Enhancing market transparency in green and transition finance:
issues at stake and opportunities

Irene Monasterolo, Professor of Climate Finance, EDHEC Business School, EDHEC-Risk Climate Impact Institute (ERCII)

Taxonomies and their use

1. *Science-based taxonomies* are expected to play a main role to inform investors' climate financial risk disclosure and risk assessment

2. However, lack of policy coherence and credibility affects their relevance for sustainable finance:

    •   Example: vote on EU Taxonomy of sustainable activities (July 2022) will crucially affect firms and investors' disclosure but not the composition of the economy for achieving the low-carbon transitition

3. We still do not have a *Taxonomy of carbon stranded assets*:

    •   Stranded assets not well defined yet: research and supervisory work focuses on fossil fuels reserves, production plants, specific sectors (e.g. NACE B)

    •   This approach leads to underestimate the role of stranded assets in the economy and in investors' portfolios (Monasterolo 2020).

Climate transition metrics, frameworks, and market products

- Often, high firms' GHG emissions or ESG risk used a proxy and applied for *disclosure regulation* and *greening monetary policies (see ECB's climate tilting proposal to green corporate bonds asset purchase programs)*.

- But several limitations:

  - **GHG emission** data are not yet adequate to support portfolio rebalancing: **scarce, inconsistent reporting**, see scope 3 in Figure 1
  - Scope 1 and 2: most data are estimates by data provides (different models, Busch ea 2021)

Consistency between scope 3 emissions intensity and business models		
Issuer	Indirect renewable capacity	Scope 1+2+3 emission intensity
A2A S.p.A.	21%	1'086.3
Engie S.A.	41%	2'708.1
ENEL S.p.A.	49%	2'167.9
Fortum Oyj, Helsinki	52%	4'099.5
Iberdrola SA	66%	1'697.1
ERG S.p.A	67%	1387.3
Verbund AG	69%	436.4
EDP - Energias de Portugal SA	76%	1'836.7
Issuer	Average fleet emissions	Scope 1+2+3 emission intensity
Bayerische Motoren Werke AG	127.0	650.5
Daimler AG	137.0	424.9
FCA NV (Stellantis NV)	124.8	40.5
Volkswagen AG	124.0	1'607.3

Figure 1: Selected companies in transport and electricity generation. Differences in reporting for scope 1+2+3 emission intensity against fundamentals (e.g. renewable capacity, fleet emissions) that should be related to those intensities. Source: Bressan et al. 2022

Bressan, G., Monasterolo, I, Battiston, S. (2022). Sustainable investing and climate transition risk: a portfolio rebalancing approach. Forth. on Journal of Portfolio Management.

Forward-looking dimension still missing

- Forward-looking dimension, when included, refers to firms' *NetZero ambitious plans.*
  - Problem: will and could they be implemented in the future? (mora hazard)

- A science-based forward-looking assessment of transition risk would consist in mapping the variables of climate scenarios (e.g. NGFS) into classes of transition risk exposure:
  - CPRS-Granular allows us to assign a transition risk profile to IAM variables, and to map NACE 4-digit codes to relevant IAM variables and their trajectories across NGFS scenarios

NACE	CPRS1	CPRS2	CPRS-Granular	NGFS_Granular
45.11	5-transportation	5-transportation|roads	transportation|vehicles|combustion	Final Energy|Transportation|Liquids
45.11	5-transportation	5-transportation|roads	transportation|vehicles|electric	Final Energy|Transportation|Electricity
45.11	5-transportation	5-transportation|roads	transportation|vehicles|hybrid	Final Energy|Transportation|Electricity
45.11	5-transportation	5-transportation|roads	transportation|vehicles|hydrogen	Final Energy|Transportation|Hydrogen
46.71	1-fossil-fuel	1-fossil-fuel	fuel|fossil|sale	Primary Energy|Fossil
47.30	1-fossil-fuel	1-fossil-fuel	fuel|fossil|oil|sale	Final Energy|Transportation|Liquids
49.10	5-transportation	5-transportation|railways	transportation|infrastructure|land|railways|fossil	Energy Service|Transportation|Passenger|Railways
49.10	5-transportation	5-transportation|railways	transportation|infrastructure|land|railways|electric	Energy Service|Transportation|Passenger|Railways
49.20	5-transportation	5-transportation|railways	transportation|infrastructure|land|railways|fossil	Energy Service|Transportation|Freight|Railways
49.20	5-transportation	5-transportation|railways	transportation|infrastructure|land|railways|electric	Energy Service|Transportation|Freight|Railways

