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# A building block approach to sustainability portfolios

**Melissa R. Brown**, CFA, Global Head of Applied Research, Qontigo

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## 1. Introduction

ESG Leaders, low carbon emissions and the UN Sustainable Development Goals (SDGs) are three key data and information sources for responsible investing that are clearly distinct but not mutually exclusive. Investment products that address ESG and/or Low Carbon have proliferated although at the same time, investors remain concerned that “doing good” may not translate into “doing well”, and they may be giving up return by eliminating large swaths of the investible market. Reasonably, they hope to focus on these issues of sustainability without taking on too much risk relative to the broad equity market and thereby give up returns.

APG has partnered with Qontigo to address the challenge of providing sustainability alternatives, the iSTOXX APG World Responsible Indices, that meet a variety of specific investor preferences and allow for company engagement, while maintaining a low level of active risk versus a global benchmark. This is the first set of indices to incorporate Sustainable Development Goals (SDGs) as defined by the Sustainable Development Investments Asset Owner Platform (SDI AOP). We have taken a layered, building block approach to creating our family of Responsible Investment Indices and will show that 1) adding restrictions does not necessarily add risk even when they enhance sustainability and 2) one can create a responsible investing portfolio without taking on a lot of risk relative to the market.

The methodology starts with a global developed market STOXX index and employs Axioma portfolio construction tools to build low-active-risk portfolios that meet sustainability criteria that will be described below. Each building block adds value by improving the desired exposure without adding much risk, and the end result, a portfolio that targets more-favorable ESG and SDG scores, along with low carbon emissions, has about the same risk as portfolios that target just one or two of those components.

For those not familiar with the UN Sustainable Development Goals, here is a short description: sdgs.un.org/goals. The SDI AOP defines Sustainable Development Investments as those solutions that contribute to the UN SDGs and divides companies into three categories. It is meant to be a “positive” screen (that is, reward the “good” actors”): “Majority” (where 50% or more of the company revenues meet one or more of the goals laid out by the UN, “Decisive”, with 10%-50% of revenue meeting goals, and “non-SDI”, with less than 10%.

The Responsible Investment Index data for Carbon Emissions are considered in terms of tons of $CO_2$ equivalents and ESG criteria are determined by APG’s proprietary approach.

## 2. Index Methodology

We start with the iSTOXX World-A Index, a broad-based, capitalization-weighted index that includes about 85% of the capitalization of global developed markets. Creating the rest of the building blocks that lead to the final portfolio uses the Axioma Portfolio Optimizer™. The benefit of the optimizer is that it can consider thousands or millions of stock combinations quickly and tell us which blend minimizes active risk relative to the parent benchmark, World-A, while giving us our desired exposures. In other words, we know we are ending up with a suitable level of sustainability per unit of risk.

The next step — creating the iSTOXX APG World-X Index — is to eliminate from the potential investment universe names that fail APG’s product involvement screen[1]. We then optimize that universe to minimize

[1] This screen excludes companies producing controversial weapons and tobacco.

tracking error to the World-A Index[2]. The third building block, creating the iSTOXX APG World Responsible Index, starts with World-X Index but further restricts the potential investment universe to only stocks APG considers to be "*ESG Leaders*", and again minimizes active risk versus the iSTOXX World-A Index. Adding another layer, a goal to reduce carbon emissions relative to World-A Index[3] does not significantly increase risk, nor does seeking an SDG exposure that is higher than that of the parent index. And when the objective of the final portfolio is to minimize tracking error to the World-A Index, reduce emissions, increase exposure to Sustainable Development Goals all the while selecting from a universe of ESG Leaders, predicted tracking error remains low, risk exposures (e.g. to risk-model style factors) are also low, and most of the active risk that does result from the optimization is stock specific, as we would expect by eliminating certain names while overweighting others. We view this as a win-win for the investor, who should realize returns similar to the market while investing more responsibly.

### Observations about the risk in these indices:

1. The ESG exclusions in World-X Index can be achieved with less than 20 basis points of tracking error. Limiting the universe to ESG Leaders does increase the active risk by reducing the names in the selection universe by roughly 15%[4], but meeting subsequent emissions and SDG objectives does not significantly increase active risk.

