Climate change and monetary policy

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Climate change posing physical and transition risks, depending on policy action

Climate risk scenarios: projections of carbon emissions and global warming

(emissions of CO_2 in gigatonnes per year)

Warming projected by 2100

Baseline
4.1 - 4.8°C

Current policies
2.8 - 3.2°C

Optimistic policies 2.8°C

Pledges & Targets
2.5 - 2.8°C

2°C consistent
1.6 - 1.7°C

1.5°C consistent
1.6 - 1.7°C

Physical risks

Transition risks
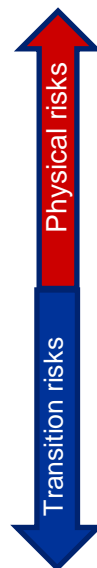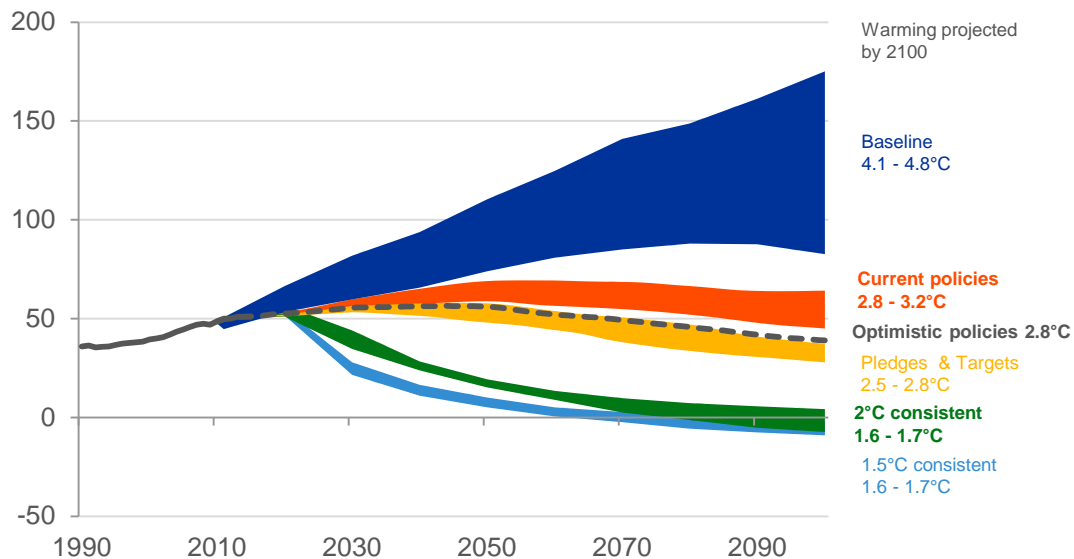
Note:

Baseline: In the absence of policies, global warming is expected to reach 4.1°C – 4.8°C above pre-industrial levels by the end of the century. The emissions that drive this warming are often called baseline scenarios.

Current policies in place around the world are projected to reduce baseline emissions and result in about 3°C warming above pre-industrial levels.