Source: Battiston ea 2022

An enhanced measure of greenness

- We developed an **enhanced measure of greenness** to account for limitations of GHG emissions and ESG scores:

  - Climate Policy Relevant Sectors: energy technology profile disclosed by **CPRS-Granular**

  - **Renewable energy capacity** (utility, source: BNEF and proprietary database of company reported data)

  - **Green CAPEX** (utility, source: BNEF and Refinitiv)

- **Application to the ECB's corp. bonds portfolio:** algorithm to perform the climate portfolio rebalancing **shifting weights** from bonds that are more exposed to transition risk to bonds less exposed to

- Our greenness measure can **reduce climate transition risk** in ECB's portfolio (top figure) while limiting market impact (average close to zero, but can be larger for individual securities)
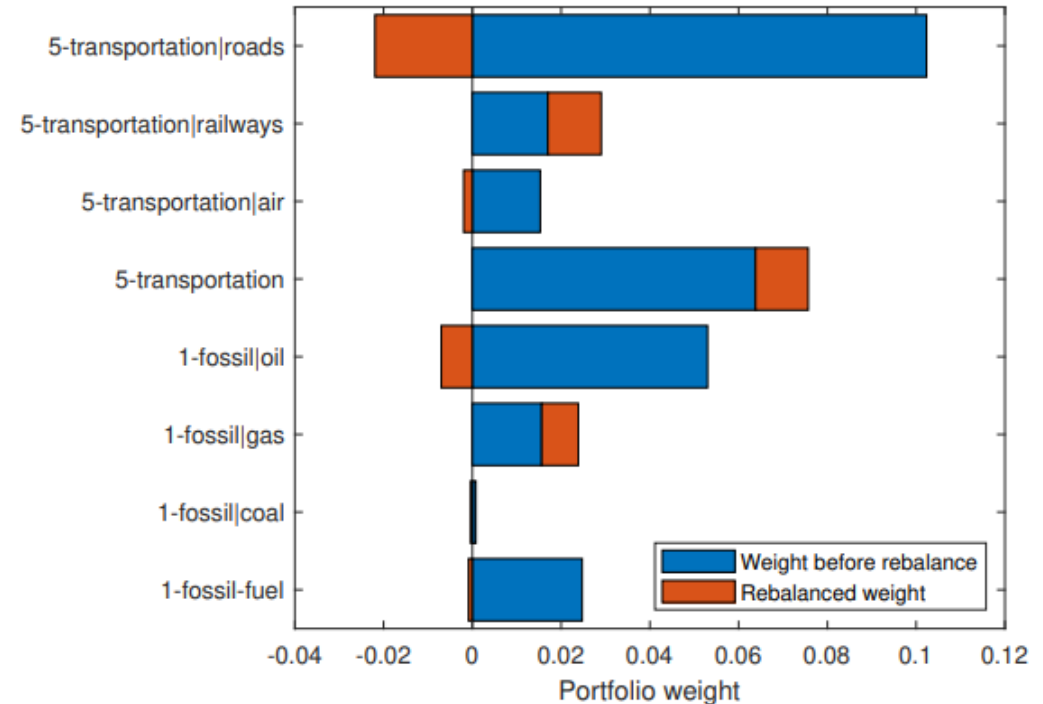

Figure 2: Changes in portfolio weights within fossil and transportation sectors as a consequence of the rebalance. Source: Bressan ea 2022.

References

Battiston, S., Monasterolo, I., van Ruijven, B., Krey, V. (2022). Mapping economic activities into climate scenarios and transition risk classes: the NACE-CPRS-IAM classification Technical report to the NGFS 2022 scenario report.

Bressan, G., Monasterolo, I, Battiston, S. (2022). Sustainable investing and climate transition risk: a portfolio rebalancing approach. Forthcoming, Journal of Portfolio Management.

Monasterolo, I. (2020). Embedding finance in the macroeconomics of climate change: research challenges and opportunities ahead. *CESIfo Forum*, 4/2020, p.25-33.