MAY 2022

Holding the world in your portfolio and considering climate transition risks

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1. Introduction

The STOXX WTW Climate Transition Indices are a new approach to managing climate risk that offer investors a systematic and transparent way to incorporate climate transition risk into their investment decisions.[1] The index methodology leverages WTW's proprietary Climate Transition Value at Risk (CTVaR) data to assess the anticipated impact of climate transition on company valuations as we move to a net zero economy. The indices offer investors diversified equity exposure with the potential for enhanced returns over time and attractive sustainability characteristics. For investors seeking to manage climate transition risk, the STOXX WTW Climate Transition Indices may be used to replace existing equity allocations.

This paper studies the characteristics of one of the climate transition indices: the STOXX WTW World Climate Transition Index (CTI). We evaluate the CTI's risk profile in comparison to a traditional global equity allocation as represented by the iSTOXX World A Index (World Index), a broad developed market index. We also review the potential changes incurred by shifting from a global equity allocation as represented by the World Index to the CTI by allocating successive 25% increments to the latter.

From a sector perspective, there are only a few differences in sector weights versus the broad market, and these also tend to be relatively small since the CTI's portfolio construction methodology limits significant deviations in sector and country weights. We observe higher exposure to the Information Technology, Financials and Health Care sectors and, unsurprisingly, lower exposure to Industrials and Materials compared with the broad market index. The CTI also has a noticeable underweight to Energy and a sizeable allocation to US companies (a consequence of some of the largest Technology, Financials and Health Care companies being incorporated in the US). In addition, it has higher weights in a few European countries. These active weights may evolve over time as companies adapt their businesses in line with the transitioning economy and regulation increases throughout the world.

From a risk perspective, the CTI is a well-diversified global index with total risk that is comparable to that offered by the broad market. It has lower factor risk but higher stock specific risk. The style factor exposures for the World Index and the CTI were directionally similar for most factors with only a few exceptions. Overall, the CTI holds larger, more profitable, more liquid and more growth-oriented stocks than the World Index.

2. Rationale for considering climate transition risk

Climate-related events and associated costs are increasing in both number and magnitude. The consensus among climate experts is that a rapid economic transition to net zero is needed to avert the worst climate scenarios. Driven by concern for the impact that climate change may have on the economy and future generations, many countries have implemented policies to help mitigate it and to encourage a shift to a net zero economy. Companies will need to adapt to this transition or they may face significant challenges.

The effects of climate change mitigation efforts aimed at moving towards a net zero economy will be distributed unevenly across businesses, sectors and countries. Some companies are poised to benefit from the low-carbon transition, while others may face larger hurdles as they move towards sustainable business models. For example, certain industries such as coal mining may become obsolete, while others may be able to reinvent themselves by shifting to new, low-carbon technologies. One example here are traditional automotive manufacturers, which are switching over to producing electric vehicles.

[1] For more details, see the following blogpost: STOXX Willis Towers Watson Climate Transition Indices: A comprehensive solution to manage companies' risk in the economy's journey to net zero.

Since the risks and costs of the transition will not be evenly distributed, investors need to be aware of the impact that climate change and the transition to net-zero will have on companies in the form of changes to policy, technology and the consumer landscape. Ongoing climate risks and the costs of the transition represent real risks for companies and must be considered when analyzing investments.

3. Methods for incorporating climate risk into the investment process

Given the implications for companies of the transition to net-zero, investors need a robust framework to quantify the financial impact of climate risk and the low-carbon transition, and to incorporate this into their investment decisions and portfolio risk management.

Many current approaches to factoring climate risk into investments are simplistic and fall short of accurately identifying climate concerns and their impact on company valuations (and hence on investors). For example, many existing climate-oriented investment solutions address climate concerns solely by focusing on a company's environmental footprint (the "E" in "ESG") and often use backward-looking measures such as carbon emissions or carbon intensity to quantify exposure. Despite the popularity of these strategies among investors, WTW's analysis indicates an extremely low correlation between emissions intensity and transition risk.

This means that, while these traditional climate strategies work well to help lower portfolio carbon emissions, investors need better approaches and tools to appropriately manage transition risk. Solutions need to move away from solely relying on laggard (backward-looking), company-level climate indicators such as financial reporting data and greenhouse gas (GHG) emissions footprints. Instead, investors need solutions that evaluate a company's climate exposure from a financial risk perspective on a leading (i.e., forward-looking) basis.[2]

