

Investing in Water Security



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To mark World Water Day 2022, Markus Barth, CEO of Anatase, looks at the challenges and possible solutions for investors looking to manage water risks.

Climate has been by far the most prominent theme in ESG investing over the past five years with numerous exchange-traded funds (ETFs) tracking rules-based low carbon indices totalling hundreds of billions in assets. However, virtually 100% of these are focused on low carbon emissions. While no one will argue about the fact that CO2 emissions are bad for the planet, little information has been put forth about the impact of high carbon emissions on the future earnings of the worst emitters. And low carbon emissions investment strategies mostly exclude entire sectors such as energy and utilities, while being heavily weighted in technology and healthcare. This has proven to be a good bet over the past five years because tech and healthcare have massively outperformed energy and utilities. This has also led many to conclude that low carbon has generated alpha, but this author believes that the sector bets were the source of return. Over the past few months, as tech has corrected and energy prices soared, we've observed significant low carbon strategy under-performance. We question whether adding low carbon to a balanced portfolio has been more of a box-ticking exercise than a return enhancing strategy. Investors seeking out environmentally friendly investments may be questioning their decisions now. Instead of targeting climate investing by making large bets entailing significant risks, we believe there is an alternative which still provides material environmental impact without bearing most of the inherent risk.

The other side of climate is water. According to the World Economic Forum, Water is linked to 9 out of the 10 worst global risks. However, it is not widely known that nearly all sectors rely on water to varying degrees. Beverages, industrials, textiles,

mining and semiconductors (to name a few) all require vast amounts of water as a critical input to their production processes. For example, it takes over 7,000 litres of water to manufacture a single pair of blue jeans. Consider the stark contrast between carbon and water usage today. A company that spews carbon into the atmosphere can still manufacture products, produce revenue and grow earnings – which implies that high carbon emissions do not directly or materially impact corporate profitability. While planned EU ETS reforms may have an impact on costs incurred by companies in future, their materiality is unknown at this point and there is still the US and the rest of the world to contend with. If a Coca-Cola plant can't get water, the firm must close the plant or at the very least, pay a much higher price to transport the water to the plant from another location. Either way, Coke's earnings would be negatively impacted. The 2030 water targets outlined by the UN requiring US\$670 billion of annual outlay will most likely not be met without stronger new actions. Why aren't investor portfolios focused more on water risk when considering climate investments?

Existing water indices

There have been water indices in the market since 2007 and investment in these indices is nearly US\$40 billion as of year-end 2021. But these indices do not address water risk. They typically contain a concentrated basket of 30-50 companies that are either water utilities or manufacturers of water purification equipment. These indices are a pure play on water remediation and have no bearing on mitigating water risk across the broader markets. In addition, these indices have mostly under-performed their equity market benchmarks over recent years and investors may be averse to further investment in the water theme as a result.

Global water scarcity is well-documented and creates significant financial risk to investors who fail to account for water risk in their portfolio. According to the **CDP**, the potential financial impact of water risk to corporate earnings is in excess of US\$301 billion while mitigating those risks is estimated to cost 1/5th that amount! Clearly, water risk has a meaningful and direct impact on future corporate earnings and investors who fail to incorporate water risk reduction into their portfolios may experience significant future underperformance.

According to a **DWS report** published in November 2020, equities provide the greatest progress in managing water risk, but most investors look to engagement to mitigate future risk. They concluded that targeting risk control by reducing exposure to stocks with higher water risk was the best of both worlds, facilitating engagement while reducing portfolio 'water footprint' and offering sustainable returns.

Defining water risk

Changing climate, which is substantially manifested through water scarcity, portends unprecedented disruption in supply chains, which pose threats to production and distribution channels. Water Risk is environmental, it impacts future earnings, it is ubiquitous across all sectors AND it is wholly unaccounted for in market benchmarks. The drivers of water risk include climate change/climatic events, failing infrastructure, pollution, weak regulations, and poor company water stewardship. These risks lead to financial risks that are operational, reputational, and regulatory in nature which can lead to earnings shortfalls, litigation, and penalties. The scarcity of water will directly impact the earnings of companies which will translate into lower share prices for those companies who fail to manage water properly.

