October round-up: Climate economics

1 November 2022

Kevin Loane

Election for the future of the Amazon

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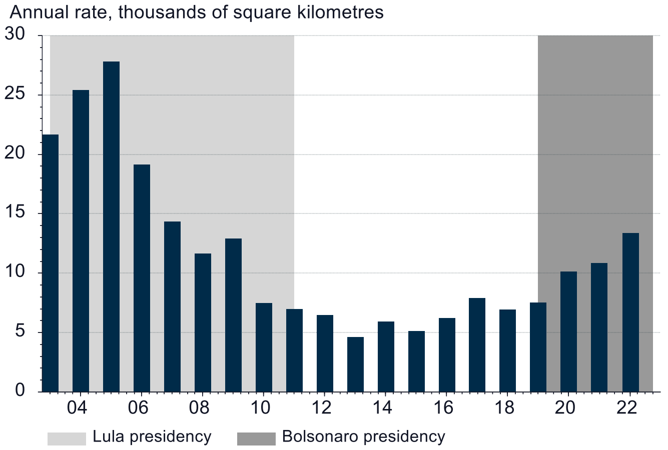
Election for the future of the Amazon (5 October 2022)

- The outcome of the runoff in Brazil's presidential election, to be held on 30 October, will have important implications for the Amazon rainforest and the amount of carbon emissions it absorbs and/or emits, and consequently for the speed at which the world continues to warm
- Amazon deforestation has steadily increased under President Jair Bolsonaro's rule since 2019, in contrast to the sharply decreasing trend during his presidential rival Luiz Inácio Lula da Silva's time in office from 2003-10

Amazon deforestation

Annual rate, thousands of square kilometres



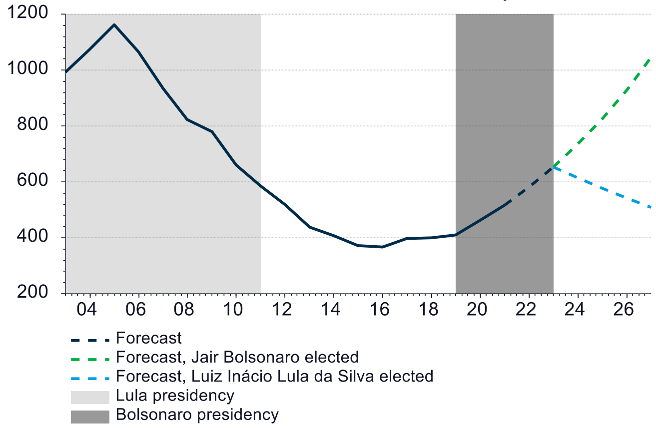
Source: Refinitiv Datastream / INPE / Fathom Consulting

- As president, Mr Bolsonaro cut funding for environmental protection, and pursued policies which promote mining and other exploitation of the Amazon
- Mr Bolsonaro has indicated that such policies are set to continue should he win the runoff; Mr Lula, meanwhile, has pledged to reverse them and reduce deforestation

- According to data from Brazil's spatial research institute, CO_2 emissions from Amazon deforestation were reduced by an average of 6% per year during Mr Lula's presidency compared to an average annual rise of 12% during Mr Bolsonaro's first two years in office[1]
- If those trends were to continue, we estimate that the emissions difference between a Bolsonaro and a Lula presidency, from Amazon deforestation alone, would amount to approximately 1.3 gigatons of CO_2 – between three and four times as much as the UK emits annually