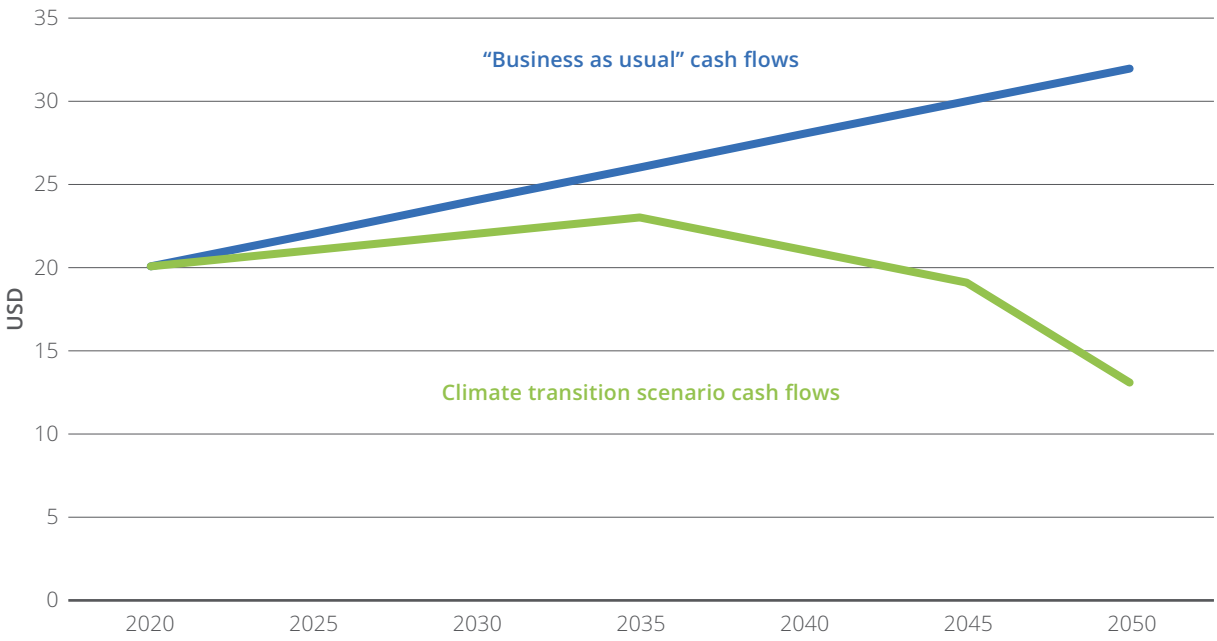
WTW's CTVaR methodology, which is calculated by WTW's multidisciplinary Climate Transition Analytics (CTA) team, meets this need and captures the financial impact of transition risk on individual companies more accurately. The methodology takes a holistic, bottom-up and forward-looking approach to understanding how climate transition risk directly impacts company valuations, and hence offers investors a more robust approach to incorporating climate transition risk considerations into their investment decisions.

3.1 Value proposition for Climate Transition Value at Risk

CTVaR measures climate transition risk, which is defined as the loss or gain in value from changes to policy, regulation, technologies and consumer preferences resulting from the transition to the net zero economy. For each company, the CTVaR indicates the difference between the market capitalization of the company under a "business as usual" approach (which is the level of change consistent with current stated policies, rather than no change) and a climate transition consistent with the goals of the Paris Agreement, measured in today's prices. The valuations for individual companies can be higher or lower, depending on how they are impacted by the transition (Figure 1).

[2] For more details, see the Qontigo paper entitled Forward-looking Climate Metrics: An introduction to the current global landscape.

Figure 1: Cash flow illustration of a negative CTVaR company.



Source: WTW, Qontigo.

By leveraging the CTVaR data and framework, the CTI offers a unique, holistic insight into asset pricing and the financial risk that the transition poses for companies, while providing investors with the traditional benefits of an index. Specifically, the CTI:

- Goes beyond traditional carbon data and the use of carbon pricing or carbon exposure as a proxy for climate risk to offer a more granular analytical approach
- Curates asset-level data from multiple sources to build a higher-resolution view of climate transition risks and opportunities
- Is forward-looking and refreshes the company transition risk quarterly, rather than merely using backward-looking historic carbon emissions data
- Analyzes the whole economy by focusing on the wide range of changes needed at system level – to different goods, services and commodities – in order to drive down greenhouse gas emissions in line with the goals of the Paris Agreement

4. Summary of the CTI methodology[3]

The CTI enables investors to integrate climate transition risk into their investment decisions by aligning a broad-based equity index, from a valuation and financial perspective, with a global economic transition that would limit GHG concentrations to levels consistent with United Nations (UN) objectives for capping global temperature increases.

The CTI starts with the World Index, a broad-market equity universe covering 1,762 companies. A CTVaR measure is calculated for each company, reflecting the latter's expected change in value due to the economic transition to net-zero.

In line with index best practices, Sustainalytics' Global Standards Screening is applied and companies that violate screening criteria for ESG norms, product involvement and controversial weapons are eliminated. This screen eliminates firms with revenues from thermal coal and oil sands that exceed certain thresholds, as identified by Sustainalytics.

The remaining companies are then weighted based on a combination of their free-float market capitalization and their CTVaR. Asset, industry and country caps are applied to minimize concentration risks and prevent major deviations from the broad market.

Put simply, the index determines how capital should be reallocated to better manage climate transition risk. It tilts towards companies positioned to benefit from a transition to a net-zero economy in order to capture potential upside, and tilts away from companies adversely exposed to the transition so as to reduce any possible negative financial impact. The index may be used to potentially enhance returns, reduce climate-related transition exposure and align investments with investor climate goals.

5. Transitioning from a broad market index to the CTI

The portfolio implications for investors seeking to integrate climate transition risk into their global equity allocations are analyzed below. We evaluate the impact of shifting assets from a traditional global equity allocation, as represented by the World Index, to the CTI. This is done by investigating the characteristics of the World Index, the CTI and three portfolios combining the World Index and the CTI in which the CTI represents a progressively larger part (25%, 50% and 75%) of the whole. This point-in-time analysis was made as of September 30, 2021.[4]

5.1 The CTI shows better sustainability metrics

The weighted average CTVaR of the World Index is –3%, i.e., 3% of the aggregate global index is at risk from transition from "business as usual" to the net-zero economy[5]. In contrast, the CTI's weighted average CTVaR was zero (Figure 2). Of course, we expect to see such a difference by definition.