There are two key aspects of water risk:

1. **Water utilisation** – how well has a company utilised water?
These metrics can be measured by total water withdrawal, fresh water withdrawal, water discharged, water pollution and water recycled. These measure a company's water Footprint and reflect where they are today in terms of utilisation.
2. **Water stewardship** – is the company doing anything to mitigate future water risk?
Stewardship is a more forward-looking measure of water risk and it focuses on the existence (or lack) of corporate water policies such as
 1. Is there a water policy?
 2. Does the company target water conservation?
 3. Does the company use technology to mitigate water risk?

A likely reason for the lack of passive investment strategies focused on water security may be the difficulty in measuring water risk. Water data is not as readily available as CO2 emissions and the distribution of water usage across different industries is massive. As we know at Anatase, considerable research and analysis is required to develop a means to systematically stratify water risk at the company level. By applying certain statistical techniques, water risk can now be quantified, which enables a company-level ranking system across the broader capital markets.

Mitigating water risk in a passive strategy

Stratifying water risk results in a ranking system that enables portfolio constituent weights to be adjusted to reflect the degree of water risk. This effectively reduces

portfolio water risk as companies with low risk are over-weighted while companies with higher risk are underweighted.

Much the same way that CO2 emissions can measure the carbon footprint of a company and by extension, the weighted carbon footprint of a portfolio, so too can the water footprint be calculated using a similar approach. As we explained, water utilisation informs the water footprint which enables such a footprint to be calculated at the company and portfolio level.

By using the water risk metrics described above, it is relatively simple and transparent operation to reweight a broad universe of companies across all sectors resulting in an average 50% lower water footprint than traditional market benchmarks (S&P 500, MSCI World, EuroSTOXX 50). This approach can significantly mitigate water risk without sacrificing diversification across sectors, countries, and regions. Investors can now hedge the future negative earnings impact from high water risk without making large bets and accepting unintended risks.

While our water risk methodology does not specifically target a lower carbon footprint, we were not surprised to see that a water security index has an average 35% lower carbon footprint than the traditional benchmarks. It makes sense that a company that is mindful of its water risk also pays attention to its carbon emissions. While it may not be theoretically proven that low water risk results in lower carbon emissions, the evidence suggests that the two are at least somewhat correlated.

Reasons for optimism: Water security indexes

Reweighting a free float market capitalisation universe by adjusting for the degree of water risk results in a portfolio that has a 99.5% correlation to traditional benchmarks. While there are some modest over/under weights relative to sectors and countries, all of these are well within acceptable boundaries. This relatively close tracking to market exposures greatly reduces the risk of deviating too far from market performance while still resulting in a significantly lower water footprint and carbon footprint.

There is no doubt in my mind that the market has not been pricing water risk in securities to date. Benchmark indices have completely ignored water risk and without a benchmark that hedges against water risk, there has been little interest in passive investment products linked to such a strategy. This is beginning to change, with the launch of the Thomas Schumann Water Indices, which I helped to design,

and which have outperformed their market benchmarks by approximately 2% per annum between October 2015 and December 2021 while having a much lower Water Footprint, similar volatility, dividend yield and very high correlation. At the industry level, we would like to see greater interest in incorporating water risk in benchmarks and look to the future optimistically.

As sure as we are that water risk has not been priced in the market up until now, we are equally certain that water risk will materialise in security prices in the near future. Each day, more information is reported on the impact of water shortages on manufacturing and production, and it is only a matter of time before corporate earnings more widely reflect the impact of those shortages. (We know that earnings disappointments lead to downward pressure on stock prices.) Therefore, in the future, it seems intuitive that those companies with lower water risk should significantly outperform those with higher risk.