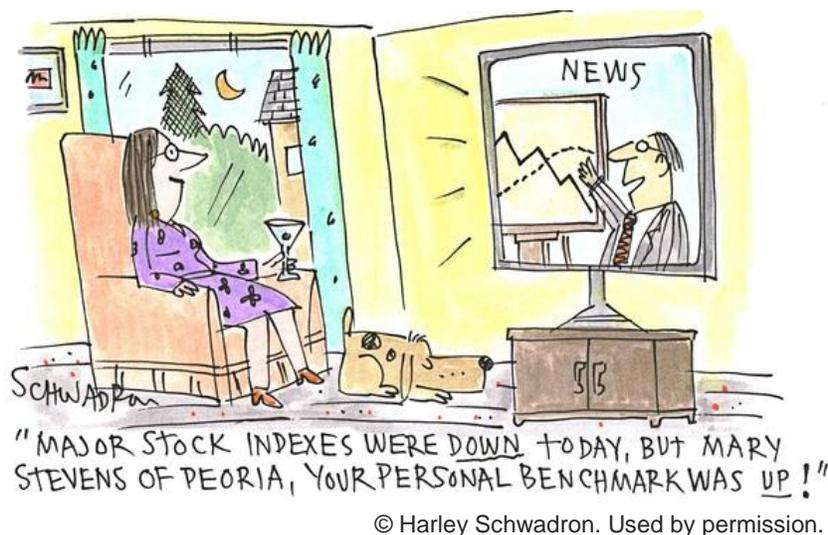


## Mitigating the Unnecessary Risk of Specialized Indexes

### KEY TAKE-AWAYS

- While the proliferation of specialized indexes and ETFs benefits their providers through licensing fees, the value proposition for investors is less clear.
- A specialized index may contain unnecessary risk as a result of sub-optimal implementation.
- Unnecessary risk in specialized strategies can be mitigated by factor-based optimization, leaving investors with streamlined portfolios that reflect their personal goals and ethical beliefs.

A rapidly growing assortment of specialized financial indexes has emerged since the turn of the millennium. Because they are closer to systematic strategies than to traditional benchmarks, these specialized indexes give investors easy access to a range of investment themes. However, they do not necessarily serve as a useful basis for performance measurement.



As an alternative to specialized indexes and ETFs, separate accounts using factor-based optimization can provide a cost-effective and customizable option. By matching risk profiles, a factor-based optimizer finds effective substitutes for securities that are excluded or underweighted by the specialized index rules. This avoids the proliferation of benchmarks and their associated fees, while facilitating control of risk and turnover. It provides a tight link between systematic strategies and their benchmarks, as well as a consistent basis for performance measurement.

In Table 1 we show how factor-based optimization can lower tracking error—the risk of a portfolio relative to a standard benchmark—in four examples. Lowering tracking error is an important practice for an investor who believes that the best long-term financial performance is achieved through broad market diversification.<sup>1</sup> At low levels, say less than 1.0%, tracking error adds very little incremental portfolio risk, but it can make investors uneasy if it means they'll track a benchmark with less precision.

The first three examples concern investors who want their portfolios to reflect both financial goals and ethical beliefs.<sup>2</sup> Advocacy groups such as Climate Tracker and As You Sow, and faith-based organizations such as the United States Conference of Catholic Bishops, provide guidelines for the exclusion of companies whose practices are environmentally unsound, in violation of human rights, or

inconsistent with religious principles.<sup>3</sup> We used these guidelines to construct sample portfolios, first by simply excluding unwanted securities from a standard benchmark, and then by reweighting in accordance with a factor-based optimization that minimized tracking error.

**Table 1: Tracking Error and Unnecessary Risk for Simple Exclusion and Tilt Portfolios  
Alongside their Optimized Counterparts \***

Portfolio	Benchmark	Tracking Error		
		Simple Exclusion or Tilt	Optimized Portfolio	Unnecessary Risk
Carbon Reserve Free	Russell 3000	0.81%	0.36%	0.45%
Human Rights	Russell 3000	0.76%	0.44%	0.32%
Catholic Conservative	MSCI ACWI	0.80%	0.55%	0.25%
Value Tilt	Russell 1000	2.78%	0.79%	1.99%

\*As of December 15, 2015.

Table 1 shows the tracking error of each portfolio against its benchmark. The “Unnecessary Risk” column shows the difference in tracking error between the naïve implementation of a strategy (simply excluding certain stocks) and its optimized counterpart with the exact same screen. Unnecessary risk ranges from 0.25% to 0.45% for the exclusion portfolios.

Our fourth example analyzes a value tilt rather than an ethical screen. We compare a specialized factor-tilt index—the Russell 1000 Value Index—to a tilt optimized to minimize tracking error to the Russell 1000 Index while matching the essential exposures in the Russell 1000 Value Index. Unnecessary risk is almost 2.0% for the value tilt. The sources of unnecessary risk vary from case to case, but they can generally be traced to unintended bets of some sort.