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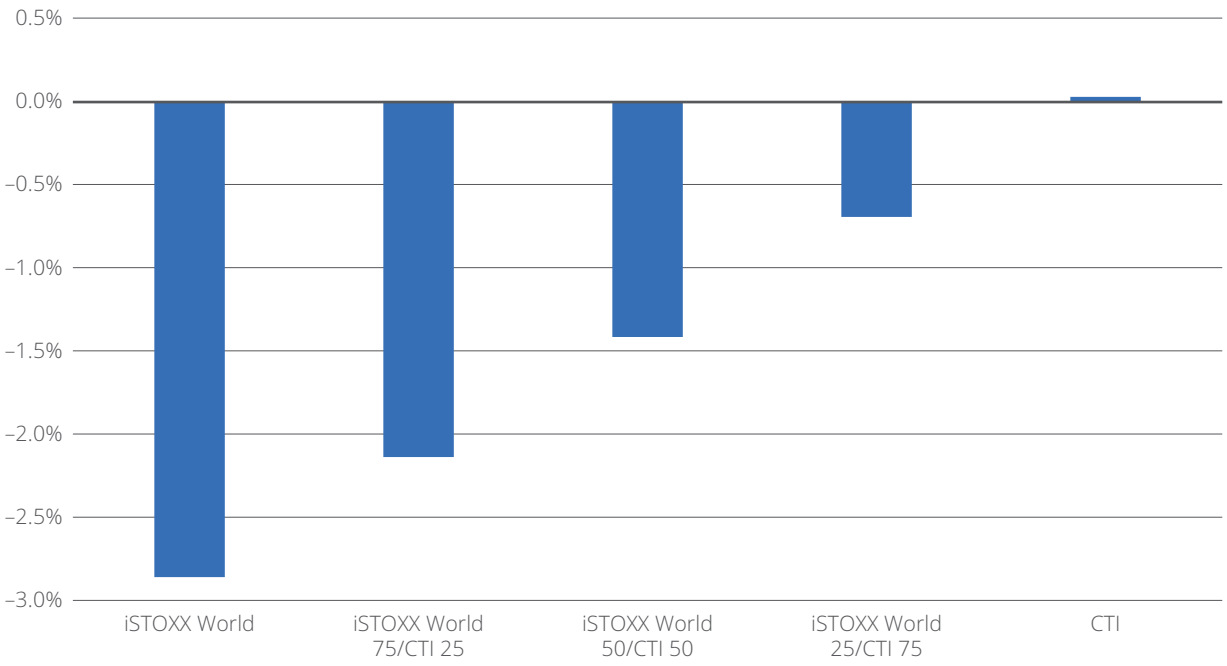
[3] For more details, see: https://www.stoxx.com/document/Indices/Common/Indexguide/stoxx_index_guide.pdf

[4] We would like to thank our colleague Twinkle Singh for providing the data for this analysis.

[5] The CTVaR for each portfolio is the weighted average of the individual CTVaRs of the portfolio components. It is calculated by multiplying each asset's CTVaR by the asset's net weight in the portfolio and then adding the results together.

Figure 2: Climate Transition Value at Risk.



Source: WTW, Qontigo; CTVaR data as of September 1, 2021.

However, the CTI also looks better on metrics that are not an explicit component of the methodology. The weighted average ESG Risk Score[6] was slightly lower for the CTI than for the World Index, and the CTI showed a substantially better profile in terms of Climate Total Emissions Intensity[7] (Table 1).

Table 1: Sustainability metrics.

	iSTOXX World	iSTOXX World 75/CTI 25	iSTOXX World 50/CTI 50	iSTOXX World 25/CTI 75	CTI
ESG Risk Score	21.31	21.13	20.95	20.77	20.59
Climate Total Emissions Intensity (USD)	140	126	112	99	85

Source: WTW, Sustainalytics, ISS ESG.
ESG risk score as of September 1, 2021; Climate Total Emission Intensity (USD) as of October 1, 2021.

[6] The ESG Risk Score is defined by Sustainalytics as the total unmanaged risks across all material ESG issues for each company. This helps investors understand financially material ESG risks at the security and portfolio level. The lower the ESG Risk Score, the better.

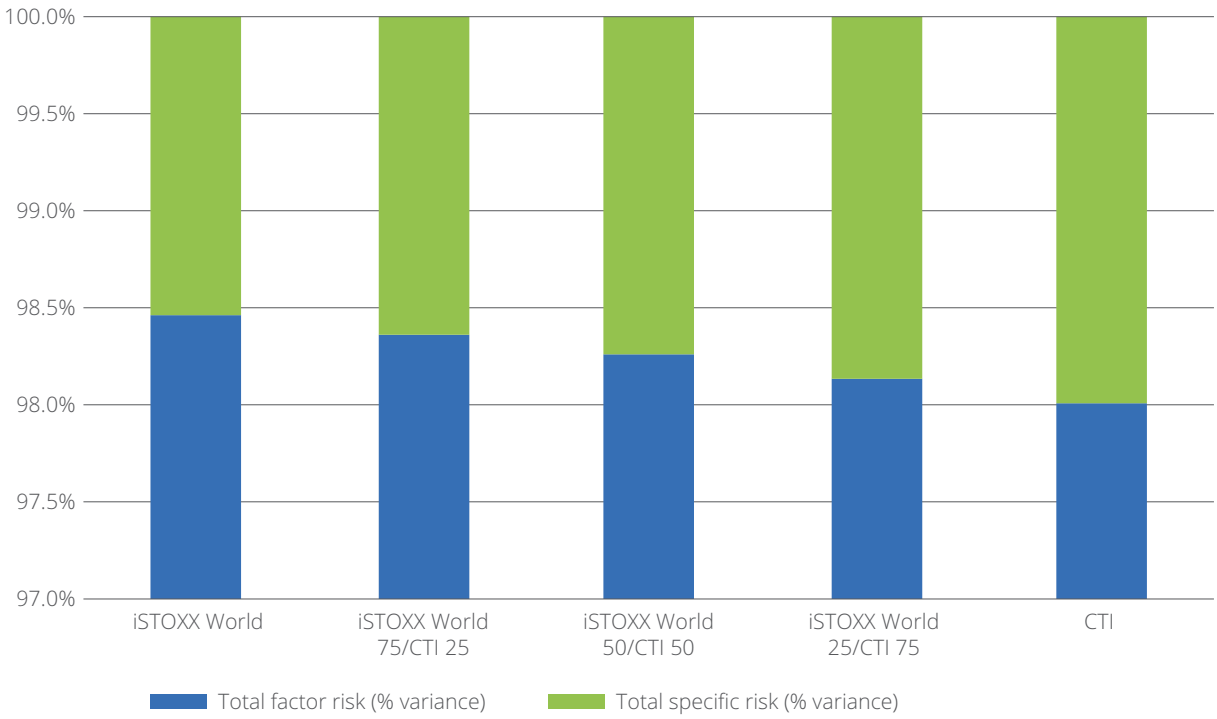
[7] ISS's Climate Total Emissions Intensity (USD) metric is the weighted average of the ratio of emissions to total revenues in USD. The lower the ratio, the better.

