

# BANK DIVESTMENT AND GREEN INNOVATION -ZHEN YE

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### Summary

- **Objective:** Examine the impact of banks commitment to sustainability on borrowing firms' green innovation.
- Method: Analyze the effect of reduced credit to firms with high carbon emissions (brown firms).
- Source of negative credit shocks: Banks' commitments to carbon neutrality through the Science Based Targets Initiative (SBTi).
- Findings for brown firms: Reduction in credit leads to fewer green patents filed.
- Findings for non-brown firms: Increased filing of green patents after banks' commitments.
- Quality and value of green patents: Decline observed for both brown and non-brown firms.
- Unintended consequence: Bank divestment from brown firms reduces high-quality green innovation.



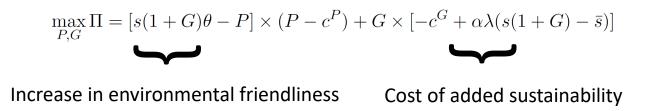
# Strengths of the paper

- The paper addresses an important and timely topic of how bank divestment affects green innovation,
- The paper uses a novel identification strategy based on banks' staggered commitments to SBTi
- The paper constructs a rich dataset of green innovations by U.S. public firms, using a measure of a
  patent's relevance to address climate challenges based on text algorithms.
- The paper provides evidence for various channels and mechanisms behind the main results, such as financial constraints, credit reallocation, inventor mobility, patent value, originality, generality, and relevance.



# Comments (1)

• Modelling the banking sector more explicitly would help undrstand the results:



#### • α : bank's taste for sustainability



### Comments (2)

- Identification: results rely on the "commitment" to be exogenous
- Is it possible that firms cease they relationship with the "committed" banks and start a lending relationship with a "non-committed" bank?
- Most of the banks seems to be foreign (non-US) banks, how important are they in the overall portfolio of the firms



### Comments (3)

• There are 2 dimensions of sustainability:

Innovation (green vs non- green patents), technology (brown vs non-brown firms)

- What is the interplay between technology and innovation?
- Would the banks commitment have an effect on the firms' carbon emissions?



### **Other comments**

- $Y_{it} = exp[\gamma_i + \delta_t + \beta \text{Committed}_{it} + \text{Controls}_{it} + \epsilon_{it}]$ , Should be  $E[Y_{it} | X_{it}] = exp(...)$
- The Poisson model can be used even if the outcome isn't a count variable (see Wooldridge)
- The Generality and originality measures are biased downward because they are constructed from shares based on count data where the number of counts is small. Hall suggests a correction: <u>https://eml.berkeley.edu/~bhhall/papers/BHH05\_hhibias.pdf</u>
- It would be interesting to see the results for incumbent firms and entrants!
- In most regressions R&D is negatively related to patents. That is an odd result

