



# Webinar on ESMA Risk Articles on sustainable finance

**Economics, Financial Stability and Risk Department**

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1. **Dynamic modelling of climate related shocks in the fund sector**
2. Financial impact of greenwashing controversies
3. Impact investing – Do SDG funds fulfil their promises?

# Motivation

July 2021 Strategy for Financing the Transition to a Sustainable Economy → supervisory stress testing mandates for the ESAs

- Development of methods for climate stress tests
- One-off exercise in line with the Fit-for-55 package
- Perform regular climate stress tests or scenario analyses

Our work so far focuses on investment funds – sector especially important in this context given its large size and role in financing green transition

# First approach to dynamic modelling

Given a specified shock to asset prices, modelling static impact is conceptually straightforward

In reality, would expect dynamic response from investors and managers

→ ESMA developing dynamic approach to modelling impacts of climate-related shocks on the fund sector

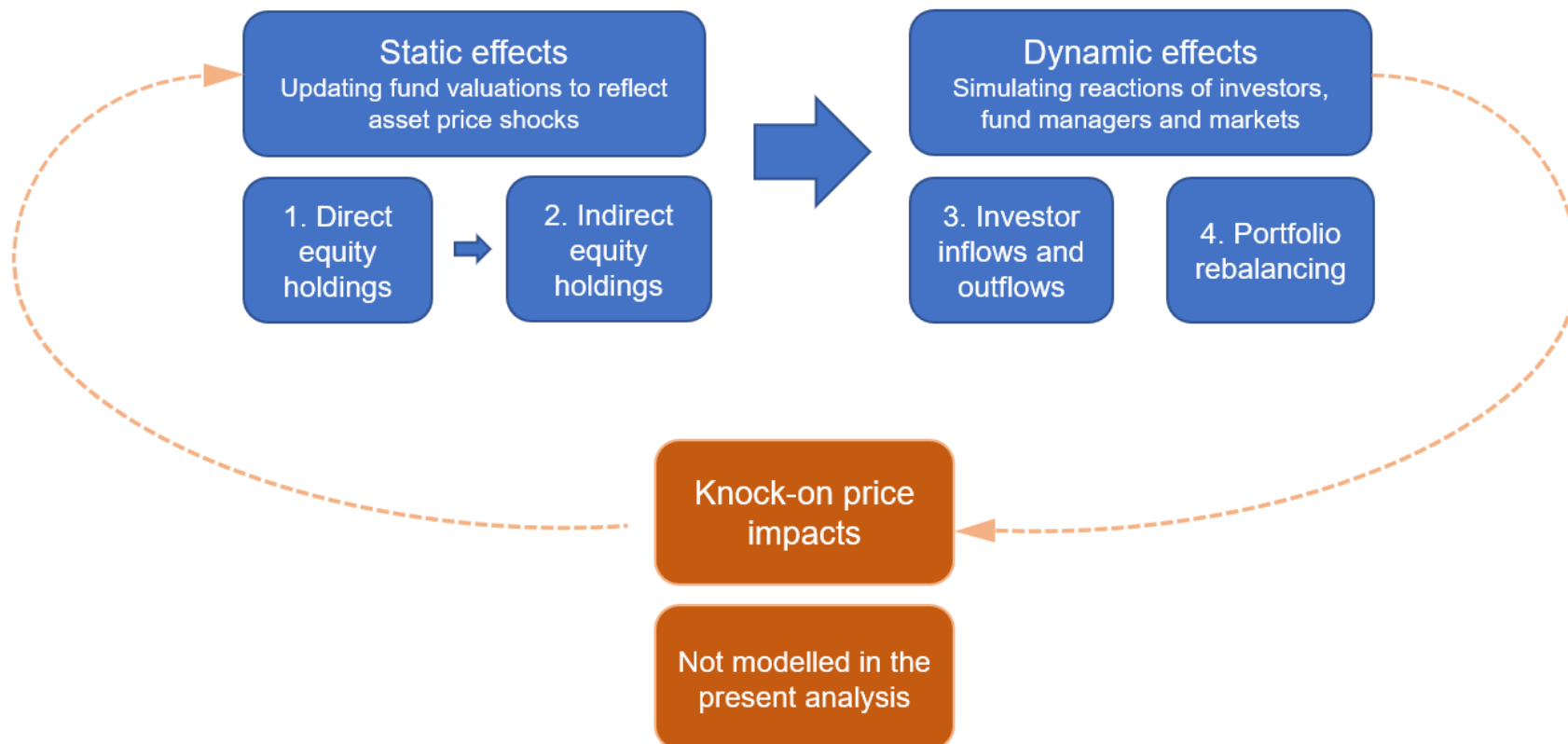
The methodology can be used for the different new ESMA mandates

