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Carbon Risk: An opportunity for abnormal returns?

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Introduction

This report has two main purposes. The first is to provide a brief outline of the current literature on carbon risk, and on whether it is priced in by financial markets. The second is to present the opportunities related to such carbon risk, as the divestments of many investors create sources of relatively easy profits for less environmentally concerned investors.

Do carbon emissions drive a risk premium?

The study by Bolton and Kacperczyk (2021) is probably the most relevant article on carbon risk published yet. The authors inquired into the relationship between stock returns, and respectively scope 1 emissions (direct, from production), scope 2 emissions (direct, from energy consumption) and scope 3 (indirect). They found positive relationships between stock prices and both total carbon emissions and carbon emissions growth, statistically and economically relevant. Furthermore, they demonstrated that such effects where not that of institutional investors (divestment) and that the observed returns where not explained by known risk factors. Thus, while this study alone is not sufficient to conclude the existence of a carbon risk in equity markets, Bolton and Kacperczyk made an important step in this research field and showed that carbon emissions may well be a risk factor that could already be essential to investors.

Ilhan, Saunter and Vilkov (2021) demonstrate a possible carbon risk by inquiring into the cost of option protection against potential downside tail risk. They notably found that such cost was larger for firms with high carbon emissions, with decupled effects when there is high public awareness around climate change related subjects. This study thus also seems to display an acknowledgement by equity markets of the existence of a carbon risk.

Andersson, Bolton and Samama (2016) present the relevance of carbon risks through the form of a hedging strategy against climate-related risks. Such a strategy relies on investments in decarbonized indexes. The authors mention that such indexes provide "free-option" carbon. Why? As they found that such decarbonized indexes perform as well as benchmark indexes not accounting for carbon risk, when this latter factor must be taken into consideration, the decarbonized indexes will outperform benchmark indexes, or in other words, provide returns adjusted to carbon risk rather than failing to account for such risks as benchmark indexes. Henceforth, while this latter article does not confirm the actual existence of a carbon risk per se, it demonstrates the need to protect against such risk, which will at some point expose itself, and that such protection is relatively easily accessible.

A last example of carbon risk studies is provided by De Haas and Popov (2019). They demonstrated that if a national financial market is more equity-based, there is on average lower per-capita carbon emissions in this country. This implies that equity markets tend to reallocated investments toward more carbon-efficient industries and sectors. There also appears to be a push by stock markets for green technologies. These results could be caused by two distinct, although not exclusive phenomenon. First, there is a strong attraction for greener companies and sectors, driven either by a sense of duty of by the desire to protect investors' reputation which leads to an over-interest in such companies, or equity-markets perceive a clear risk in carbon emissions and do not wish to expose themselves to such risks. The second part of this paper seems to suggest that there is at least an overreaction, even if a risk might be present.

It should nevertheless be noted that there is not a strict consensus around carbon risk yet. For instance, Görgen et al. (2020) did not found any evidence of a carbon risk premium. Their explanation for such absence is that either polluting firms and responsible firms have opposing behaviors hindering such premium, or that investors systematically under price cash flows.

Opportunities related to carbon risks

The most relevant sector of carbon emissions is obviously the energy sector, which is at the centre of climate consideration.

Current and Past Trends in Energy

Energy is the most polluting industry, being responsible for close to 30% of global CO2 emissions in 2021. As a result, large and retail investors have been trimming down their positions on energy for a few years.

In fact, energy was the worst performing sector of the previous decade.

It accounted for less than 2% of the S&P 500 in 2020 against 25% in 1980 and 15% more recently in 2010.

The current trend of energy, however, is different. In fact, energy became the best performing sector of the S&P 500 in 2021 and delivered a record 53.4% return against 28.7% for the broader index.

Devon Energy (DVN) and Marathon Oil (MRO) were the best performers of 2021 delivering a return of 196.1% and 149.7% respectively.

Factors that Pushed Energy and the Winners of 2021

Low valuations

Energy stocks were trading at very low prices because of a “polluting label” rather than financial results.

High dividend yields

Many oil and gas companies were paying very high dividends with firms such as ExxonMobil (XOM) and Chevron (CVX) having an 8.4% and 6.1% dividend yield, respectively.

Increases in oil and gas prices

Higher demand for energy related to the easing of lockdowns and the reopening of global economies as well as colder winters both in the US and in Europe, and lower supply from both OPEC and Russia drove the price increases. Wholesale gas prices increased by more than 400% in Europe and 99% in the US. Global oil prices increased by about 50%.The current war in Ukraine pushed oil prices past $100 a barrel.

Hedge Fund Winners

Not surprisingly, investors who owned positions in energy stocks or bought them at the beginning of 2021 profited from this situation. Bison Interests, a hedge fund who owned positions in Canadian and American oil and gas groups was up 377%. Odey Asset Management was up 100% before fees thanks to their positions in energy.

Overvaluation of Green Stocks

Large influxes of capital

Investors took their money out of polluting energy companies and started placing it in ESG investments including "green stocks".

Assets in sustainable investing hit a record of $3.9tn in the third quarter of 2021.