2. Most of the active risk — versus both the World-A Index and the prior building block — is stock specific, an intuitive result given that the focus for portfolio inclusion is the characteristics of individual companies. In Exhibit 2 we show the breakdown of active risk for each building block index versus the World-A Index as well as versus the prior building block. In addition, style exposures are tightly constrained, so they will not add to the risk. Industry constraints, in contrast, are wider, and therefore most of the rest of the risk is industry specific. Note that the additional risk as we go down the layers is extremely small (less than 5 basis points for all but the World Responsible Index vs. the World-X Index).

[2] Note that a number of other restrictions are applied to each index, including constraints on ICB industries, countries, tradability and caps in individual assets and issuers. Style factor exposures are tightly constrained as well. See the index description for more detail.

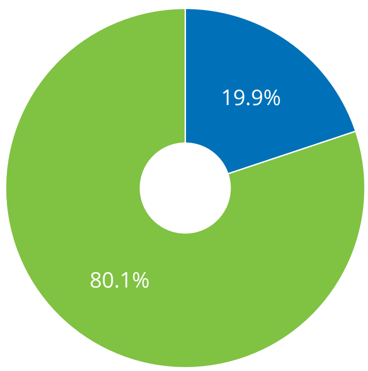
[3] The Low Carbon and SDI indices are both building blocks of the process, but in this step they are not yet building blocks for each other.

[4] This will vary over time.

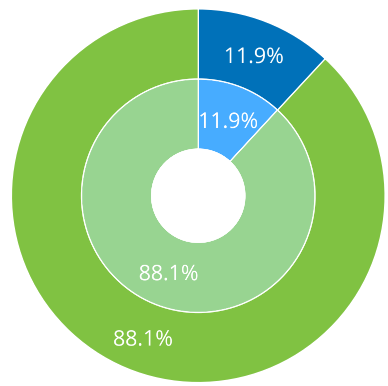
**Exhibit 1**. Contribution to Active Risk, Factor vs. Specific

| | | |
|---|---|---|
| SPECIFIC | FACTOR | Versus iSTOXX World-A Index |
| SPECIFIC | FACTOR | Versus iSTOXX APG World-X Index |