- Methodology is modular; can use different components according to the task at hand
- Calibration and adjustment of different features

## 1. Dynamic modelling of climate-related shocks in the fund sector

# Sequence of components to model

Sequentially model of static + dynamic effects following asset price shock



**Knock-on price impacts** would be an extension for future work

# Dynamic components

Once the value of funds is adjusted for the static effects, model **dynamic effects** due to the actions of economic agents:

- (i) **Inflows and outflows** by investors in response given their changed financial circumstances + expectations of a fund's relative benefits to them
- (ii) **Portfolio rebalancing**, whereby fund managers decide to buy or sell assets in line with their mandate, in response to the changing financial conditions

Assumptions include:

- Dividend distributions / reinvestment not modelled
- Investors are financially unconstrained. Flows are frictionless and independent across funds
- Liquidity shocks are not modelled; there is always sufficient demand to meet asset sales at (post-shock) market prices

## 1. Dynamic modelling of climate-related shocks in the fund sector

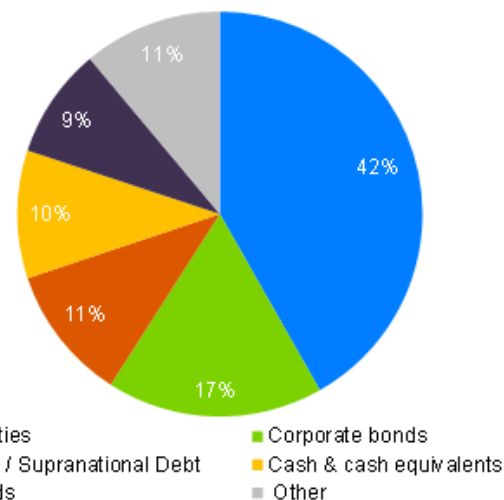
# Data and calibration

Morningstar dataset of fund portfolio holdings enriched with further information from Refinitiv Eikon

Dataset represents a portfolio snapshot as of June 2023

Covers c. 19 000 EEA funds with EUR 10 tn assets under management:

Distribution of fund portfolio holdings by asset class  
Equities are the largest position in European fund holdings



Note: Morningstar portfolio holdings dataset, distribution of asset classes.  
Sources: Morningstar, ESMA.

Fund outflows following shock are calibrated with elasticities from Renneboog et al (2011), conditioning on fund's ESG status

For illustration, the article assumes baseline and adverse scenario used by ECB-ESRB project team (different to one-off exercise scenarios) and only models impacts from **equity holdings**

# 1. Dynamic modelling of climate-related shocks in the fund sector

## Findings

Focus on direction and relative magnitude of dynamic adjustments

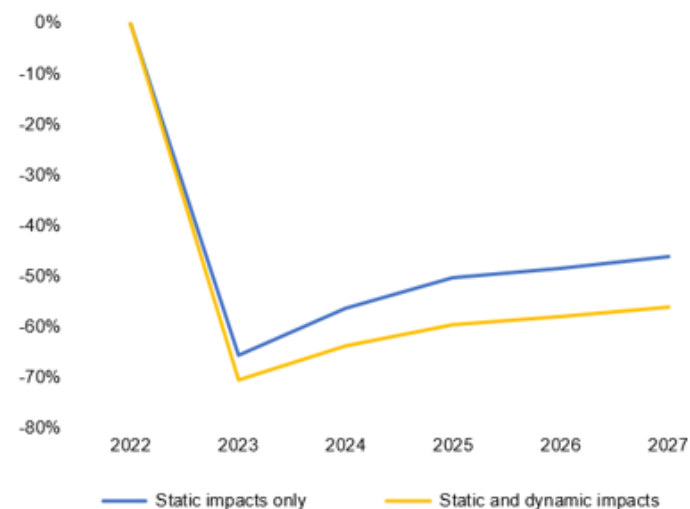
Dynamic effects applied in first period

Sizeable effect driven by investor outflows, exacerbating declines in value of holdings modelled

