“Embedding Sustainability in Credit Risk Assessment”

Section 5

«Banks Climate Risk Exposure»

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PS: The opinions in this presentation are mine and do not reflect the views of the Banca d’Italia

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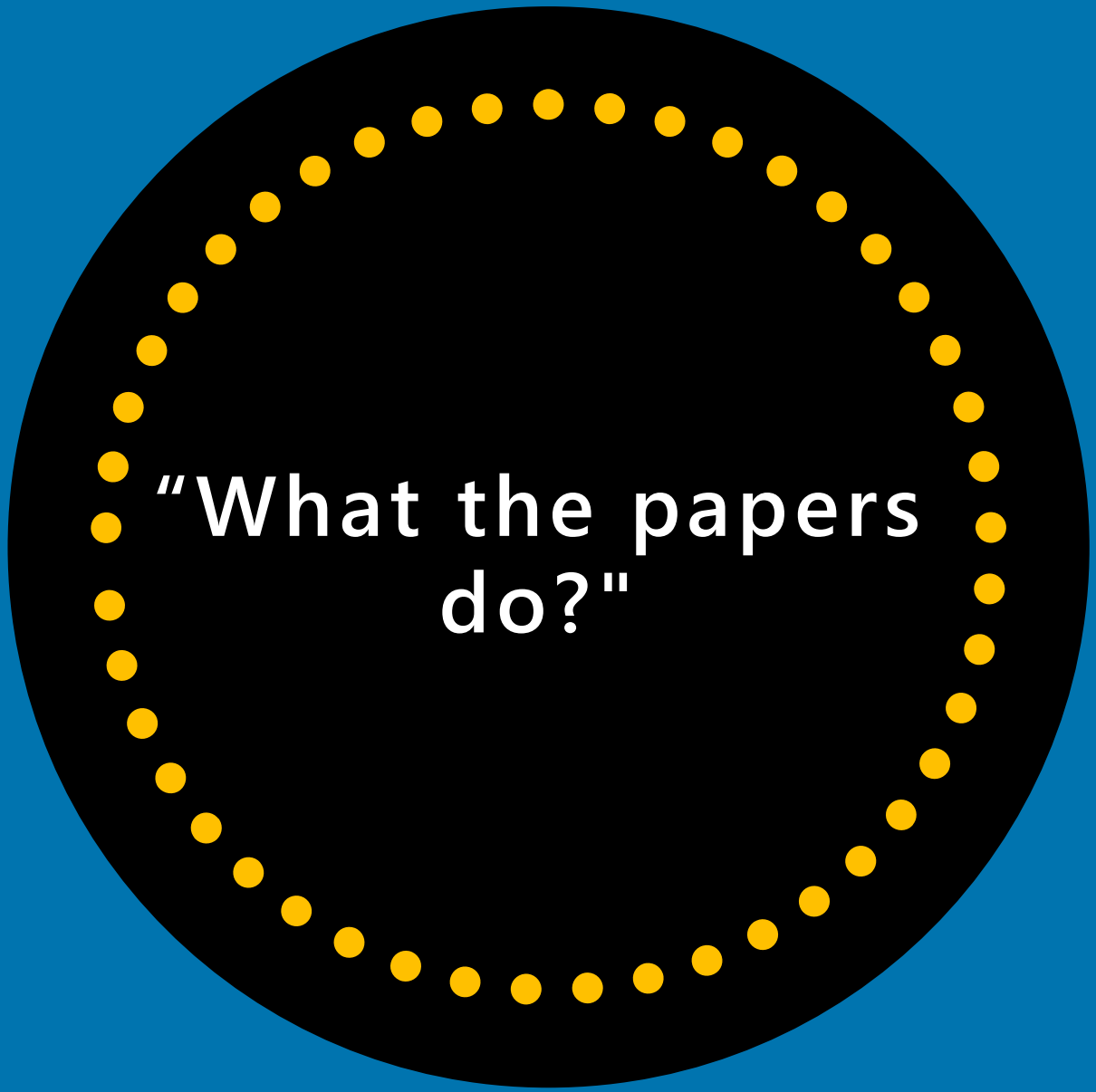
OUTLINE

1. "What the papers do?"
2. “How do they do it?"
3. “What the papers find?"
4. “Comments"
5. “Conclusions"


“What the papers do?"