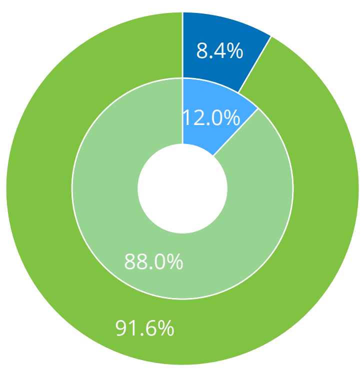
iSTOXX APG World-X Index



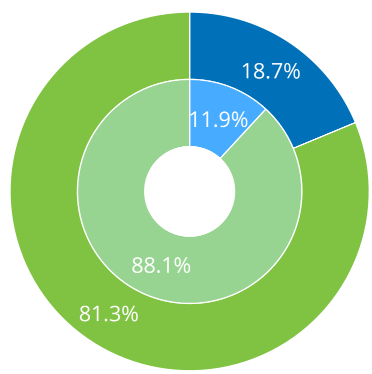

iSTOXX APG World Responsible Index



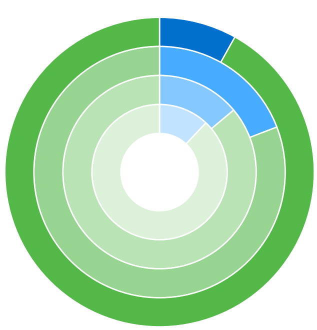

iSTOXX APG World Responsible Low-Carbon Index




iSTOXX APG World Responsible SDI Index




iSTOXX APG World Responsible Low-Carbon SDI Index

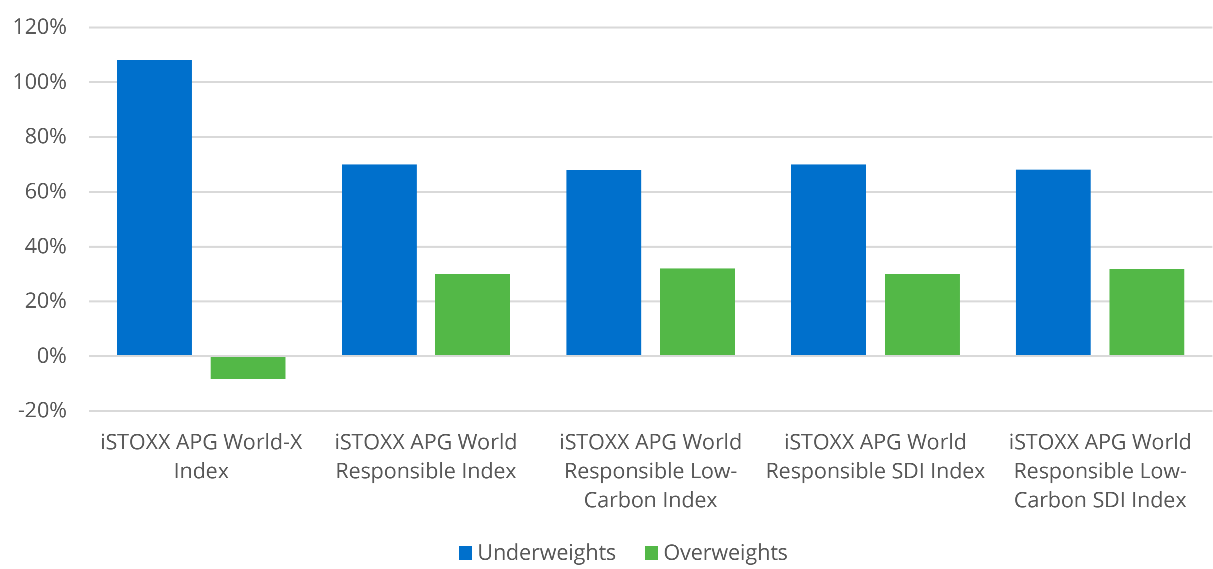


| SPECIFIC | FACTOR | VS. |
|---|---|---|
| 91.9% | 8.1% | iSTOXX World-A Index |
| 80.8% | 19.2% | iSTOXX APG World-X Index |
| 86.1% | 13.9% | iSTOXX APG World Responsible Low-Carbon Index |
| 88.0% | 12% | iSTOXX APG World Responsible SDI Index |

Source: Qontigo.

3. The stocks we want to avoid, those that rank poorly on our ESG, SDG and Carbon Emissions criteria, are the biggest contributors to the active risk (versus the World-A Index) of each of the building block indices (Exhibit 3). For the World-X Index they account for more than 100% of the risk, meaning that the overweights in aggregate diversify the risk. For the other indices the overweights account for approximately 30% of the risk, with the rest coming from the underweights, which, given their ESG, SDG and/or carbon emission profile, would intuitively be riskier.

**Exhibit 2**. Contribution to Active Risk, Underweights vs. Overweights




Source: Qontigo.

4. We have shown that active risk versus the World-A Index is relatively low, mainly stock specific, and driven largely by the stocks we want to avoid. Rather than focus on return as the other side of this coin, we want to make sure that the indices improve upon the SDG and Emissions profiles. And they do. In Exhibit 3 we observe the following:

   > World-A Index has the highest emissions and the lowest SDG score among all the building blocks.

   > Eliminating the worst ESG offenders improves the SDG profile of World-X Index, but it actually leads to a slightly higher level of carbon emissions.

   > Tilting toward the ESG Leaders (World Responsible, or "R") goes a long way to improving both the emissions and SDG profiles.

   > Of course, adding the emissions constraint reduces emissions even further, but does nothing to improve the SDG profile, and adding the SDG goal does not lead to an improvement in emissions.

   > Finally, and by design, the Low Carbon-SDI Index yields the most attractive combination of emissions and SDG, but as mentioned earlier, without an increase in active risk.

**Exhibit 3**. Carbon Emissions vs. SDGs


| | | | |
|---|---|---|---|
| A | iSTOXX World-A Index | LC | iSTOXX APG World Responsible Low-Carbon Index |
| X | iSTOXX APG World-X Index | SD | iSTOXX APG World Responsible SDI Index |
| R | iSTOXX APG World Responsible Index | LCSD | iSTOXX APG World Responsible Low-Carbon SDI Index |

Source: Qontigo.

