

# Being Stranded on the Carbon Bubble?

## Climate Policy Risk and the Pricing of Bank Loans

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### A CARBON BUBBLE?

#### Carbon bubble

«A hypothesized the overvaluation of fossil fuel reserves and related assets due to neglecting the possibility of those assets becoming unusable or “unburnable”»

(First appeared in Le Page 2011 and Carbon Tracker Initiative 2011)

- Limiting global warming to 2°C compared to pre-industrial levels will leave the **majority of fossil fuel reserves as stranded assets.** (McGlade and Ekins 2015; Carbon Tracker Initiative 2011, 2013)

- Nevertheless, listed oil, gas, and coal companies still largely invest into locating and developing new fossil fuel reserves.

(Carbon Tracker Initiative 2013)

➤ **Financial markets might neglect the risk of stranded fossil fuel reserves**

### WHAT WE DO

First empirical study on the **pricing** of the **risk of stranded fossil fuel reserves** in the **corporate loan market**

➤ *Do banks price-in the risk that fossil fuel reserves will become stranded?*

We compare:

The cost of credit of fossil fuel firms

- to the cost of credit of non-fossil fuel firms
- and based on their firm-specific climate policy exposure

$$CL_{lbf_t} = a + a_1 FossilFuel_{ft} + a_2 Climate\ policy\ exposure_{ft} + a_3 FossilFuel_{ft} \times Climate\ policy\ exposure_{ft} + a_4 L_{lt} + a_5 F_{ft} + u_{lbf_t}$$

### MAIN FINDINGS

**Pre Paris 2015 Climate Accord:** banks did **not** price-in the risk of stranded fossil fuel reserves when originating loans

**Post Paris 2015 Climate Accord :** the risk is **priced**, especially for firms holding more fossil fuel reserves

➤ **Salient evidence that banks start pricing the risk of stranded fossil fuel reserves post-2015**

### POLICY TAKEAWAYS

A commitment to climate targets can alter market participants perception of climate risks

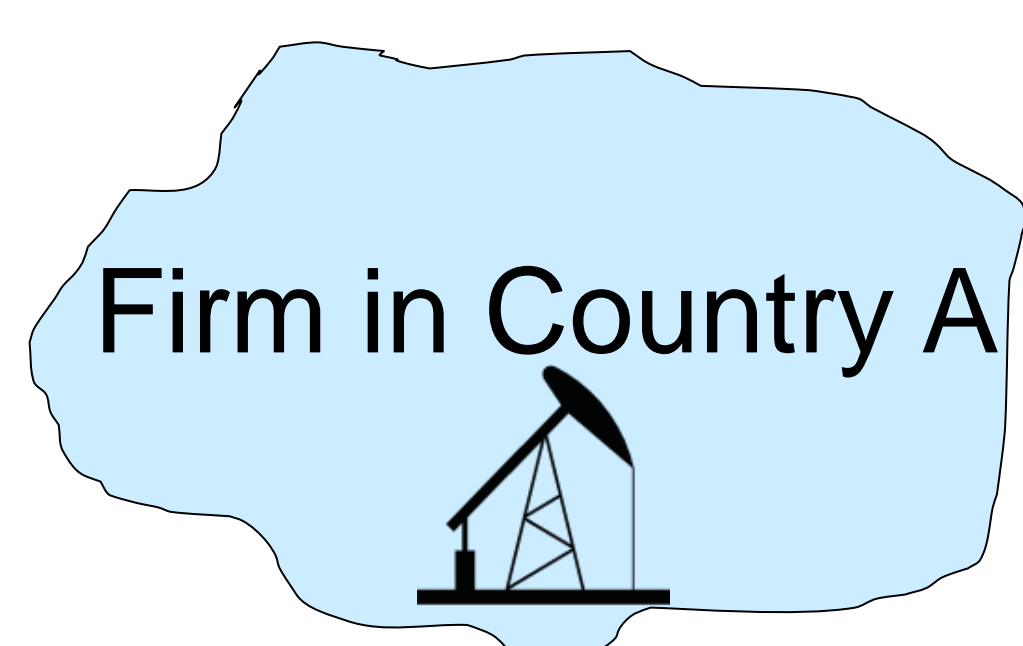
⇒ Climate risks are started to be priced

➤ **Open question: Are the risks assessed and priced adequately?**

### MEASURING THE RISK OF STRANDED FOSSIL FUEL RESERVES

We proxy the **risk of stranded fossil fuel reserves** by the **stringency** of a country's **climate policy**:

↑ climate policy stringency ⇒ risk of stranded assets ↑



Firm in Country A

vs.



Firm in Country B

**Actively** implementing climate policies



**Less actively** implementing climate policies



Eventually:



**HIGHER** risk of stranded fossil fuel reserves

**LOWER** risk of stranded fossil fuel reserves

### DATA

- Location of **fossil fuel reserves**

➤ *hand-collected* firm-year data on the fossil fuel reserves of firms across countries

- Measure of **climate policy stringency**

➤ country-year climate policy indices:

Climate Change Cooperation Index

(Bernauer and Böhmelt (2013))

Climate Change Performance Index

(Germanwatch (Burck, Hermwille, and Bals 2016))

- Global **corporate loan data**

➤ global syndicated loan data