Investment Recipes

by AtonRā Partners

SPECIAL ISSUE

Sustainable Future In A Low Oil Price Environment

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AtonRâ Partners SA
www.atonra.ch

research@atonra.ch
+41 22 906 16 16

7, rue de la Croix d'Or
1204 Geneva | Switzerland

On the Menu

Editorial

As oil prices have made headlines by printing negative prices on the futures market, we thought it would be interesting to provide our customers with a detailed summary of our view about the impact oil prices may have on the renewable energy sector and, more generally, the Sustainable Future investment theme.

Indeed oil prices experienced unforeseen volatility as of late, and in this special edition research report we have pointed out the catalysts and key variables which, in our opinion, are important to monitor when looking into this theme. The reality is not always as it may appear at first sight...

The AtonRâ Team

SUSTAINABLE FUTURE IN A LOW OIL PRICE ENVIRONMENT

Geopolitics – The Volatility Factor

A match in a powderhouse

Given the importance of the middle east for the global oil market, any conflict out-break would lead to a spike in prices volatility, and disrupt the global oil supply. This would result in countries across the world scrambling for alternative energy sources and accelerate the race to energy independence – the perfect combination for our sustainable future investment theme.

- Middle-east accounts for 60% of global oil production and 40% of natural gas.
- Vast majority is transported via tankers leaving the Persian Gulf through the Hormuz Strait.

Oil and power go hand in hand

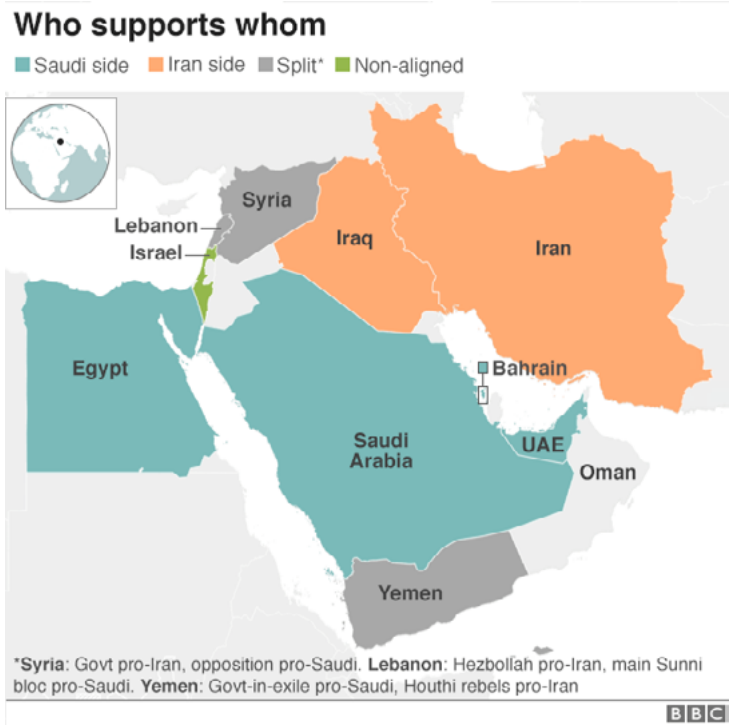
The middle-east region is oil-rich but also undermined by inter-regional power struggles that have been in place for decades, polarizing the interests of economic super powers like the U.S., Russia and China.

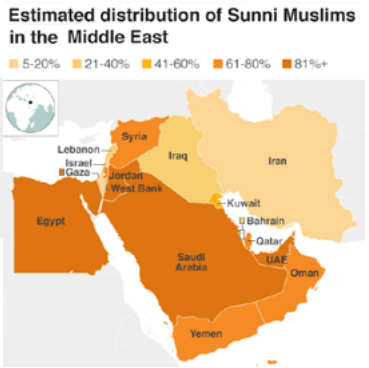
- The main local powers are Iran and Saudi Arabia, facing each other on a number of fronts, and backed by rivalling global superpowers.
- The regional alliances follow quite closely the Sunni-Shia split.

Winds of war?

Tensions in the area have been steadily on the rise over the last few months, and the U.S. has significantly increased their military presence, especially with their navy to control the Persian Gulf and Horrmuz Strait.

- Given the nuclear threat, an American attack on Iran wouldn't surprise us.





