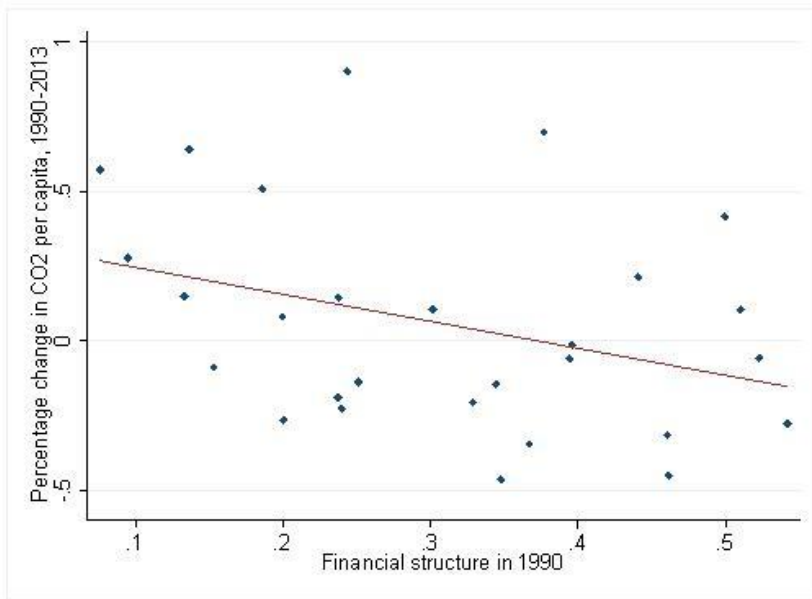
(Change in environmental rating and CO2 emissions/ book value of assets)



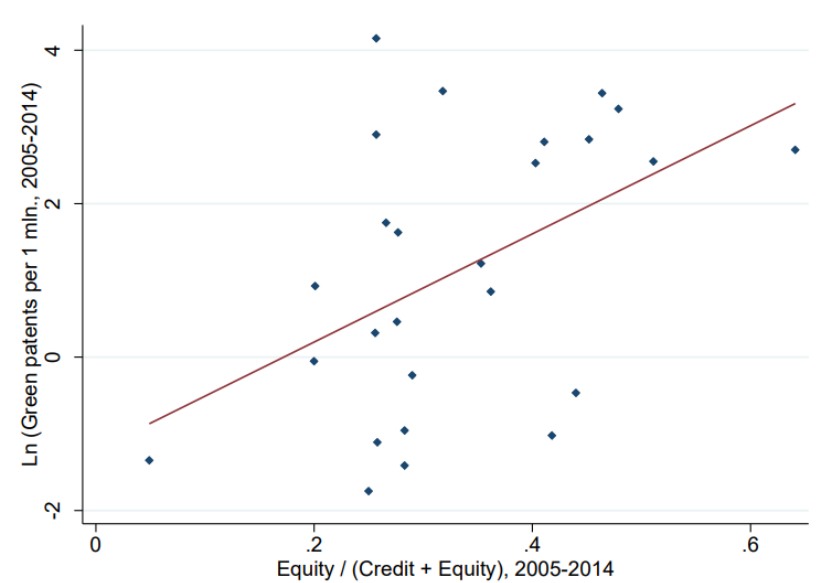
Sources: *left* from Carradori, Giuzio, Kapadia, Salakhova, and Vozian (2022); *right* from Flammer (2021).

Green finance, targets and the path to net zero (3)

Financial structure and change in carbon emission
(1990-2013; y-axis: percentage change; x-axis: share)