Rebalancing would only mitigate subsequent shocks

### Main results from scenario modelling

Dynamic impacts exacerbate major declines in fund values



Note: Proportional change in total assets under management for sample of EEA-domiciled investment funds; static-only calculations plotted alongside cumulative effects of static and dynamic components.

Sources: ESRB, NGFS, Bundesbank, Banque de France, Morningstar, ESMA



1. Dynamic modelling of climate related shocks in the fund sector
- 2. Financial impact of greenwashing controversies**
3. Impact investing – Do SDG funds fulfil their promises?

# Motivation

### Importance

- Continuous investor demand for ESG investments and the financing needs for the transition may be hampered by mounting greenwashing concerns
- ESMA priority to address greenwashing and develop approaches for monitoring greenwashing risks

### Financial risk dimension

- Different risk transmission channels (reputational, financial, legal)
- No evidence of whether/how greenwashing feeds into financial stability issues

### Economic literature

- Relationship between corporate reputation and financial performance
- Relationship between the absorption of ESG information and value relevance for firms

### Research questions

- 1) Are controversies useful to monitor greenwashing?
- 2) Do greenwashing controversies have any financial impact?

## 2. The financial impact of greenwashing controversies

# Dataset and identification of greenwashing

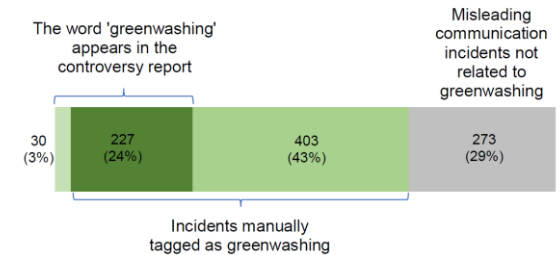
## Data

- ESG controversies from RepRisk
- Misleading communication incidences: “Company manipulates the truth to present itself in a positive light, but contradicts this image through its actions, or misleads consumers about its products and services”
- European firms from STOXX Europe 600 index 20-21: 192 firms (32%), 933 misleading communications
- Firms may be tagged because name appears in report, but allegations do not concern them

## Refined approach: Two identification methods

- Automatically tag controversies where the word ‘greenwashing’ appears in the title or description
- Manually tag controversies to align with ESAs’ understanding of greenwashing
- The two methods yield 630 greenwashing controversies between Jan 20 and Dec 21
- Environmental controversies make up half (50%) of the sample

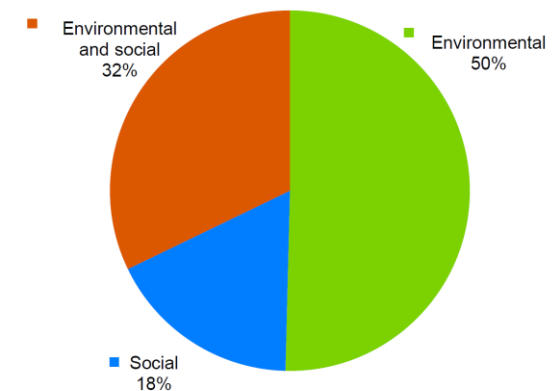
## Greenwashing in misleading communication incidents Identification varies according to definition



Note: Number and % share of misleading communication incidents related to potential greenwashing between 1 January 2020 and 31 December 2021, involving the constituents of the STOXX Europe 600 index (composition as of July 2022).

Sources: RepRisk, ESMA.

## Greenwashing controversies by type Environmental controversies dominate



Note: Share of environmental, social and environmental and social greenwashing controversies (n=625) involving STOXX Europe 600 firms in 2020 and 2021.