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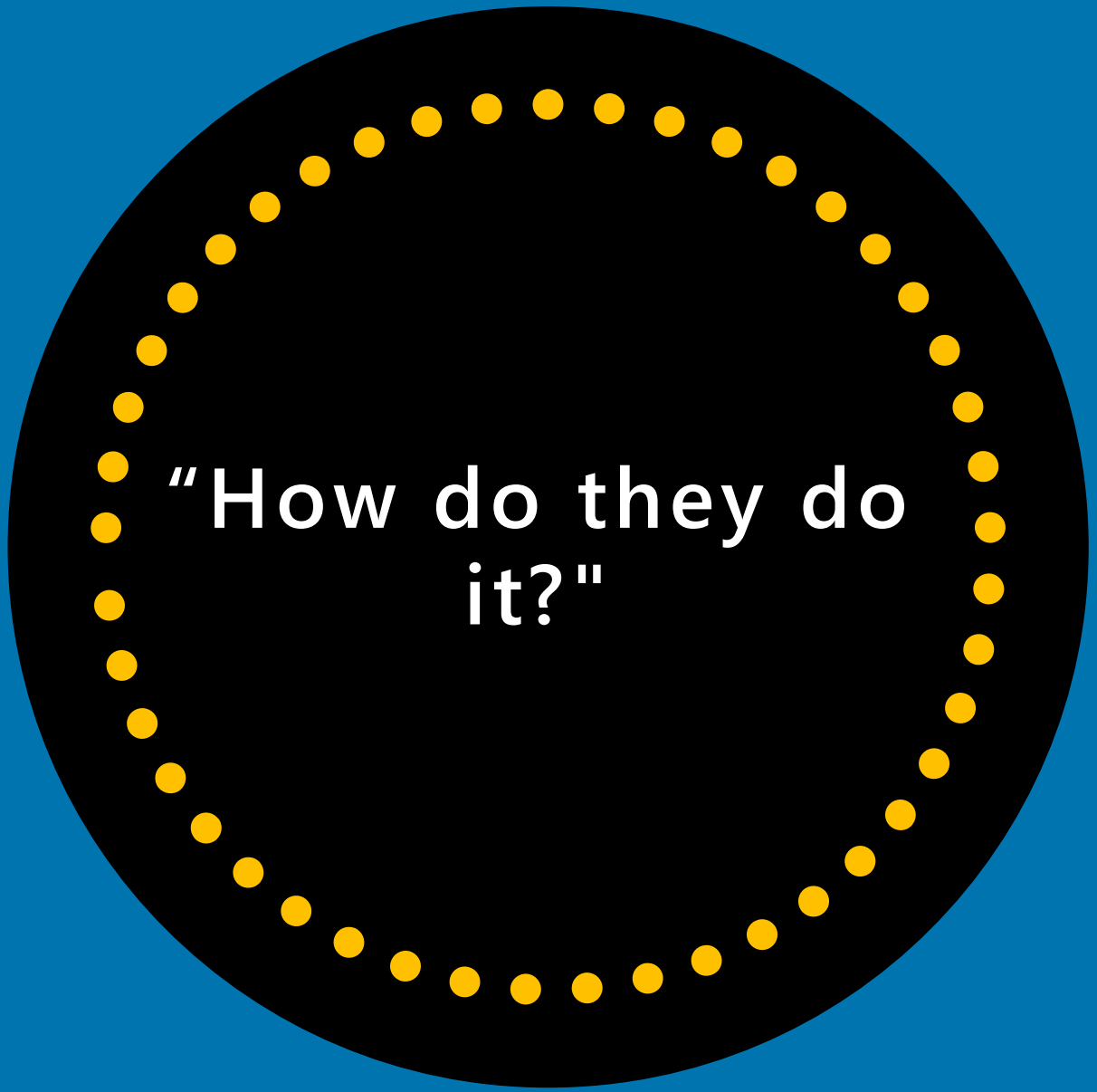
"Climate Risk, Bank Lending and Monetary Policy" C. Altavilla| M. Boucinha | M. Pagano |A. Polo, Oct. 2023	***" Glossy Green Banks: The Disconnect Between Environmental Disclosures and Lending Activities"*** Giannetti et al,Nov. 2023	***"U.S. Banks' Exposures to Climate Transition Risks "*** H. Jung | J.A. C. Santos | L. Seltzer, Jan 2024
Do banks price climate risk in their lending policies? Does monetary policy affect banks' pricing of climate risk? Extension of risk taking channel of monetary policy	Do Glossy Green banks engage in transition lending? P.S: Glossy Green banks are banks with extensive environmental disclosures	How much the impact of transition policies on U.S. banks is? Have U.S. banks started to adjust their lending policies in response to them joining the Net-Zero Banking Alliance?


“How do they do it?"

How do they do it?"