SOURCE:
https://www.bbc.com/news/world-middle-east-42008809

Renewables

What are the opportunities?

Heightened volatility in oil prices makes investments in new exploration & production (E&P) projects less attractive. Oil majors will continue to diversify their investments towards longer-term & less risky investments in the cleantech sector.

- WTI oil prices would have to rise back to ~$50/barrel to make new well drilling projects profitable in the U.S., while a price of ~$25 would be needed to at least cover operating expenses for existing wells.

Oil price impact on end market – conventional wisdom

Low oil prices reduce competitiveness of renewable energy sources, lowering grid parity levels and jeopardizing future capex in large renewable projects.

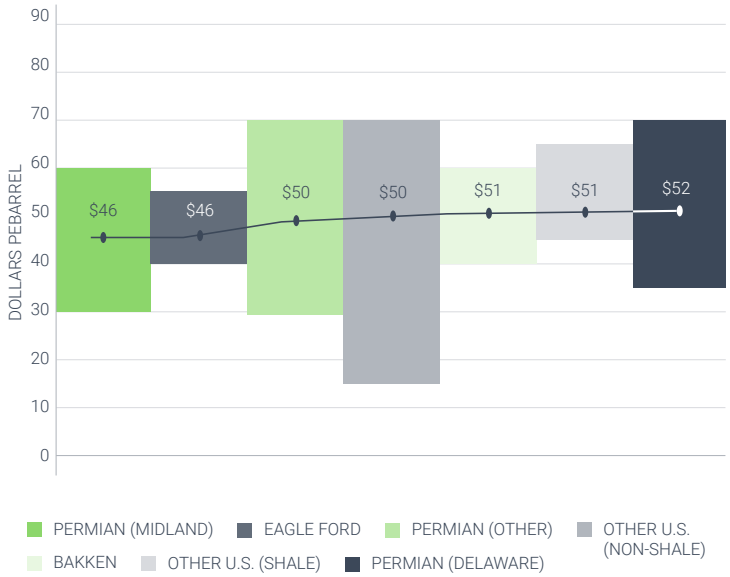
- Reality check: current internal rate of return (IRR) for renewables projects is comparable to oil & gas new projects with an oil price at 35$/barrel.

Oil price impact on end market – what really matters

Oil-fired power plants are marginal and diesel reciprocating engines are way more expensive to operate than renewables.

- Oil-fired power plants represent less than 3% of the global mix.
- Price competitiveness for diesel reciprocating engines operating on a 2.5$/gallon stands at ~150$/MWh, just in line with the most expensive solar rooftop installations.

BREAKEVEN PRICES FOR NEW WELLS



SOURCE:
https://www.lazard.com/media/450337/lazard-levelized-cost-of-energy-version-110.pdf
https://www.woodmac.com/news/opinion/could-clean-energy-be-the-winner-in-the-oil-price-war/

Renewables

Key drivers' sensitivity to oil price

Grid parity is the main driver for capex in large scale renewables projects. Somewhat counterintuitively, low oil prices are likely to improve grid parity levels for renewables, as its main impact is likely to be on natural gas prices.

- Shutting down unprofitable Permian basin oil wells will reduce related natural gas production, and help push prices higher from current historically low levels.
- Natural Gas Combined Cycle (NGCC) plants operating at current 2$/MMbtu have a levelized cost of energy comparison of ~33-35$/MWh versus 32$ and 28$ for utility scale Solar PV and Wind, respectively.

Oil price impact on the value chain

The main impact of low oil prices in the renewables' value chain are to be found in transportation and logistics costs, but are unlikely to feed through to the final user. Also, production and material extraction are fuelled by oil, but this remains a minor component in price setting.

- Solar PV are to be shipped globally mostly from China.
- For wind turbines components transportation is a big cost element.

Low oil prices – any impact on regulations and policies?

Policymakers aim for energy independence, thus ongoing supportive regulations for renewables are unlikely to change, and current technology in both solar and wind has become price competitive with other fossil fuels even without subsidies.

- Policymakers are likely to grant large projects deadline extensions to allow for the constraints related to the current COVID-19 context.