5.2 Total risk remains the same but small differences exist

The CTI's total risk (12.2%) was similar to that of the World Index (12.3%), indicating that incorporating climate transition risk into investment decisions in this way does not result in investors taking on additional volatility. However – and importantly – the CTI revealed slightly higher stock-specific risk[8] and lower factor risk, as measured by Axioma's Worldwide medium-horizon fundamental model (WW4). This could potentially correspond to higher stock-specific returns, especially when increasing amounts are allocated to the CTI, since we expect companies that are better equipped for climate transition to outperform over the longer term.

As we move to a progressively larger allocation to the CTI, we observe specific risk increasing and factor risk decreasing as a percentage of total risk (Figure 3). In other words, a higher proportion of the CTI's total risk is represented by the specific risk of individual stocks (rather than their exposures to the factors in the model). However, it is important to note that the differences in stock-specific risk versus factor risk are quite small.

Figure 3: Factor risk and stock-specific risk.

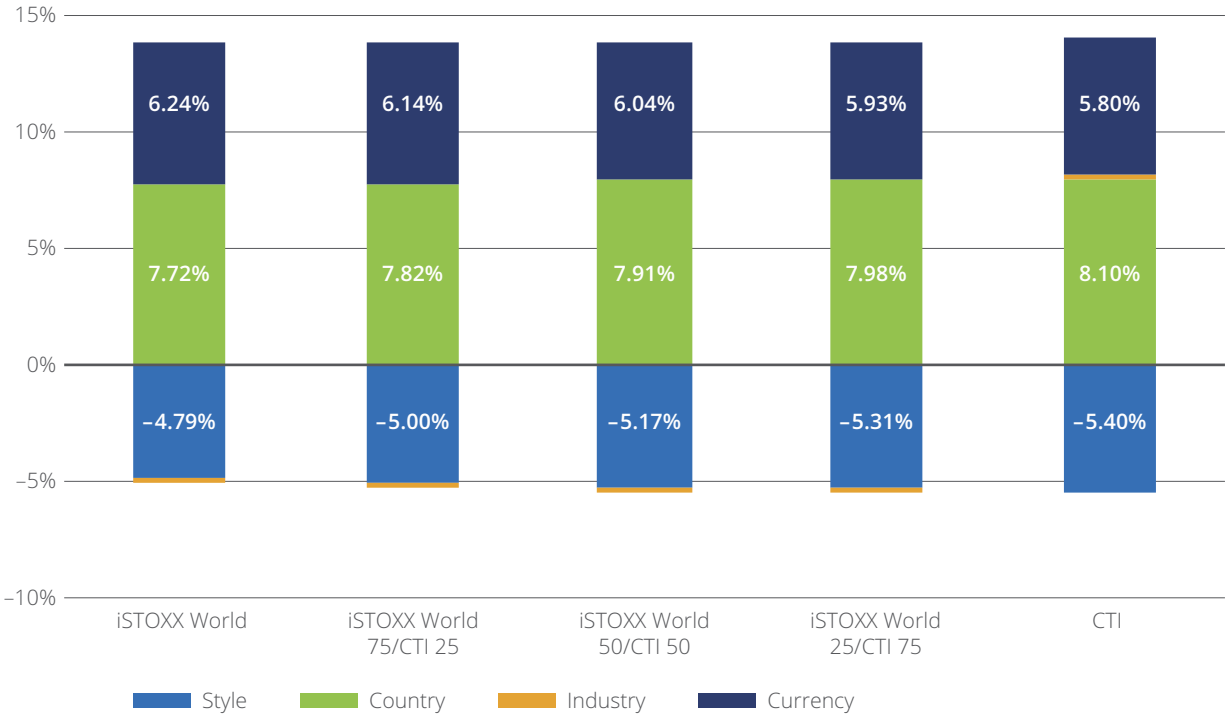


Source: WTW, Qontigo.

[8] Stock-specific risk, or unsystematic risk, quantifies the volatility uniquely associated with a particular stock. This is opposed to systematic risk, which is the stock's volatility captured by the fundamental factors in the risk model.

The CTI's lower factor risk was attributable to lower currency risk and more negative style factor risk contributions (Figure 4), while the market risk contribution – the largest among all fundamental factors in the model – was roughly the same for all indices and all combined portfolios.

Figure 4: Factor risks.



Source: WTW, Qontigo.

5.3 Most factor exposures remain directionally similar

The style factor exposures for the World Index, the combination portfolios and the CTI were directionally similar with only a few exceptions (Figure 5). In those instances where the strategies do exhibit differences, these are quite small, making the CTI a good replacement or complement to an existing equity allocation. Overall, the largest positive exposures across the portfolios were to Size and Liquidity, while the largest negative exposure was to Volatility.