Overvaluations

The large influxes of capital led to overvaluations unseen since the dotcom bubble.

Tesla (TSLA) gained more than 2100% in the previous 5 years until November 2021 despite making a loss for every car it sells.

Rivian (RIVN) raised $12bn in its IPO in November and is currently worth around $58bn although it only produced about 1000 vehicles in 2021.

Current Situation

Inflation, market pessimism, higher interest rates and war in Ukraine caused many of these stocks lost a good portion of their value.

Profits being made

Some investors profited from this situation by short selling many of these overvalued "green stocks" with weak earnings who have been falling since the later months of 2021.

"In a bear market a company doesn't trade at 60 times earnings just because it does something morally good".

Barry Norris, CIO at Argonaut Capital

Conclusion

This paper leads to an interesting unanswered question. On the one hand, while not entirely proven, there appears to be some sort of carbon risk that is relevant in the pricing of assets, and that as such, polluting companies should provide higher returns. On the other hand, the outperformances observed in some polluting sectors seems to be to be driven by something more. By being perceived as entities at the service of ecological destruction, companies in polluting sectors are massively divested by institutional and retail investors, to a point where the observed abnormal returns are not justified. This also leads to an open door: By washing their hands of polluting companies, conscious investors could offer precious opportunities to less regardant investors.

References

Bary, A. (2020, October 30). Energy Stocks Now Account for Less Than 2% of the S&P 500. Barron's. https://www.barrons.com/articles/energy-stocks-now-account-for-less-than-2-of-the-s-p-500-51604074796

Bolton, P., & Kacperczyk, M. (2021). Do investors care about carbon risk? Journal of Financial Economics, 142(2), 517–549. https://doi.org/10.1016/j.jfineco.2021.05.008

De Haas, R., & Popov, A. A. (2019). Finance and Carbon Emissions. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.3459987

Domm, P. (2021, September 10). Natural gas prices are rising and could be the most expensive in 13 years this winter. CNBC. https://www.cnbc.com/2021/09/09/natural-gas-prices-are-rising-and-could-be-the-most-expensive-in-13-years-this-winter.html

Euronews. (2022, February 10). Why is there an energy crisis in Europe? https://www.euronews.com/2022/02/03/europe-s-energy-crisis-why-are-natural-gas-prices-soaring-and-how-will-it-affect-europeans

Fletcher, L. (2021, October 7). Hedge funds cash in as green investors dump energy stocks. Financial Times. https://www.ft.com/content/ed11c971-be02-47dc-875b-90762b35080e

Fletcher, L. (2022, January 26). Hedge fund short sellers take aim at green energy stocks. Financial Times. https://www.ft.com/content/05d218ea-982b-4e95-add1-26550316b2f0

Foelber, D. (2022, January 10). Energy Was the S&P 500's Best-Performing Sector in 2021. Can the Outperformance Continue? The Motley Fool. https://www.fool.com/investing/2022/01/10/energy-was-the-best-performing-stock-sector-2021/

Görgen, M., Nerlinger, M., & Wilkens, M. (2017). Carbon Risk. Working Paper, University of Augsburg. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.2930897

Ilhan, E., Sautner, Z., & Vilkov, G. (2020). Carbon Tail Risk. The Review of Financial Studies, 34(3), 1540–1571. https://doi.org/10.1093/rfs/hhaa071

Isidore, C. (2021, February 1). Tesla's dirty little secret: Its net profit doesn't come from selling cars. CNN. https://edition.cnn.com/2021/01/31/investing/tesla-profitability/index.html

Johnston, M. (2021, November 15). Rivian IPO: What Happened and Why it Matters. Investopedia. https://www.investopedia.com/rivian-ipo-what-happened-and-why-it-matters-5209505

Kirk, K. (2021, October 2). Investors flee Big Oil as portfolios get drilled. Yale Climate Connections. https://yaleclimateconnections.org/2021/01/investors-flee-big-oil-as-portfolios-get-drilled/

Klasa, A. (2022, February 15). Aviva Investors chief warns over rush into 'overpriced' green stocks. Financial Times. https://www.ft.com/content/21b134a7-67c0-44b3-ae37-3f3dd77b3d3c

Omondi, B. (2021, December 14). The Most Polluting Industries in 2022 . Eco Jungle. https://ecojungle.net/post/the-most-polluting-industries-in-2021/

Rosenbaum, E. (2020, April 25). Since 2000, here's where Dow, S&P 500 trade one month after wild moves in energy. CNBC. https://www.cnbc.com/2020/04/24/heres-where-dow-sp-trade-a-month-after-wild-moves-in-energy.html

Sharafedin, B. (2022, January 12). Oil rally to continue in 2022 as demand outstrips supply, analysts say. Reuters. https://www.reuters.com/business/energy/oil-prices-could-hit-100-demand-outstrips-supply-analysts-say-2022-01-12/

Taylor, C. (2022, January 5). Gas prices surge again in Europe, leaving some business owners "terrified" for the future. CNBC. https://www.cnbc.com/2022/01/05/european-energy-prices-are-surging-creating-frightening-uncertainty.html