SOURCE:
https://atonra.sharepoint.com/:b:/t/research/ERh-W2Rf7tNCvsx9ciDHcGABIbekug9WBgNnv_Uaxm6hgw?e=MoBmpG

Electric Vehicles (EV)

What are the opportunities?

COVID-19 crisis more than low oil prices is a likely boost for Electric Vehicles market, as social distancing will work in favor of private car ownership given people will try to avoid using public transports.

- China's highway traffic numbers were back to above 2019 levels by the end of March, while public transport usage remained well below normal.
- A recent survey in China showed 72% of car-less respondents claimed that the current outbreak had strengthened their intention to purchase a new vehicle.

Oil price impact on end market – conventional wisdom

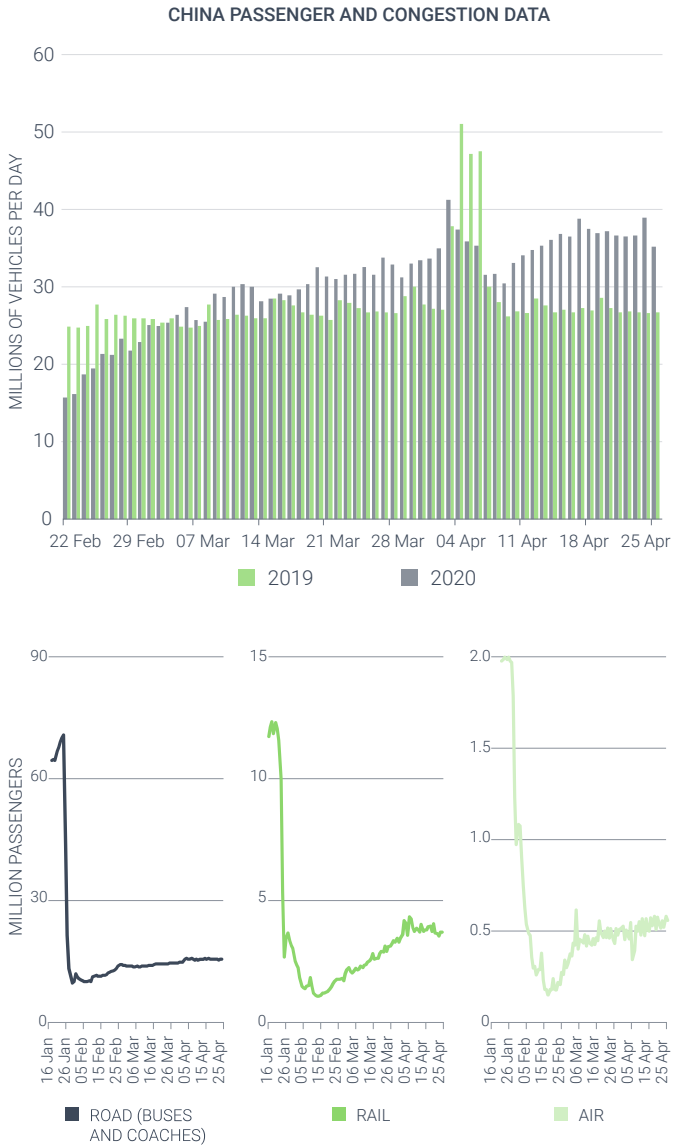
Low gasoline prices reduce Electric Vehicles (EV) cost competitiveness, thus affecting sales, as buying is based on total cost of ownership (TCO) and EVs need to make up for higher buying prices with lower operating expenses.

- Reality check: EV buying prices have come down to comparable high-end mass market internal combustion engine (ICE) models.

Oil price impact on end market – what really matters

EV sales today are correlated to model availability, purchase price, performances, and charging infrastructure. EVs' economic competitiveness keeps on improving notably through enhanced battery technology and economies of scale.

- Tesla announced a new battery intended for the entry-level version of its made-in-China Model 3 that is 20% cheaper (although having a reduced driving range) than the more common nickel manganese cobalt oxide (NCM) batteries.
- BYD revealed its LFP "Blade Battery," which they claim to be 30% cheaper.



SOURCE:
BloombergNEF, Tracking the impact of Covid-19 in China: Aprile 27, 2020

Electric Vehicles (EV)

Key drivers' sensitivity to oil price

EVs key drivers are little or not affected by oil price volatility. Model availability, range, economies of scale remain firmly in place. And the environmental awareness factor is actually likely to be boosted by the current context.