What is the motivation for all these new indexes, given that they introduce so much unnecessary risk? While specialized indexes and ETFs have broadened the opportunity set for small investors, in a 2012 study researchers at Vanguard questioned the motivation behind the proliferation of specialized indexes.<sup>4</sup>

Our analysis suggests that new index creation may be increasingly linked to the marketing, development, and differentiation of new ETFs, rather than being an approach of simply providing “unbiased” investable benchmarks for stock and bond market segments.

Both index providers and ETF sponsors benefit from monetizing specialized indexes through licensing fees. According to the Investment Company Institute, there were 1,411 ETFs available at the end of 2014.<sup>5</sup> Is this abundance a boon to investors or is it a glut of inefficient, opaque options?

For investors with substantial portfolios, say \$1 million and up, improvements in portfolio construction and trading technology as well as lower trading costs are making customized portfolios more practical, thus reducing the need to bear unnecessary tracking error. For investors with smaller portfolios, ETFs tracking specialized benchmarks may provide the only way to achieve certain values or strategies, but those investors still need to be aware of how much unnecessary tracking error those indexes can introduce. As investors demand transparent, efficient portfolios that accurately reflect their financial goals and personal convictions, the historical roles of an index as a representation of an investable universe and as a benchmark for performance may be restored.

## References

Joel Dickson, Sachin Padmawar, and Sarah Hammer. "Joined at the hip: ETF and index development." Vanguard White Paper, 2012.

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Investment Company Institute. "2015 Investment Company Fact Book," Chapter 3, Figure 3.8.

[http://www.icifactbook.org/fb\\_ch3.html](http://www.icifactbook.org/fb_ch3.html)

## Endnotes

<sup>1</sup> A few specialized index providers are beginning to optimize to broadly diversified benchmarks, although the practice is inconsistent. For example, the MSCI USA ESG Select Indexes are optimized to a target tracking error against a parent index, while the MSCI ACWI Ex Fossil Fuels Index is not optimized.

<sup>2</sup> The combination of expressive utility (the benefit investors accrue by incorporating their personal convictions in their portfolios) with investment utility is discussed in Geddes (2012).

<sup>3</sup> Investment guidelines developed by the United States Conference of Catholic Bishops exclude assets involved with adult entertainment, embryonic stem cell or fetal tissue research, abortion or contraceptive issues, or nuclear weapons. Also excluded are companies involved with landmines or cluster munitions as well as companies that derive more than 50% of their revenue from other conventional weapons.

<sup>4</sup> Dickson et al. (2012).

<sup>5</sup> Investment Company Institute. “2015 Investment Company Fact Book,” Chapter 3, Figure 3.8.  
[http://www.icifactbook.org/fb\\_ch3.html](http://www.icifactbook.org/fb_ch3.html)

## Disclosure

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With respect to the description of any investment strategies, simulations, or investment recommendations, we cannot provide any assurances that they will perform as expected and as described in our materials. Past performance is not indicative of future results. Every investment program has the potential for loss as well as gain.

The **Russell 1000 Index** measures the performance of 1,000 of the largest US companies, representing more than 90% of the total market capitalization of the investable US equity market. The Russell 1000 Index serves as a bellwether index for large-cap investing. It is completely reconstituted annually to ensure that new and growing equities are reflected.

The **Russell 1000 Value Index** ranks Russell 1000 Index companies by book-to-price ratios, two-year growth prospects, and five-year sale-of-shares historical growth to determine “composite value scores” (CVS). Per Russell, “Stocks are then ranked by their CVS, and a probability algorithm is applied to the CVS distribution to assign growth and value weights to each stock” (50% to the two growth factors and 50% to the value factor). Stocks with high value scores are weighted more heavily in the Russell 1000 Value Index, but all stocks are included.

The **Russell 3000 Index** measures the performance of the largest 3,000 US companies representing approximately 98% of the investable US equity market. The Russell 3000 Index is constructed to provide a comprehensive, unbiased, and stable barometer of the broad market and is completely reconstituted annually to ensure that new and growing equities are reflected.

The **MSCI ACWI Index** is a free-float-adjusted market capitalization–weighted index that is designed to measure the equity market performance of developed and emerging markets. The MSCI ACWI consists of 46 country indexes: 23 developed and 23 emerging market country indexes. The developed market country indexes are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong, Ireland, Israel, Italy, Japan, the Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, the United Kingdom, and the United States. The emerging market country indexes are Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, Malaysia, Mexico, Peru, the Philippines, Poland, Qatar, Russia, South Africa, South Korea, Taiwan, Thailand, Turkey, and United Arab Emirates. Net of foreign withholding taxes; dividends are reinvested.