	1. Climate Risk, Bank Lending and Monetary Policy	The Disconnect Between Environmental Disclosures and Lending Activities	3. U.S. Banks' Exposures to - Climate Transition Risks
Sample of banks	Euro Area banks	Euro Area banks	US large banks
Sample period	2018 - 2022	2014 -2020*	2012 - 2023
Target variable	**Lending prices** and volume (in responce to a 25 bp monetary policy shock)	**Lending volume**	**Banks exposures** (percentage decrease in a bank's loan portfolio under alternative assumptions)
Data	Loan level data (AnaCredit) combined with GHG emissions data (Refinitiv) of listed firms	Loan level data (AnaCredit) combined with banks disclosure data (textual analysis) and firm level GHG emissions (Urgentem) and industry (NACE 2) level (Eurostat)	Loan level data (FED) combined with forward looking industry level sensitivities to climate policies; Trucost carbon emission data
Climate metrics	Firm-level intensity ratio of Scope 1 and 2 GHG emissions (Refinitiv); high emitters (90th percentile); dummy variables (Target = firms' reduction targets; Commit=banks joining SBTi)	Firm-level intensity ratio of Scope 1 and 2 GHG emissions (Urgentem); dummy variables (Brown = a firm belonging to a NACE 2 industry with emission intensity in the top quintile of all industries; high environmetal reporter = bank disclosure ranking in the top quintile of the variable distribution)	General equilibrium sectoral estimates of transition policies and scenarios; highly-exposed industries (top decile or top two deciles of the industries most affected by the policy); Banks signing of Net-Zero Banking Alliance;
Empirical strategy	Panel regressions controlling for firms' and banks' characteristics and industry-location-size fixed effects	Panel regressions controlling for bank time varying characteristics	Regression analyses (controlling for bank size, capitalization, geographic location, and macroeconomic conditions) and scenario analysis
Estimated impact	4 bp (premium for high emmitters); 7 bp for 1000 tonnes emissions per million dollar of revenue; 10 bp (discount for committed firms)	High environmental reporters extend 3.6% more credit to firms in brown industries compared to other banks	Banks risk exposures are generally modest, and no higher than 16% relative to current loan balances even in the most severe scenario.

(*) Extension of Anacredit with loans issued post 2014


“What the papers find?"

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Euro-area banks charge higher interest rates to high-emission firms and lower rates to firms with reduction targets (in line with survey evidence). 	Banks classified as high environmental reporters grant more credit to borrowers in brown industries, especially small borrowers 	Banks that signed the Net-Zero Alliance have reduced loan volume and increased loan price to borrowers in highly exposed industries to 
Monetary policy affects lending to firms not only via a credit risk-taking channel but also via a climate risk-taking channel. 	While less likely to establish new relationships with brown borrowers, they are reluctant to terminate existing credit relationships with zombie brown borrowers 	U.S. banks do not appear to have large exposures to transition risks (p.s. finance emissions explain only 60% of bank exposures) 


“Comments"

"Comments"

1

- ✓ **Altavilla et al (2023) make a significant contribution** in understanding the potential for financial institutions and monetary policy to influence the transition

  Evidence on lending is far less clear-cut than that regarding bond and stock markets (Beyene et al. 2021, Ehlers et al. 2022, Degryse et al. 2021).

- ✓ Interestingly, they found banks differentiate their lending rates also based on their clients' prospective carbon emissions, not just their current ones

  Overall, the estimated impact on loan spreads is in line with existing literature (see Figure1 in the BIS Working Paper No. 40, 2023)

- ✓ Evidence of a 'climate risk-taking channel' is even less explored**:** monetary tightening constrains lending conditions relatively less for green firms.
- ✓ But, how can we reconcile the findings on loans spreads of the this paper with the findings on lending volume in Giannetti et al?

  Is it a matter of definitions? Specifications? Time horizon?