We observed that the CTI tends to hold larger companies that are more liquid and more profitable than those in the World Index (i.e., the CTI exhibits larger positive exposures to Size, Liquidity and Profitability than the World Index).

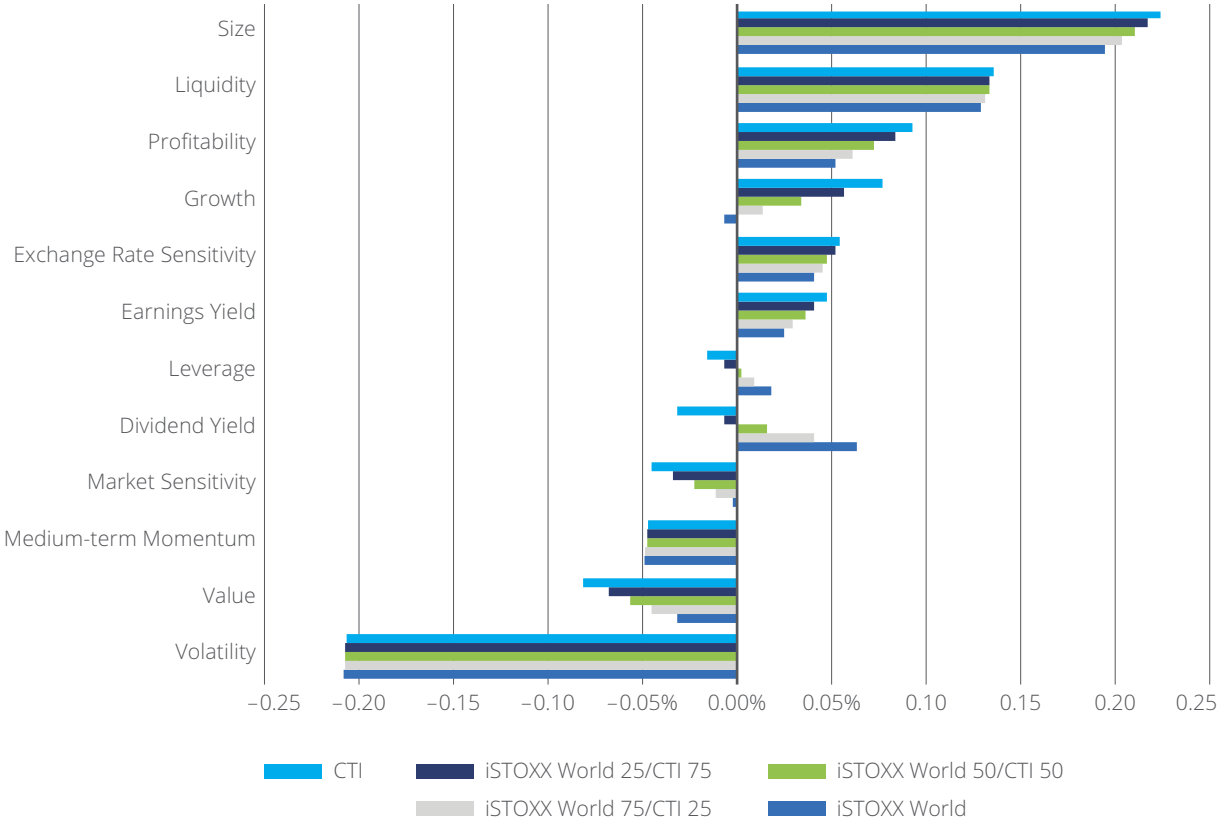
The two most noticeable differences were in exposures to Growth and Dividend Yield, where the strategies exhibited directionally different exposures. The CTI leans toward growth stocks, while the World Index had a small negative exposure to Growth. The CTI's positive exposure to Growth is likely a reflection of its higher weight in Technology stocks, which tend to be growth-oriented companies.

In addition, stocks in the World Index pay a higher dividend yield than the average yield in the WW4 model universe (exhibiting a positive exposure to Dividend Yield), while stocks in the CTI pay less than the average dividend yield in the WW4 model universe (and so exhibit a negative exposure to Dividend Yield).

Interestingly, as of the reporting date both indices exhibited a negative exposure to Momentum. In addition, both favor low-volatility stocks, having similar large negative exposures to Volatility. The current direction of most factor exposures is likely to be maintained (e.g., a broad, developed market index is likely to have a larger Size exposure than the universe used to create the risk model). However, the Momentum exposure in particular is likely to shift over time, depending on which types of stocks are currently in favor.

In summary: We observed directionally similar results when evaluating the factor exposures of the CTI and the World Index on September 30, 2021.

Figure 5: Style factor exposures (sorted from largest to smallest in the CTI).



Source: WTW, Qontigo.