5. Finally, each building block improves on the SDI exposures when compared with the prior block. Of course, the biggest improvement in the distribution of weight toward positive SDI names (and away from non-SDI names) can be seen in the explicit SDI-tilted indices, but even the others show a better SDI profile when compared with the World-A Index (Exhibit 4).

**Exhibit 4.** Percent of Index in Each SDI Category, and Percent Difference vs. iSTOXX World-A Index

| | WEIGHT | | | |
|---|---|---|---|---|
| **Index** | **SDI Majority** | **SDI Decisive** | **Majority + Decisive** | **Non-SDI** |
| > iSTOXX World-A Index (benchmark) | 10.5% | 7.5% | 18.0% | 82.0% |
| > iSTOXX APG World-X Index | 10.8% | 7.6% | 18.4% | 81.3% |
| > iSTOXX APG World Responsible Index | 12.5% | 8.0% | 20.5% | 79.5% |
| > iSTOXX APG World Responsible Low-Carbon Index | 12.6% | 7.9% | 20.5% | 79.5% |
| > iSTOXX APG World Responsible SDI Index | 13.7% | 8.3% | 22.0% | 78.0% |
| > iSTOXX APG World Responsible Low-Carbon SDI Index | 13.7% | 8.3% | 22.0% | 78.0% |
| **Improvement vs. iSTOXX World A Index** | | | | |
| > iSTOXX APG World-X Index | 2.9% | 1.9% | 2.5% | -0.9% |
| > iSTOXX APG World Responsible Index | 19.0% | 6.6% | 13.9% | -3.0% |
| > iSTOXX APG World Responsible Low-Carbon Index | 19.5% | 5.9% | 13.8% | -3.0% |
| > iSTOXX APG World Responsible SDI Index | 30.0% | 11.5% | 22.3% | -4.9% |
| > iSTOXX APG World Responsible Low-Carbon SDI Index | 30.1% | 11.2% | 22.2% | -4.9% |

## 3. Conclusion

Better ESG profiles, lower carbon emissions and attainment of the UN Sustainable Development Goals all sound like theoretically “nice to haves” in an investment portfolio. However, some investors balk at the potential of deviating too much from the market and sacrificing returns in the process.

We have shown that portfolios can be built that provide more attractive sustainability characteristics without taking on too much risk, and that even layering on successive portfolio tilts does not add significant risk along the way. An optimizer is an essential tool in achieving this goal, as it finds the most efficient portfolio (sustainability per unit of risk) quickly and easily.

## Contacts & Information

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


### Europe

**Frankfurt**
Mergenthalerallee 61
65760 Eschborn, Germany
+49 69 2 11 0

**Geneva**
Rue du Rhone 69, 2nd Floor
1207 Geneva, Switzerland
+41 22 700 83 00

**London**
11 Westferry Circus
London E14 4HE, United Kingdom
+44 20 7862 7680

**Paris**
19 Boulevard Malesherbes
75008, Paris, France
+33 1 55 27 38 38

**Prague**
Futurama Business Park Building F
Sokolovska 662/136b
186 00 Prague 8, Czech Republic

**Zug**
Theilerstrasse 1A
6300 Zug, Switzerland
+41 43 430 71 60

### Americas

**Atlanta**
400 Northridge Road, Suite 550
Atlanta, GA 30350
+1 678 672 5400

**Buenos Aires**
Corrientes Avenue 800, 33rd Floor
Office 101
Buenos Aires C1043AAU, Argentina
+54 11 5983 0320

**Chicago**
1 South Wacker Drive, Suite 200
Chicago, IL 60606
+1 224 324 4279

**New York**
17 State Street, Suite 2700
New York, NY 10004 USA
+1 212 991 4500

**San Francisco**
201 Mission Street, Suite #2150
San Francisco, CA 94105
+1 415 614 4170

### Asia Pacific

**Hong Kong**
28/F LHT Tower
31 Queen's Road Central
Hong Kong
+852 8203 2790

**Singapore**
80 Robinson Road, #02-00
Singapore 068898, Singapore
+852 8203 2790

**Sydney**
9 Castlereagh Street, Level 17
Sydney, NSW 2000, Australia
+61 2 8074 3104

**Tokyo**
27F Marunouchi Kitaguchi Building,
1-6-5 Marunouchi Chiyoda-ku
Tokyo 100-0005, Japan
+81 3 4578 6688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