- Automakers have engaged in developing their electric fleet through long term investment projects in both model developments and electrification programs, that are unlikely to be rolled back because of low oil prices.

Oil price impact on the value chain

Cheaper oil translates into reduced transport & logistic costs. However, the savings are unlikely to feed through to the final users. Similarly, for materials and parts production, COVID-19 & lockdowns are having a way more significant impact than oil prices.

- The cost elements directly related to oil price remain minor in the overall value chain of EVs.

Low oil prices – any impact on regulations and policies?

As we have recently written in detail about (see article here), policy-makers are maintaining their strategic orientation, and favor development of the EVs market, albeit with different approaches.

- China is extending its subsidy program on New Energy Vehicles (PHEV & EVs) for another 2 years (until 2022).
- Europe is pushing carmakers through its new regulation on car emissions (phased in this year and applicable from 2021 onward) targeting an average emission of 95g co2/km for new cars.

SOURCE:
https://www.ipsos.com/sites/default/files/ct/news/documents/2020-03/impact-of-coronavirus-to-new-car-purchase-in-china-ipsos.pdf

Water And Wastewater Management

What are the opportunities?

In the E&P field, companies providing innovative water disposal, logistic, and treatment solutions will be best positioned to respond to market needs. Future opportunities might arise in the coming years as new technologies are developed to satisfy demand.

- Third party organizations potentially stand to gain new clients if they provide attractive pricing to E&P companies looking for cost reductions.

Oil price impact on end market – conventional wisdom

Oil production, notably unconventional wells, require high volumes of fresh water. Reducing oil production will result in less water usage and wastewater production.

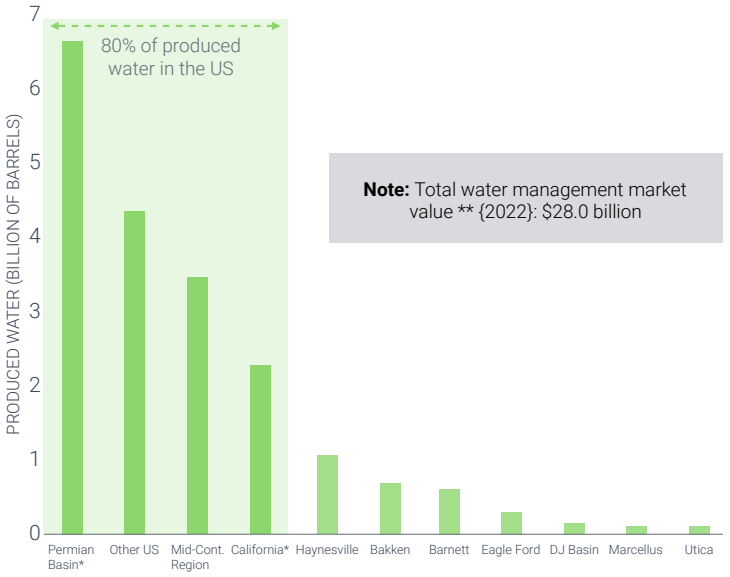
- Reality check: the volumes of fresh water required for operating the wells will indeed be reduced, but produced wastewater volumes remain significant and require specific treatment to be disposed of.

Oil price impact on end market – what really matters

In unconventional wells significant costs are associated with water hauling, transporting, treating and disposal. Low oil prices are pressuring operators to minimize such costs.

- Produced water coming from shale oil wells contains a mixture of salts, solids, polymers, etc. that prevents re-injection, and requires specific treatment.
- For some operators the disposal of produced water is the largest lease operating expense (LOE), especially in wells with high water-to-oil ratio.

US PRODUCED WATER VOLUMES AND WATER MANAGEMENT VALUE BY 2022



** Includes conventional production*
*** Market value includes: Sourcing, pre-treatment, flowback water, disposal, ligistics andrecycling.*

SOURCE:
https://news.ihsmarkit.com/prviewer/release_only/slug/2020-04-02-produced-water-from-onshore-us-oil-and-gas-activities-to-decline-to-nearly-20-billion-barrels-annually-reach-28-billion-in-value-by-2022-ihs-markit-says

Water And Wastewater Management

Key drivers' sensitivity to oil price

Water and wastewater treatment sectors are driven mainly by demand for fresh and clean water as well as optimizing efficiency. In both cases, oil prices have little or no impact.