5.4 Information Technology has a greater weight in the CTI, while Energy almost disappears

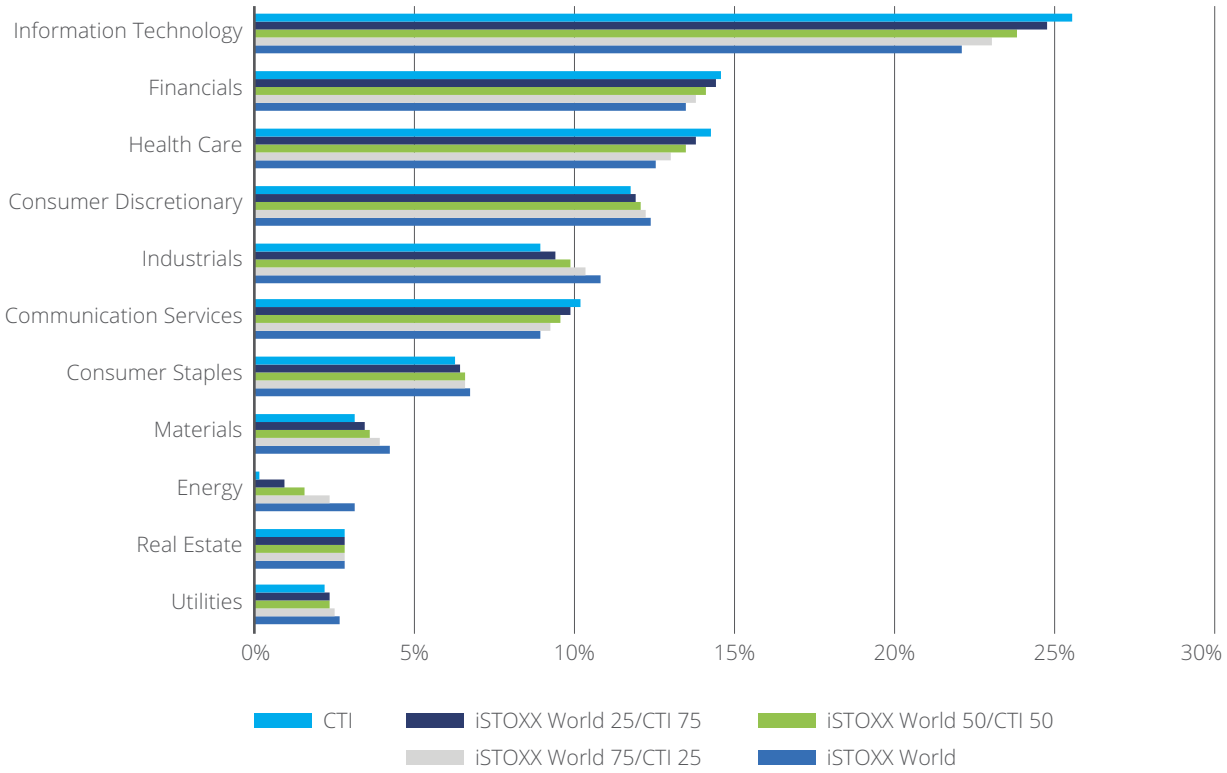
Although the CTI exhibits small sector differences to the World Index, it has embedded methodology elements which serve to limit sector deviations from those of the broad market. Despite this, the CTI does have slightly higher weights in Information Technology, Financials, Health Care and Communication Services. This is in line with expectations, since these sectors are less likely to be impacted as negatively by the economic transition than other, commodity-heavy industries, and may even be beneficiaries (Figure 6). We may see these active weights evolve over time, as companies, including those in commodity-heavy industries, adapt their businesses for the transition.

Given the higher weights for Information Technology and Financials, the two sectors' aggregated contribution to index risk within the CTI amounted to 45% – a difference of six percentage points to the 39% contribution they made to World Index (Figure 7).

At the same time, the CTI saw lower weights in Industrials, Materials, Utilities and Consumer Discretionary. Due to the traditional "brown energy" companies typically present in the Energy sector, we observed only a very small allocation to Energy within the CTI, as these companies are likely to be impacted more negatively by the economic transition.

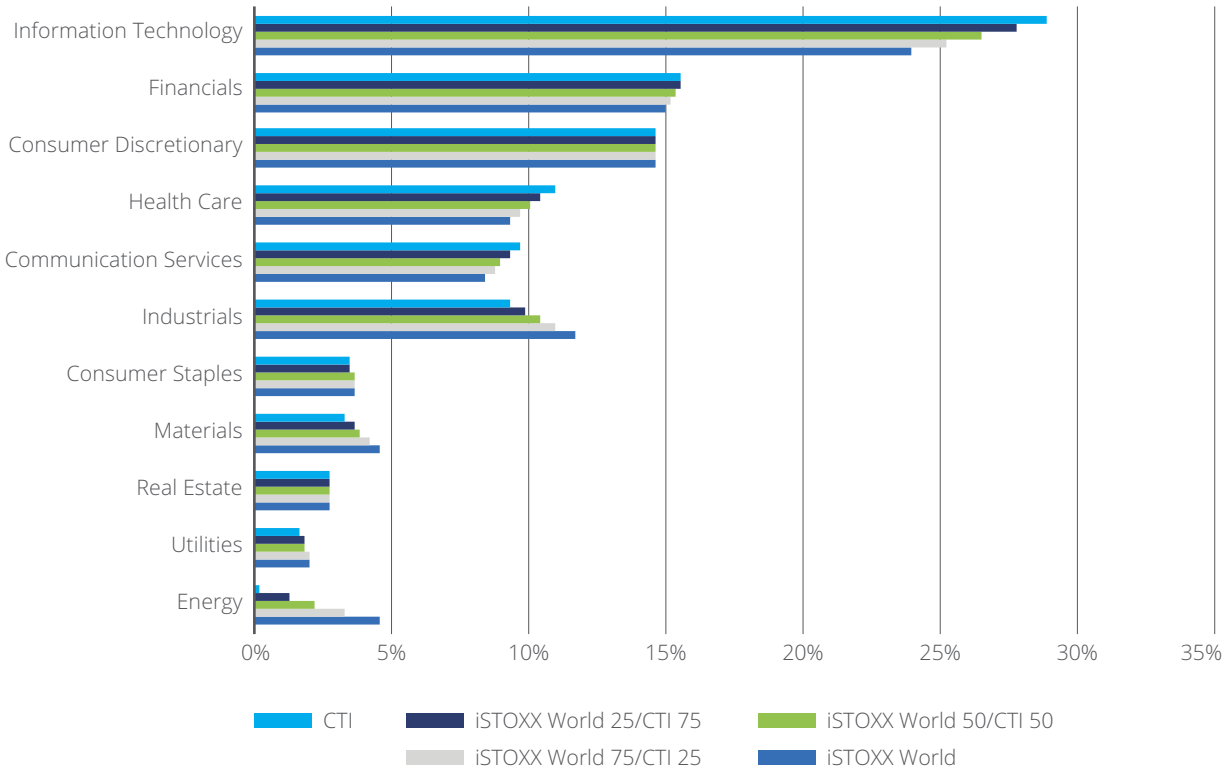
Energy was the third-lowest contributor to World Index risk, after Utilities and Real Estate. In the CTI, Energy's contribution was close to zero due to its low weight in that index.