The **"optimistic policies"** scenario factors in additional as well as planned, but not yet implemented, policies and a continuation of recent developments.
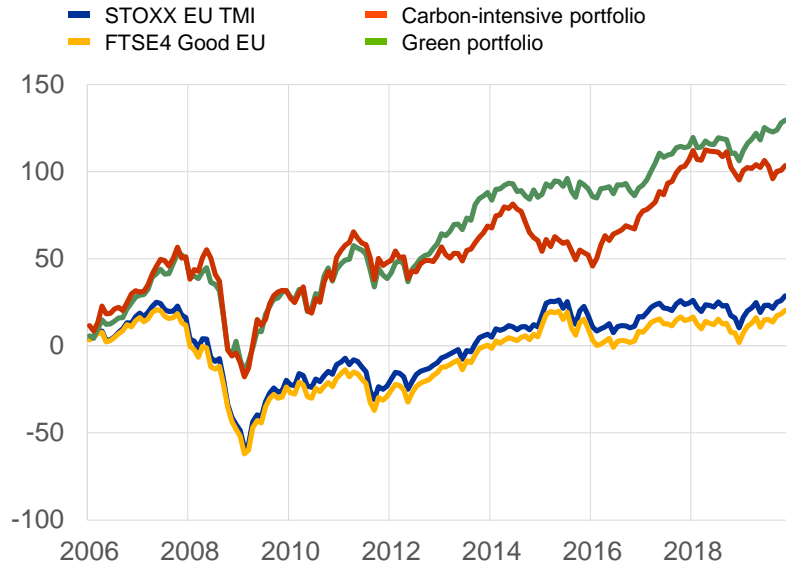
The **"2°C" consistent** benchmark pathways are drawn from the "lower-2°C" and "high-overshoot 1.5°C" pathways in the new set of IAM pathways assessed in IPCC in its latest report.

The central "**1.5°C compatible**" benchmark is defined as the median of pathways that limit global warming to 1.7°C, or below.

Source: Climate Action Tracker, Warming Projections Global Update. December 2019 projections.
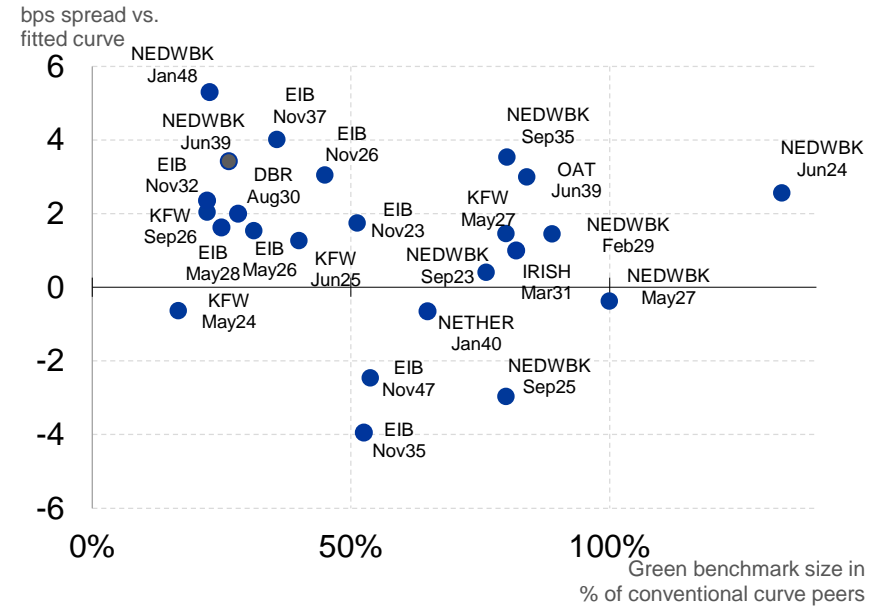
Climate risks remain mispriced

Monthly cumulative returns of selected stock indices and portfolios (percent)

- STOXX EU TMI
- FTSE4 Good EU
- Carbon-intensive portfolio
- Green portfolio

150
100
50
0
-50
-100

2006 2008 2010 2012 2014 2016 2018

## Green benchmark outstanding volume in % of size of two direct curve peers (x-axis) vs. yield premium/discount in bps (y-axis)

bps spread vs. fitted curve

6
4
2
0
-2
-4
-6

0%   50%   100%

NEDWBK Jan48
NEDWBK Jun39
EIB Nov37
EIB Nov26
NEDWBK Sep35
NEDWBK Jun24
EIB Nov32
DBR Aug30
OAT Jun39
KFW Sep26
KFW May27
NEDWBK Feb29
EIB May28
EIB May26
EIB Nov23
NEDWBK Sep23
IRISH Mar31
NEDWBK May27
KFW Jun25
KFW May24
NETHER Jan40
EIB Nov47
NEDWBK Sep25
EIB Nov35