"Comments
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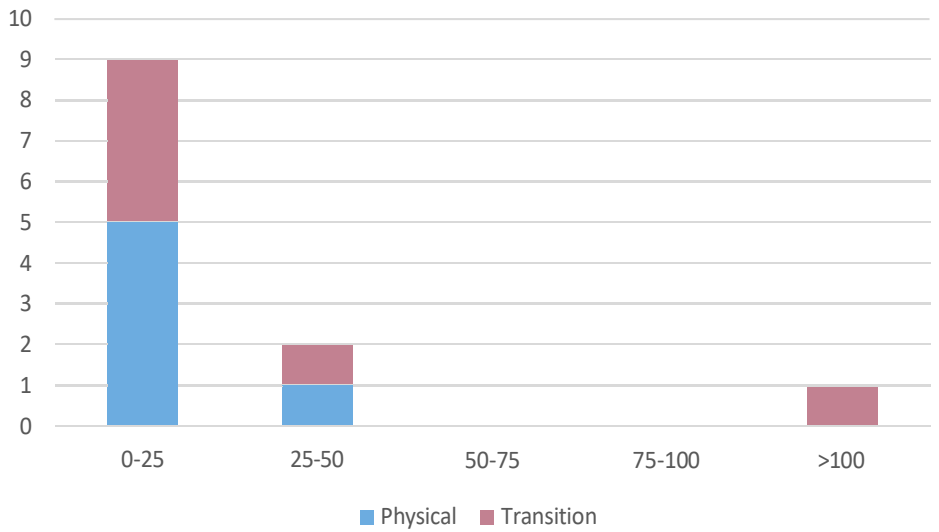
1

Impact of climate change on **loan spreads**

12 entries

Figure 1



Source: BIS working paper No. 40: *"The effects of climate change-related risks on banks: a literature review"* (December 2023). Authors' calculations, based on the review of 12 estimates provided by the academic literature, number of studies (vertical axis) providing an estimate of yield spreads of bank loans, in basis points (horizontal axis). Impact is usually measured as the response to a one standard deviation on climate change exposure. The articles displayed here are: Beyene et al. (2022); Chava (2014); Correa et al (2023); Degryse et al (2023); Delis et al. (2021); Do et al. (2021); Ehlers et al. (2022); Garbarino and Guin (2021); Huang et al (2021); Javadi and Masum (2021); Kleimeier and Viehs (2018); Nguyen et al. (2022). The studies investigating shocks in terms of physical risk are depicted in blue, transition risk in red. The reference above 100 bp is Huang et al. (2021).

"Comments"

2

- ✓ **Giannetti et al (2024) add a new perspective to existing literature**, which instead points to a reduction of lending to brown borrowers (with very few exceptions)

  Committed banks seem prioritizing relationships with existing borrowers, especially when they exhibit financial underperformance. Low-capitalized committed banks more likely to engage in this behavior.

- ✓ Findings would have **important policy implications for disclosure and greenwashing**, whose common high-level understanding and monitoring is rapidly increasing

  However, the authors fail to account that main challenges for banks relate to the ability to access adequate climate data about their customers, especially SMEs, since disclosure requirements only apply to listed or large companies (Banca d'Italia Occasional Papers No. 744, 2022).

- ✓ But again, how can we reconcile these findings with those in Altavilla et al?

  Delis et al. (2023) for instance find that fossil fuel firms obtain larger loans compared to non-fossil fuel firms and higher loan pricing to fossil fuel firms by "green banks" supporting the view that the fossil fuel industry has lost some access to equity finance, leading to larger borrowing by these firms

"Comments
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3

ang et al (2024) has the merit to acknowledge limitations of carbon emission data to adequately measure banks climate risk exposure

Granular data on energy consumption would be a simpler alternative (Banca d'Italia Occasional Papers, No. 732, 2022) Otherwise an attribution framework for carbon emission data would be needed. MSCI 2023.

- ✓ However, the approach based on general equilibrium sensitivities to climate change policies is not without limitations *(model risk, simplified assumptions, static approach, industry-level estimates, scenarios*)

  NGFS scenarios are also far from being perfect (Banca d'Italia Occasional Papers, No. 847, 2024)

- ✓ As a consequence, the magnitude of the impact could be underestimated in some important dimensions

  In the literature it's still unclear whether the risk is effectively small and manageable, or whether it is mispriced, which would make it a source of concern for both regulators and supervisors (BIS WP No. 40 December 2023)


“Conclusions”

Conclusions

- ✓ Climate policies stand out by their **cross-sectoral nature**. They involve a number of policy dimensions tied to broader political economy and regulatory landscape**,** that are difficult to measure and control for
- ✓ The three papers offer **useful insights on lending behavior**, which is relatively more opaque and less explored
- ✓ Apart from a few outliers, in the empirical literature **the impact of climate change is found to be relatively small**
- ✓ However, **analytical issues**, in terms of data granularity (e.g. on energy consumption) and coverage (e.g. SME) well as methodological issues (e.g. static approach) prevent a definite assessment of the risks
- ✓ Some authors argue that the overall balance is more in the direction of an **underestimation of the risks** rather than a situation where the risks are likely to be fully measured and managed, which would make it a source of concern for both regulators and supervisors.


Thank you!