Carbon emissions from Amazon deforestation

Millions of metric tonnes of carbon dioxide emitted annually



Source: Refinitiv Datastream / INPE / Fathom Consulting

1. The emissions generated from deforestation depend on whether the forest is cut or burned.

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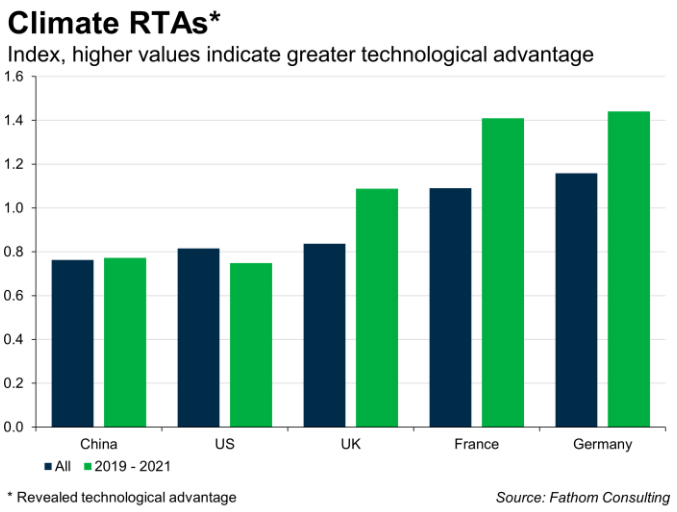
Europe's growing specialisation in climate tech (12 October 2022)

- Europe has a relative specialisation in climate technology compared to the US and China, according to preliminary findings from a new dataset under construction by Fathom[2]



- The metrics we have created to arrive at a country's comparative advantage in climate technology (which we call its revealed technological advantage in climate, or its climate RTA) compares the ratio of a country's climate-related patent filings to total patent filings, against the global average of the same[3]

- The blue bars show climate RTAs using data since 1978, while the green bars use data from the last three years only; a figure above one indicates that a country has a relative specialism in developing climate technologies (insofar as their filings of climate and other patents reflect this)

- Overall, the climate RTAs are lower than one in the US, China and the UK, pointing to a less-than-average focus on climate technologies in these countries; the climate RTAs are above one in Germany and France, illustrating the opposite

- Using more recent data only, we see that there has been little change in the US or China, but an increasing focus on climate change technologies in the UK, Germany and France, relative to others

- In absolute terms, the US files more climate patents than China or individual European countries, and is a leader due to the size and sophistication of its economy – but it is less specialised in this area

2. We have not yet run this analysis for all European countries or the European Union as a whole, but this finding is true in Germany, France, Italy and the UK – the four largest economies in Europe.
3. This is the same concept as the revealed comparative advantage (RCA) which uses trade flows to reflect relative specialisation.

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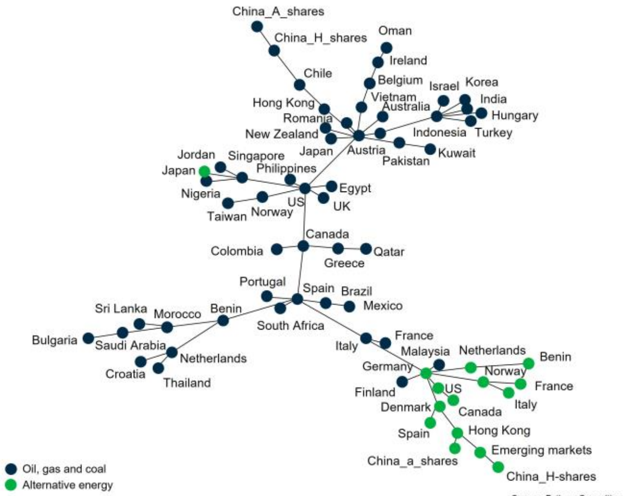
Energy stocks: brothers from different mothers (19 October 2022)