Sources: RepRisk, ESMA.

## 2. The financial impact of greenwashing controversies

# Incidences: Frequency increases over time

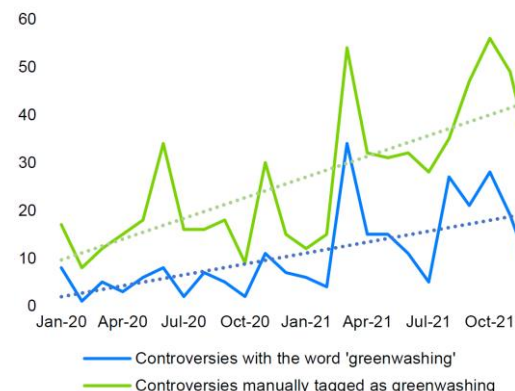
### Incidences of greenwashing reports grow

- The frequency of greenwashing controversies is increasing, regardless of identification method
- Not clear whether because of increased public scrutiny or due to growing number of actual greenwashing occurrences
- Growing flow of greenwashing-related news highlights increased greenwashing perceptions, underscoring relevance of topic from risk perspective

### Variety of issues, with high sector concentration

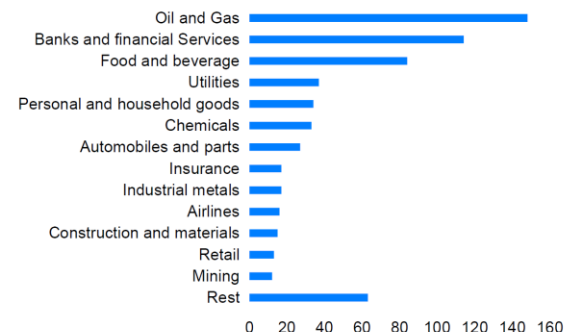
- Greenwashing controversies are mainly concentrated in three sectors; and 28% of controversies relate to just five firms (incl. four from oil and gas sectors)
- The correlation between firm size and number of controversies reinforces the view that public scrutiny is an important factor
- Greenwashing controversies involving the financial sector warrant particular monitoring to ensure that trust remains in the ability of the sector to finance the low-carbon transition

Monthly number of greenwashing controversies  
Growing frequency



Note: Monthly count of greenwashing controversies involving STOXX Europe 600 firms. Dotted lines are linear trends.  
Sources: RepRisk, ESMA.

Greenwashing controversies by sector  
Controversies concentrated in three sectors



Note: Number of greenwashing controversies grouped by sector.  
Sources: RepRisk, ESMA.

# Financial impact: Three-pronged approach

### Event study

- › Test for significance of firm-specific abnormal stock returns in the days following greenwashing controversies
- › This tells us if observed returns deviate from expected returns following greenwashing controversies

### Panel regression

- › Regress daily stock returns on a greenwashing dummy variable and a set of market and firm-specific control variables
- › This tells us if greenwashing controversies drive stock returns at all

### Cross-sectional regression

- › Regress price-earnings ratios on a greenwashing dummy variable and a set of firm-specific control variables
- › This tells us if greenwashing controversies are value-relevant for firms



No statistically significant results that confirm a systematic impact of greenwashing controversies on firm-level financial metrics

# Conclusion

## 1. Greenwashing monitoring

- ESG controversies reflect public perceptions and can be useful to monitor reputational risks stemming from potential greenwashing-related incidents
- There are methodological challenges to using these data for portfolio analysis
- Controversies provide useful information on greenwashing *perceptions* but not necessarily on greenwashing *occurrences*
- Greenwashing controversies involving European firms have been growing between 2020 and 2021 and tend to be concentrated within a few sectors (incl. financials)

## 2. Financial impact of greenwashing controversies

- No clear evidence that greenwashing controversies had a systematic financial impact in 2020-2021
- Growing levels of public scrutiny suggest that investor and market reaction to greenwashing may change in the future
- These results highlight the absence of effective market-based mechanisms to help prevent potential greenwashing behaviour

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### 3. Impact investing – do SDG funds fulfil their promises?

