Discussion of “Carbon Stock Devaluation”

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“Climate Change, Stock Prices, and Corporate Decisions”

- Do stock prices reflect climate uncertainty?
  - Do they reflect lower cash flows associated with unfavorable scenarios, e.g., Miami Beach and undeveloped shale properties
  - Do climate exposed equities have higher discount rates?
    - Climate is a source of systematic risk
    - Convenience yields associated with Green versus Brown investments
- Do stock price signals influence corporate behavior?
  - A comparison between public and private firms
  - May not be possible to distinguish between the price and persuasion channel

Anecdotes from the oil fields

- Methane is often emitted in the production of oil and gas
  - A significant contributor to climate change
  - Older fields tend to emit more
  - One can retrofit, at a cost, oil fields to substantially decrease emissions
- Methane emissions can be tracked and influence ESG ratings
  - Anecdotal evidence suggests that this does affect stock prices
    - Is this because of the convenience yield channel?
    - Or is it the risk of future regulation?
- How have public firms responded?
  - Many have made emission reduction investments
  - And they have sold some of their “dirty” fields to private firms

Different Approaches for Measuring Long term Market Responses

- The returns approach –
  - Have the green stocks outperformed as we experience greater interest in ESG investing?
    - Green stocks should outperform as the *convenience yield* channel kicks in, but then underperform, because their required rates of return are lower
    - Green stocks will outperform when the cash flow channel kicks in
    - Brown stocks may do poorly in a declining interest rate period
- The valuation approach
  - Do green stocks have higher values than brown stocks?
    - This will unambiguously give you the right answer if you have the appropriate benchmark, e.g., the replacement value of assets
    - May not be able to distinguish why the value is higher, e.g., cash flow versus discount rate channel

Focus is on the Valuation Approach

- I think the Valuation approach is “better,” but the “devil is in the details”
  - Need to understand what is causing book values to change over time
    - Are firms writing down the values of their coal fired power plants?
    - Cross-industry comparisons may be difficult to understand – what does it mean to compare Apple and Exxon price to book ratios over time?
  - The price to cash flow metric is less subject to accounting manipulation
    - However, firms have different cash flow ratios because they have either different discount rates or different growth rates
    - Can we separate out the effect of discount rate effects (e.g., the convenience yield effect) from growth effects (e.g., anticipated regulatory changes)?

Emission reductions and price gaps

- Firms in countries that have larger price gaps show greater future reductions in emissions
  - This is an important observation --- I would like to learn more
    - What are the countries with the largest gaps?
    - Are there large differences in the gap across countries?
    - How are we thinking about causation?
    - The comparison between public and private firms is quite interesting

Topics for discussion and further research

- What are the countries and regions where the price gap is the highest?
  - Do these differences relate more to the countries' political climates or to their industrial mix?
  - Given that ESG investing is much more popular in Europe, do we see stronger effects for European stocks?
- Are the effects stronger for certain industries or sectors?
  - I would find the results more convincing if we can identify sectors with substantial cross-sectional dispersion in "greenness"
- Is it possible to identify a few very salient events to illustrate the time series variation?
- The authors provide evidence that both retail and institutional investors are migrating towards greener stocks
  - We need to learn more about the other category that is buying the brown stocks