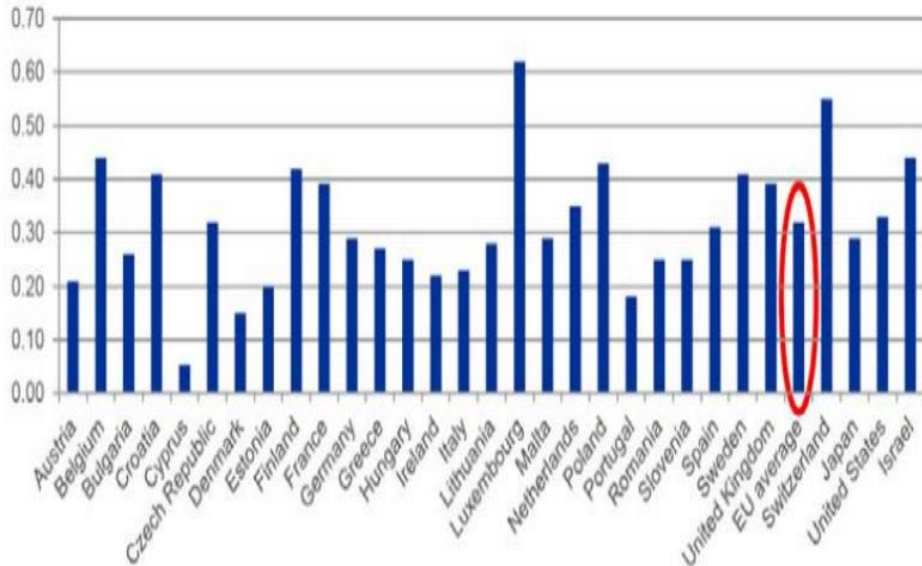
Financial structure and Green innovation in EU
(2005-2014, y-axis: share; x-axis: share)



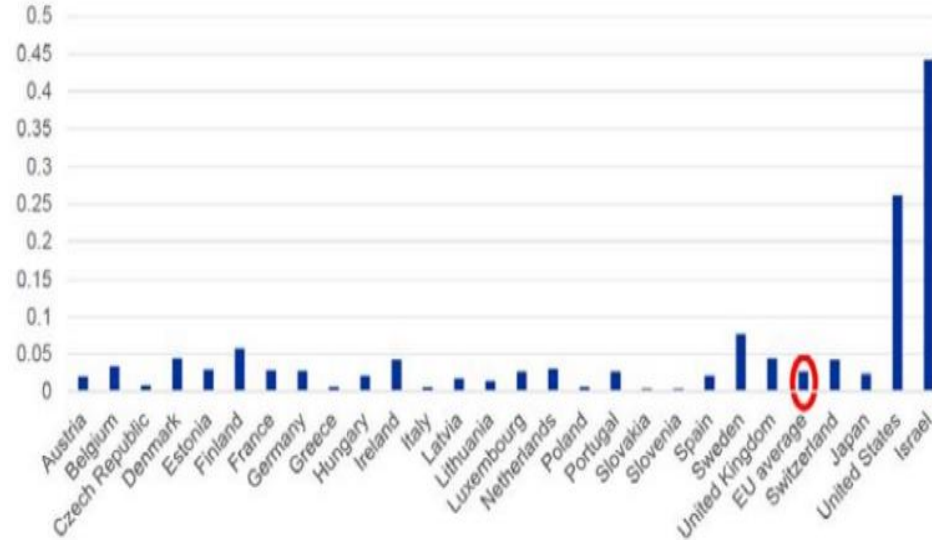
Sources: *left*: from De Haas and Popov (2019); *right*: from Aghion et al. (2022).

Financial structure in Europe

Share of equity in total market funding
(2005-2014, share)



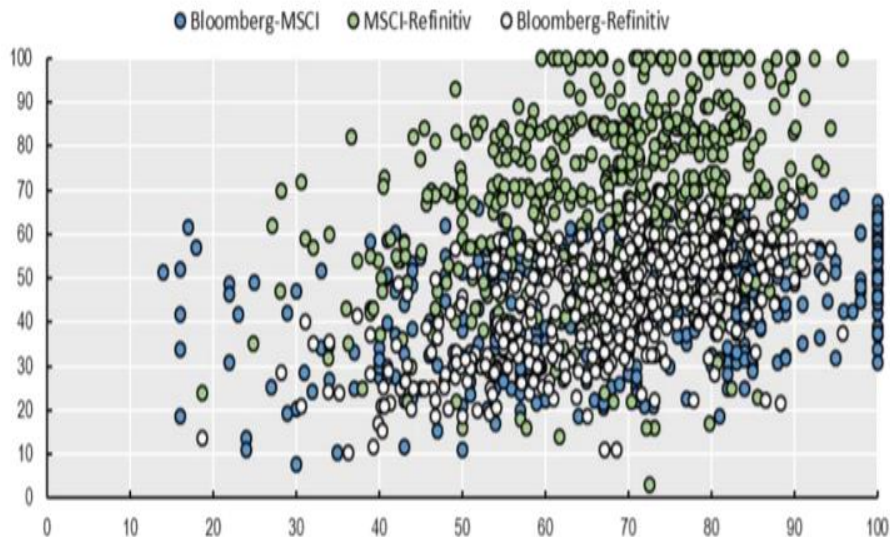
Venture Capital in EU
(2005-2014, share)