- Deployment of clean water solutions relates to health and cleanliness standards. COVID-19 crisis is likely to have a more significant impact than low oil prices.

Oil price impact on the value chain

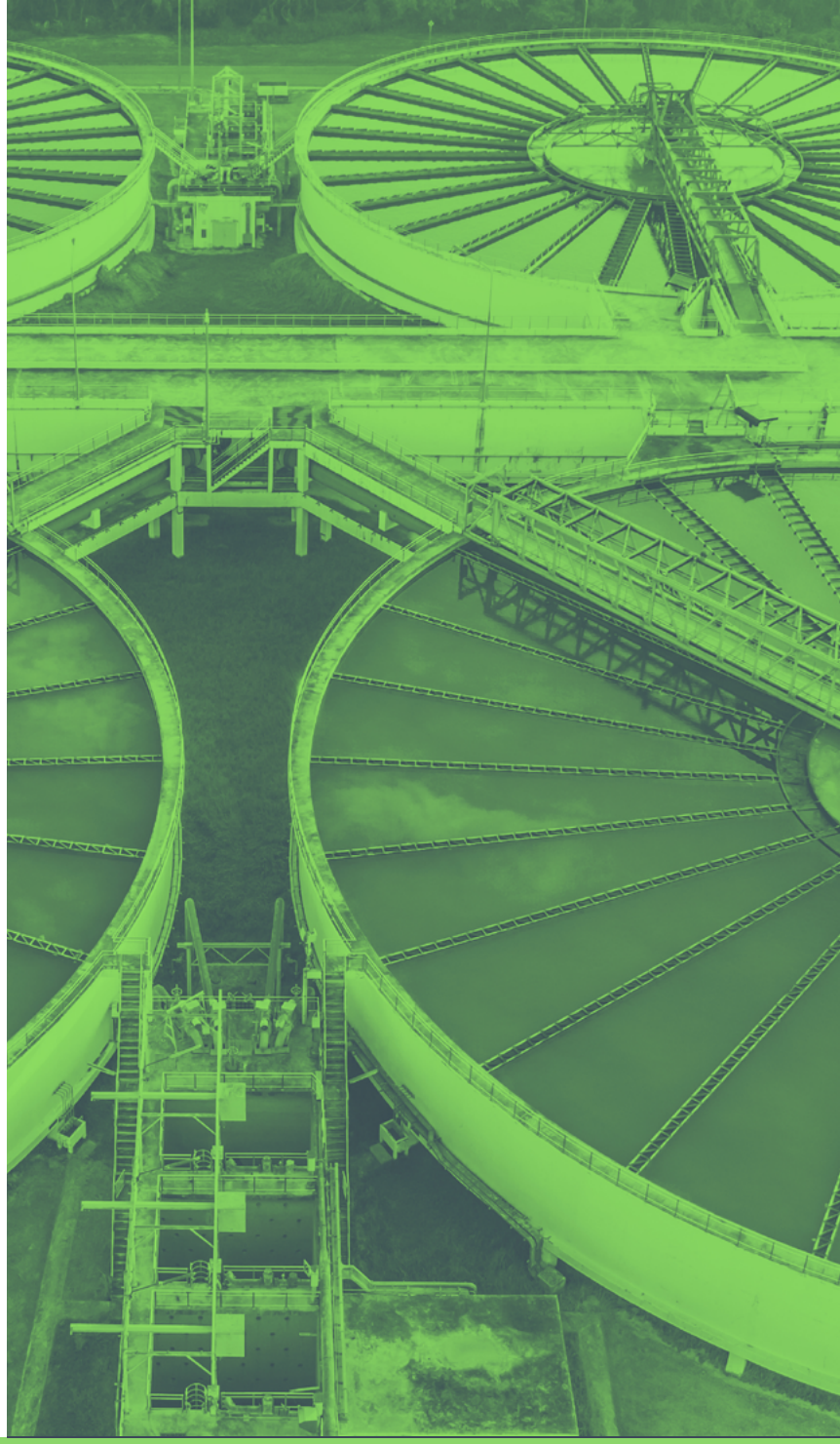
There is no direct impact on the value chain. Oil production is a demand driver for related wastewater treatment.