- Alternative energy stocks behave quite differently from most traditional energy stocks, but very similarly to one another, almost irrespective of which country they belong to, according to new analysis from Fathom Consulting
- We used a minimum spanning tree algorithm (MST) to map the similarities between country indices investing in stocks in both sectors: nodes that are close to each other can be interpreted as being more closely related in terms of price movements, while nodes that are more central in the map or have a lot of connections are the most pivotal
- The differences in behaviour between the two energy types are clearly evident from how alternative energy country indices cluster together at the bottom of the chart, while the traditional and the alternative Chinese indices are as far apart on the map as they can possibly be
- It also emerges that the US and Canada are crucial, central nodes in the overall network of energy price dynamics
- Traditional energy stocks in Italy, France, Spain and Finland are the closest to the renewable energy group, with Germany the key node holding the two sides of the energy family together; running the same analysis on stock level data confirms this result
- This finding ties in closely with other Fathom work suggesting that Europe has a revealed comparative advantage over other countries in the green transition
- This type of analysis can provide valuable insights into how the green transition in energy may evolve. We would expect the price dynamics in both sectors to become progressively less dissimilar as more traditional energy stocks continue to diversify into greener energy sources

Mapping similarities in energy indices
Price returns



Source: Fathom Consulting

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A green equity strategy with LEGS (26 October 2022)

- If you are looking for a good return in green equity investing, you are unlikely to find it with a company that is in the media spotlight for its good deeds, as its attributes should theoretically already be priced in and perhaps even overpriced
- Targeting 'green' companies with comparatively low media coverage can deliver gains that are both higher and have better risk characteristics (in terms of the Sharpe ratio), than the most robust equity sectors for 2020/21, namely, the energy and energy-related indices
- For example, an equity strategy that exploits Permutable.ai's latest Green Energy Trend report to identify and then 'buy' the green energy leaders that had low media coverage while 'selling' the green energy leaders that had high media coverage (LEGS – Low-minus-high Exposure Green Strategy) returns almost 19% since October 2021[4]
- This comes through the positive risk-adjusted returns of relatively hidden green gems against the underperformance of hyped green stocks (Sharpe ratios of 4% and -1.8%, respectively)
- The closest competitor to LEGS was the MSCI energy index, though its end-of-period cumulative return was 14% lower, with a Sharpe ratio of 3.2%

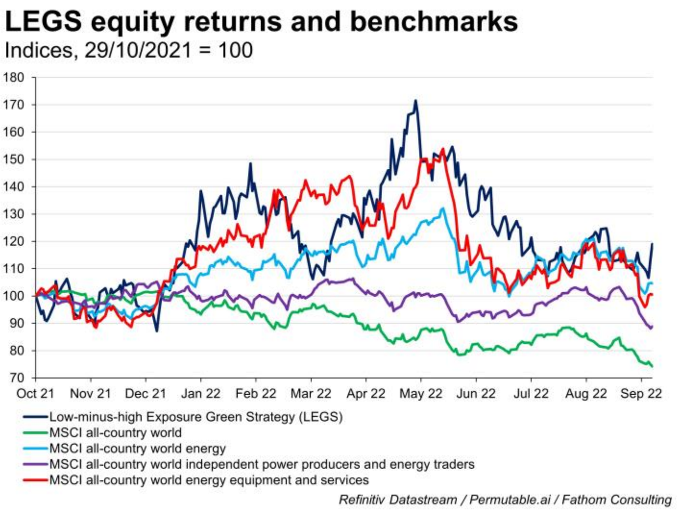

Chart authors: Linnéa Hjelm, Brian Davidson, Andrea Zazzarelli, Dimos Andronoudis

4. This is a textbook zero-investment portfolio to research the viability of a stylised equity strategy. One buys $1 of the stocks for which a price appreciation is expected, the low coverage green stocks here, while selling $1 of the stocks for which a price deprecation is expected, the hyped green stocks here. The weights of the bought and sold stocks are determined by their market capitalisations at the beginning of the holding period, 29/10/2021 here. While no cash leaves the pocket, had one implemented that buy-sell portfolio, there are still transaction costs that would have incurred. Although not accounted for here, the transaction costs could not have eroded the end-of-period portfolio performance by more than 1%.

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Further reading:

An investor's guide to net zero by 2050: key takeaways

The UK's degrowth plan

Inflation: seconds out for round two

In case you missed it, here's last month's round-up:

China economics

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