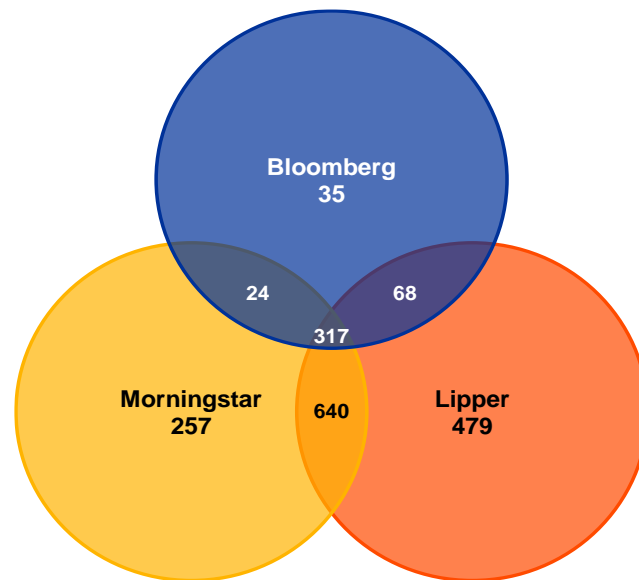
Sources: Worldbank's financial structure database. European Venture Capital Association, Eurostat. From Aghion et al. (2022).

Greenwashing risk

Euro STOXX 600 firm-level ESG ratings correlation for different providers (2019)



EU Funds classified as ESG by three providers (number of funds per category)



Sources: *left* Bloomberg, MSCI, Refinitiv, OECD Staff calculations; from Boffo and Patalano (2020); *right* Morningstar, Bloomberg, Lipper and ECB calculations. From Giuzio, Kapadia, Mazzolini and Salakhova (2022).

Some takeaways

- Green finance is growing rapidly, it seems to have a committed investor base and appears to be associated with favourable financing costs
- Transition risks have started to be priced by market participants; financial institutions are gradually responding to climate risks, but faster pace is needed
- Green finance can play a role in supporting an orderly transition
- Greenwashing is a concern

=> We need **more of sustainable finance** that funds **green projects** and strives to **make an impact**, not just more financial products carrying “ESG” in their names

How climate-related risks and mitigation policies fit into central bank mandates and objectives

Monetary policy

- Impact of climate change on macroeconomic conditions, incl. price stability
- Support of government's economic policies

Risk management

- Climate-related risks to the portfolio
- Assessment of new instruments: risks and opportunities

Financial stability

- Climate-related risks to the financial system and institutions
- Development of new markets and instruments
- Greenwashing risk
- Green bubble

Banking supervision

- Climate-related risks to the financial system and institutions
- Assessing banks' role in funding the transition

Topics of Policy discussion

Data gaps

Physical risk exposure

Adaptation measures

Granular insurance coverage

Corporates

Enhanced climate disclosure

Forward-looking Targets

Credible transition plans

Banking and insurance

Supervisory action

Climate stress tests

Prudential framework

Insurance protection gap

Private insurance

Public-private partnership

Disaster fund

Financial markets and instruments

Green bonds label

ESG funds label

Impact funds

Development of green capital markets

Credit Rating Agencies

Systematic integration of ESG and climate factors into CRA methodologies

Central bank

Non-monetary operations

Monetary operations

Background slides

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