Figure 6: Sector weights (sorted from largest to smallest in the World Index).



Source: WTW, Qontigo.

Figure 7: Sector contribution to benchmark risk (sorted from largest to smallest in the CTI).



Source: WTW, Qontigo.

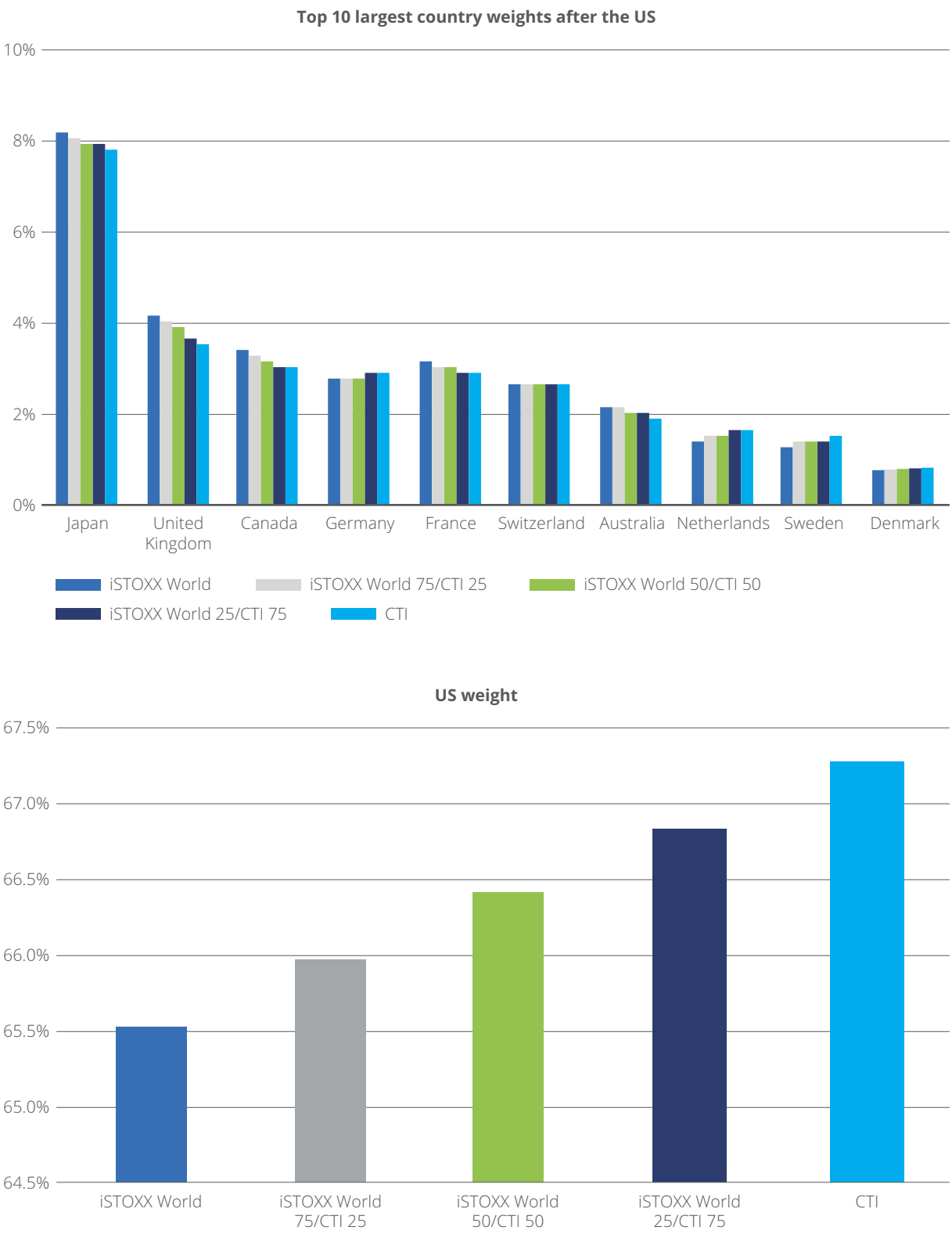
5.5 The United States has a larger weight in the CTI

US companies comprise a large portion of the CTI, as is also the case with the broader equity market. However, the US weight increased by about two percentage points with the move from the World Index to the CTI, rising from 65% to 67% (Figure 8). This was due in part to the fact that the largest Technology, Financial and Health Care companies are incorporated in the United States.

We also observed slightly lower weights in Japan, the United Kingdom, Canada, France and Australia, although these five were still in the top 10 largest countries in the CTI after the US. By contrast, the weights for Germany, the Netherlands, Sweden and Denmark increased in the CTI, with Germany's weight surpassing that of France.

The country weight differences between the World Index and the CTI were muted overall. This was due in part to the CTI's embedded methodology elements, which serve to prevent large country deviations compared to the broad market.

