

Fuelling fossil fuel: bond to bank substitution in the transition to a low-carbon economy

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A discussion

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The paper

- Pricing of Stranded Asset risk (SA risk) of fossil fuel (FF) firms by banks and corporate bond market (2007-2018).
- Stronger evidence of SA risk being priced by the corporate bond market than by banks.
- Banks with large existing exposures to FF sector are more likely to offer favourable pricing of SA risks to FF firms.
- FF firms substitute from bonds to loans as their SA risk exposures increase.

Valuable contribution: literature on the impact of SA risk on firms' funding cost is still very limited (e.g. Atamasova & Schwartz 2019).

Stranded asset risk measure 1

- Climate Policy Exposure (CCPI): Index based on firms' FF reserves weighted by the Climate Change Performance Index of the country where the reserves are located.
- What about policies of importing countries?
- SA risk also depends on the extraction cost and the type of fossil fuels.

Coal is most at risk of ‘stranding’

Table 1 | Regional distribution of reserves unburnable before 2050 for the 2 °C scenarios with and without CCS

Country or region	2 °C with CCS						2 °C without CCS					
	Oil		Gas		Coal		Oil		Gas		Coal	
	Billions of barrels	%	Trillions of cubic metres	%	Gt	%	Billions of barrels	%	Trillions of cubic metres	%	Gt	%
Africa	23	21%	4.4	33%	28	85%	28	26%	4.4	34%	30	90%
Canada	39	74%	0.3	24%	5.0	75%	40	75%	0.3	24%	5.4	82%
China and India	9	25%	2.9	63%	180	66%	9	25%	2.5	53%	207	77%
FSU	27	18%	31	50%	203	94%	28	19%	36	59%	209	97%
CSA	58	39%	4.8	53%	8	51%	63	42%	5.0	56%	11	73%
Europe	5.0	20%	0.6	11%	65	78%	5.3	21%	0.3	6%	74	89%
Middle East	263	38%	46	61%	3.4	99%	264	38%	47	61%	3.4	99%
OECD Pacific	2.1	37%	2.2	56%	83	93%	2.7	46%	2.0	51%	85	95%
ODA	2.0	9%	2.2	24%	10	34%	2.8	12%	2.1	22%	17	60%
United States of America	2.8	6%	0.3	4%	235	92%	4.6	9%	0.5	6%	245	95%
Global	431	33%	95	49%	819	82%	449	35%	100	52%	887	88%

FSU, the former Soviet Union countries; CSA, Central and South America; ODA, Other developing Asian countries; OECD, the Organisation for Economic Co-operation and Development. A barrel of oil is 0.159 m³; %, Reserves unburnable before 2050 as a percentage of current reserves.

Source: McGlade and Etkins (2015).

Stranded asset risk measure 2

- Herfindahl-Hirschmann Index (HHI) trend: Index based on firms' FF reserves weighted by 3-year change in HHI of the energy sector based on the share of fossil fuels vs renewables in a country's primary energy supply.
- Why HHI and not simple % share of fossil fuels? Does concentration matter?
- Why not include other energy sources (e.g. nuclear) in constructing this index?

Bank vs bond finance

- Theoretical literature: bank finance subject to more monitoring and screening.
- So why did the authors find that bond market pricing is more sensitive to SA risk than bank loans?
 - Are banks using better/more granular measures of SA risk?
 - Due to short maturity of bank loans? Average maturity is much shorter for bank loans (5 years) than corporate bonds (10 years).
 - Because of collateral? 50% of loans are collateralised, while 6% of loans are secured.

The role of bank exposures to FF sector

- Not clear why banks with pre-existing exposures to FF sector would want to offer favourable pricing in lending to firms in the same sector.
- ‘Evergreening’ incentives could exist at borrower level (e.g. Peek & Rosengren 2005) but not necessarily at sector level.
- Measure of exposure: total number of loans issued to FF sector over 5 years, divided by total loan issuance. Why use number rather than value?
- Banks may have securitised away their exposure, and may have also exposures through their bond holdings

Conclusions

- Very little is known about how banks and bond market price SA risks: so this is a very useful contribution.
- Worth exploring more granular measures of SA risks.
- Some of the findings do not square with the theoretical priors about the difference between bank lending and bond finance. So worth examining the roles of collateral, maturity and securitisation further.