- Some innovative technologies developed in the oil field can find application in related areas, such as tank cleaning.

Low oil prices – any impact on regulations and policies?

We do not anticipate specific changes to regulations for the sector as a consequence of low oil prices. But supportive policies targeting the oil sector are likely to favor more generally the industrial sectors of the U.S. economy.

- Trump's stimulus package focusing on infrastructure is likely to cover and support also the water infrastructure sector at large.



Batteries And Storage

What are the opportunities?

Low oil prices are actually strengthening existing trends: both public and private actors are moving away from oil dependency, thus fostering investments and innovation in clean tech.

- Oil majors are increasing diversification by directing capex towards cleantech, including storage.
- Governments recognize the importance of policies to foster both smarter and cleaner energy management in their endeavor to reach energy independence.

Oil price impact on end market – conventional wisdom

Batteries and smart storage markets are not related to oil prices, as there is no direct substitution effect.

- Reality check: The sector is directly related to both electric vehicles (EV) and renewable sectors which, as seen in previous sections, are actually likely to benefit from low oil prices.

Oil price impact on end market – what really matters

The batteries and storage sector is functional to the electric vehicles and renewables sectors, and actually contributes to their competitiveness versus oil-related alternatives.

- EVs rely on high performance batteries to extend ranges and loading times to reduce shortcomings versus internal combustion engines.
- Renewables require smart storage solutions to ensure intermittently produced energy becomes available throughout the day and contribute to baseload.

Batteries And Storage

Key drivers' sensitivity to oil price

The drivers for this sector are the development of EVs and the search for energy independence and resilience through renewables. In both cases oil price volatility is actually strengthening the trends.

- Governments aim for energy independence, and renewables offer a way out of oil dependence, even for countries that can produce their own oil, like the U.S.
- EVs leverage technological developments in batteries to fill the gap versus oil-related legacy transportation means.

Oil price impact on the value chain

There is little impact of low oil prices in the value chain of this sector, as it remains limited to transportation and logistics costs, representing a small portion of the over-all cost structure of the sector.

- Materials extraction like lithium, cobalt, nickel or graphite, may slightly benefit from lower oil prices, but still may be more affected by the COVID-19 related slump in demand.

Low oil prices – any impact on regulations and policies?

The regulations in the sector are quite specific and are not impacted by oil prices. Similarly, public policies that impact the sector relate to long-term strategic goals that are not affected by low oil prices.

- Regulations concern mainly safety and environmental friendliness, notably for batteries.

Catalysts

- **Continued power struggle within Opec+.** Failure by the cartel to expand on production cuts would likely prolong the current low oil price environment.
- **COVID-19.** The visible and well documented impact of reduced polluting human activity overt the lockdown period, is likely to stir demand for cleaner technologies from a wider part of the global population.
- **Military tensions.** Any « incident » involving the sizeable military forces currently patrolling the area could lead to the closure of the Hormuz Strait and thus a spike in volatility for oil prices.

Risks

- **Sustained low natural gas prices.** Would favor natural gas combined cycle plants before renewables for current operations and future capex.
- **Fiscal austerity.** Countries that rely on oil revenues will see budgets shrink, that could affect planned spending on cleantech technologies.
- **Regulatory changes.** Lobbies could pressure regulators to help the oil industry by easing environmental friendly constraints.

Bottom Line

- The relationship between renewables and the oil industry is not as straightforward as it may seem. The impact of low oil prices will be of course different across the various sub-sectors, and it needs to be nuanced. Nevertheless, the volatility and disruption brought by the current low oil prices environment are rather strengthening the underlying trends that favor our positive stance on the sustainable future theme.
- We believe that low oil prices are actually going to have a lasting positive impact for cleantech and our sustainable future related investments.

Companies mentioned in this article:
Tesla (TSLA US), BYD (1211 HK)

CASUAL FRIDAY

SOURCE:
https://gatissluka.com/

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AtonRâ Partners is a conviction-driven asset manager combining industrial and scientific research with financial analysis. AtonRâ Partners focuses on long-term trends powerful enough to be turned into thematic equity portfolios.

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