## Motivation

### What are SDGs and why do they matter?

- Framework, as part of the UN 2030 Agenda for Sustainable Development, with 17 goals, 169 targets and 232 indicators.
- Significant funding needs, aggravated by Covid-19 crisis



### The rationale to analyse SDG funds

- Call for alignment of private business investment flows with the SDGs
- Funds can be an attractive vehicle to bridge the funding gap and have been growing rapidly (tripled in size between 2020 and 2021)

### Importance to ESMA

- Growing number of investors looking for sustainable investment vehicles promising real-world impact.
- Impact claims often leverage well-known sustainability frameworks including the SDGs, but can be prone to impact-washing or SDG-washing due to popularity and difficulties to assess private sector contributions
- Important to ESMA’s investor protection objective

### Research question

- How can impact claims against the SDGs be assessed and do SDG funds’ portfolios differ from non-SDG counterparts?

SDG funds size  
SDG fund size tripled between 2020 and 2023



Note: SDG funds size, EUR bn.  
Sources: Morningstar, ESMA.



### 3. Impact investing – do SDG funds fulfil their promises?

# Datasets and sample construction

## Identification of SDG funds

- “SDG funds” are funds *using language related to the SDGs in their regulatory communication*
- Manual review:
  - eliminate false positives
  - EEA-domiciled equity, bond or mixed active investment funds with portfolio holdings no older than 2022
- **Final sample of 187 SDG funds**, compared with a benchmark sample of 14,446 non-SDG funds
- Additional data (portfolio holdings and funds’ financial and non-financial characteristics)

## Assessing SDG involvement – private sector

- United Nations Global Compact (UNGC) initiative → information for 21,997 firms
- Harmonize company names from portfolio holdings data and the UNGC website using Levenshtein techniques and manual reviews
- **47% of the holdings can be matched to a company participating to the UNGC**

## Assessing SDG involvement – public sector

- 15% of SDG funds hold government or supranational debt assets
- Leveraging country-level data from the SDG index

## Principle Adverse Indicator Disclosures (PAI) under SFDR

- Fund-level information specifying the extent to which investments harm sustainability objectives

### 3. Impact investing – do SDG funds fulfil their promises?

## Results – private sector

### SDG funds versus non-SDG funds

- SDG funds do not differ significantly from non-SDG funds in the extent to which they hold companies participating to the UNGC

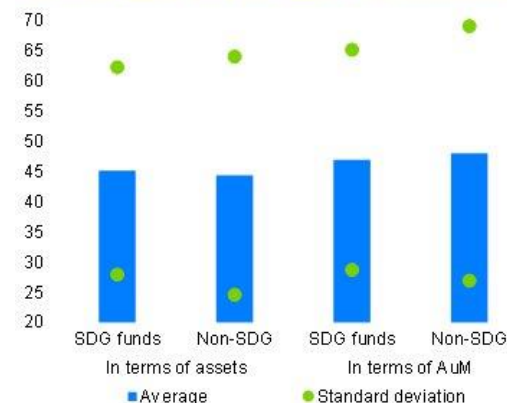
### SDG funds versus ESG funds

- Split the sample of non-SDG funds between ESG and non-ESG funds
- SDG funds have an intermediate position between non-ESG and ESG funds

### SDG funds versus disclosure regime under SFDR

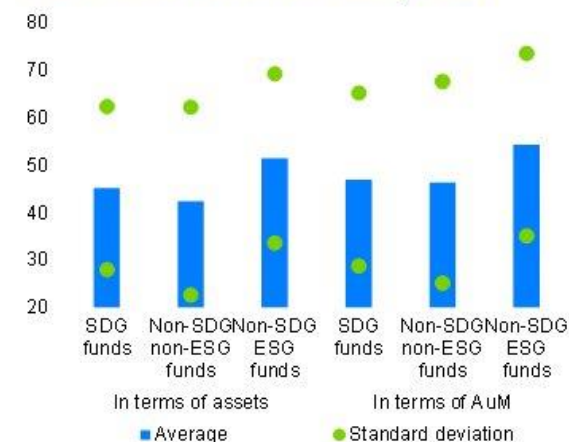
- Split the sample of non-SDG funds according to their disclosure regime under SFDR
- Average exposure of SDG funds higher than the average exposure of Art. 6 funds but lower than the average exposure Art.8 and Art. 9

Exposure to UN Global Compact companies  
No clear SDG and non-SDG fund distinction



Note: Average and standard deviation of exposures (in terms of assets and AUM) to companies participating to the United Nations Global Compact. Sources: Morningstar, UNGC, ESMA.