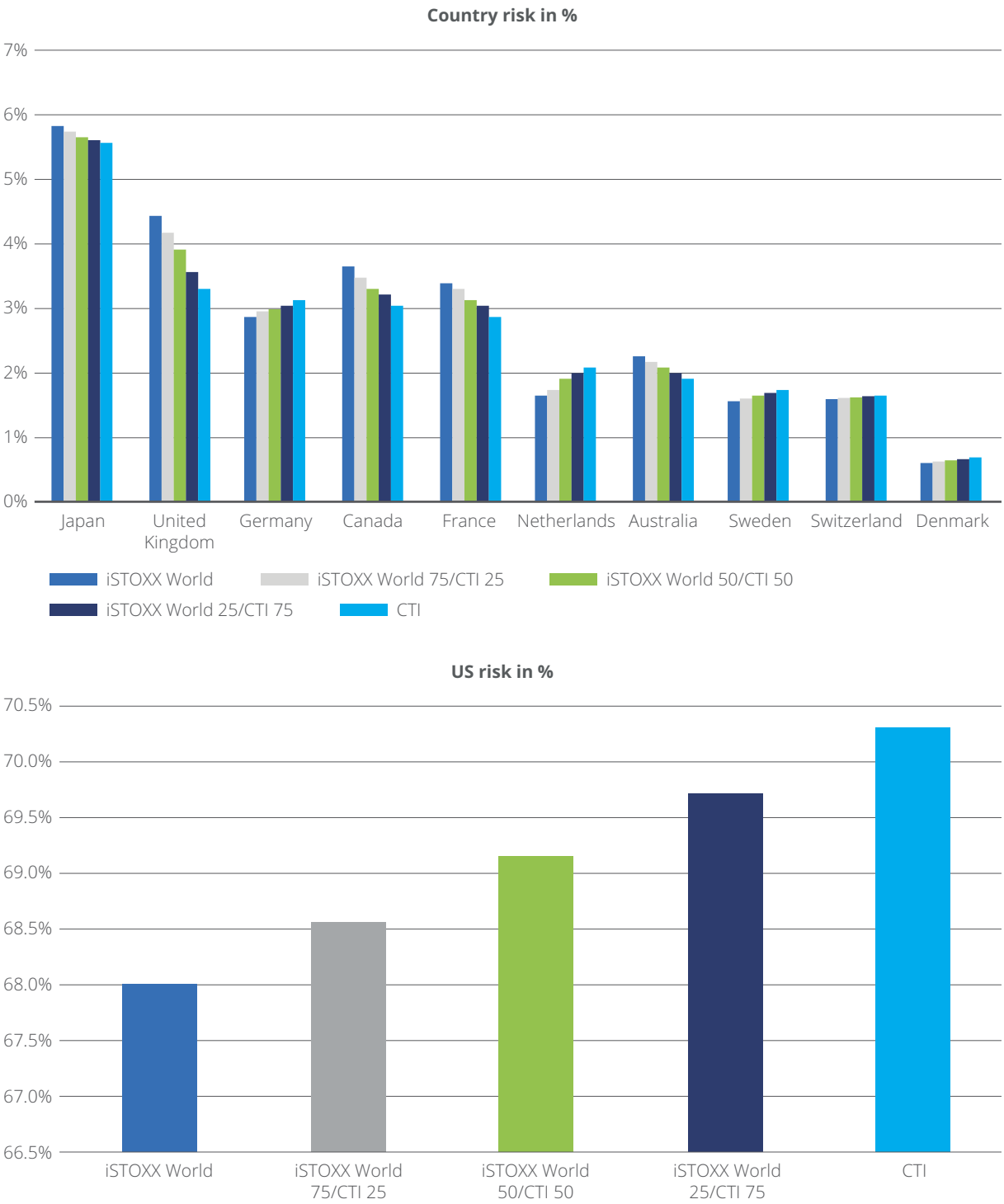
Figure 8: Country weights (sorted from largest to smallest in the CTI).



Source: WTW, Qontigo.

In general, countries' contributions to risk were proportional to their weight in the index. However, the contribution made by the US to the CTI's risk exceeded its weight (something that we observed in the broad market index as well), while Japan and Switzerland's contributions were lower than their weights would otherwise suggest (Figure 9). Once again, the differences were quite small.

Figure 9: Country contribution to benchmark risk (sorted from largest to smallest in the CTI).



Source: WTW, Qontigo.

6. Conclusion

Investors interested in incorporating climate considerations into their global equity investments could gain an advantage from investing in the CTI without incurring higher total risk than the broad market (as represented by the World Index). Although the CTI did see some differences in risk characteristics when compared to the broad index, these were small. In addition, the CTI had a better profile in terms of sustainability metrics.

The CTI had slightly higher stock-specific risk; this may result in higher returns, particularly if the stocks in the CTI outperform the broad market during the transition to a net-zero economy. Market risk was similar, but the CTI saw a higher diversification benefit from style factors. Style factor exposures for the World Index and the CTI were directionally similar for most factors with only a few exceptions. The CTI held larger, more profitable, more liquid and more growth-oriented stocks than the broad index, but again exposure differences were relatively small.

Overall, the country and sector weight differences between the World Index and the CTI were muted. This was due in part to the CTI's embedded methodology elements, which serve to prevent large country and sector deviations from the broad market. However, the CTI had higher weights in sectors that could potentially benefit from a net-zero economy, such as Information Technology and Financials, and much lower weights in commodity-sensitive industries such as Energy and Industrials. The CTI had larger weights in the United States and a few European countries.

For these reasons, we believe that the CTI is a good substitute for a broad developed market index in any equity allocation for investors looking to manage climate transition risk, and also offers the added benefit of better sustainability characteristics than the broader market.

7. Contacts & Information

Learn more about how Qontigo can help you better manage risk and enhance your investment process.
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