Green benchmark size in % of conventional curve peers

Source: Commerzbank Research

Lack of common environmental standards slowing growth of green bond universe

Financial market pricing of climate risks: correlations of bank environmental scores
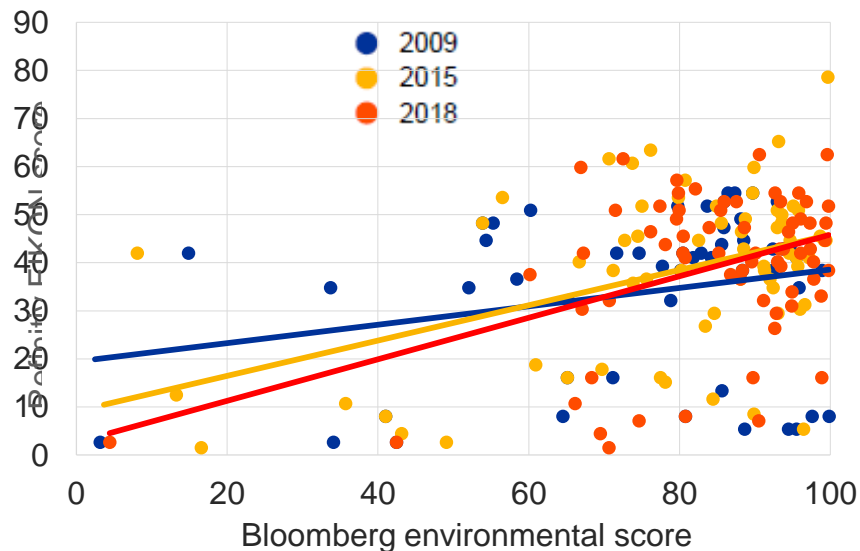
Source: ECB Financial Stability Review, November 2019 based on Bloomberg, Refinitiv EIKON, S&P Global Market Intelligence and Dealogic. Notes: The Bloomberg and Refinitiv environmental scores give values between 0 and 100, whereby a higher value indicates a better performance in terms of environmental variables. The full unbalanced sample consists of 49 banks and 23 insurers in the EU and the United States.

Share of IG green bonds in global gross issuance
(in %, based on EUR data)
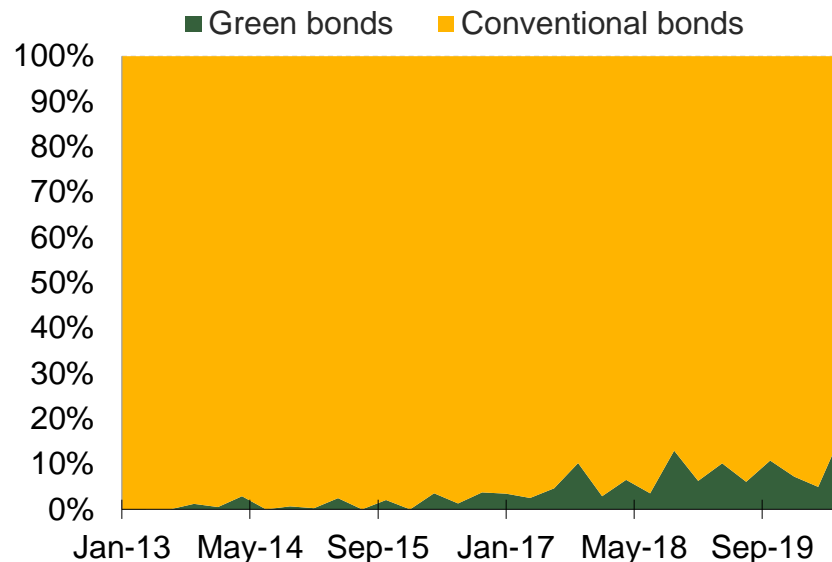
Source: Dealogic. Note: Quarterly data.
Last observation: September 2020.

Thank you for your attention!