Exposure to UN Global Compact companies  
SDG funds at an intermediate position



Note: Average and standard deviation of exposures (in terms of assets and AUM) to companies participating to the United Nations Global Compact. Sources: Morningstar, UNGC, ESMA.

### 3. Impact investing – do SDG funds fulfil their promises?

# Results II – Public sector and PAI

## Country level and government bonds

- Do SDG funds differ in their government assets with regard to the underlying country level SDG performance?
- SDG funds have a higher average exposure to countries with a higher SDG index score (73.7 vs. 64.16)
- However, exposure levels vary significantly and for some goals SDG funds' exposure is worse compared to non-SDG funds

## Development banks

- 8% of funds hold bonds from development banks (similar for SDG and non-SDG funds) but SDG funds with a higher share of fund AuM (13% vs. 8%).
- Regression analysis shows that SDG funds are not associated with larger holdings of development banks

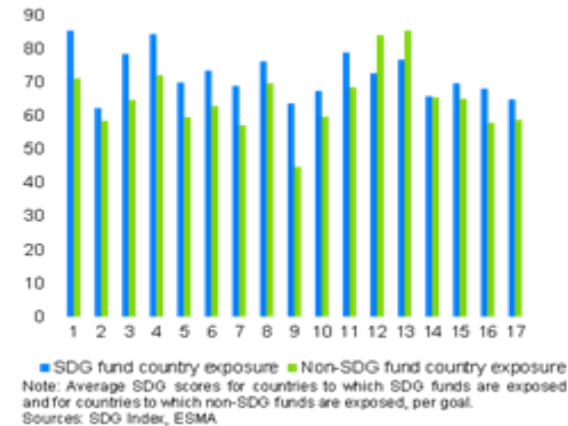
## PAI disclosures

### Goal 13 (climate action)

- SDG funds have lower scope 1 GHG emissions but higher scope 2 GHG emissions
- For scope 3 emissions SDG funds are estimated to have more than 50% more emissions compared to non-SDG funds

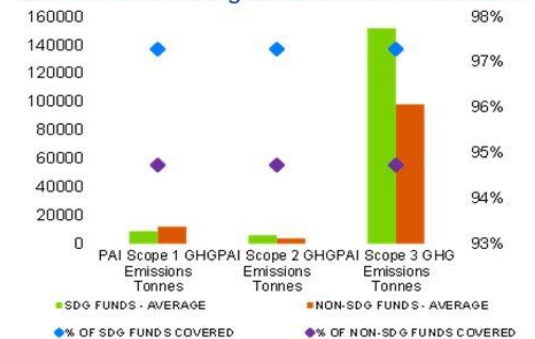
### Goal 5 (gender equality)

- SDG funds have lower average gender pay gap
- Non-SDG funds have higher percentage of female board members



### SDG vs non-SDG funds selected PAI disclosures

SDG funds have higher GHG emission values



Note: Average value of SDG vs. non-SDG funds per the PAIs on scope 1, scope 2 and scope 3 GHG emissions/tonnes, and share of funds disclosing this information in % (right axis)  
Sources: Morningstar DIRECT, ESMA.

## Conclusion

### **A nascent but rapidly growing market:**

- SDG funds make up a small but rapidly growing share of the funds' universe (aggregate size of SDG funds x3 since 2020)

### **Challenges in assessing SDG impact claims**

- Assessing how SDG funds are contributing towards the achievement of the concrete goals requires to bring together various pieces of information from different sources

### **No significant difference between SDG funds vs. non-SDG counterparts**

- SDG funds do not seem to differ significantly from non-SDG funds in terms of SDG contribution
- Signs that SDG funds are closed to ESG funds or Art. 8 / Art. 9

# Questions & Answers