

Creating the Optimal Non-Profit Portfolio: Tracking Error, Information Ratio, and Diversification

TIFF Investment Team - August 2018

Creating an optimal portfolio for an endowed non-profit institution is difficult. For asset allocators or outsourced CIO (OCIO) firms such as TIFF, we would list a few critical tasks as necessary to achieving success. The first is defining a policy portfolio, or benchmark, that enables the asset manager to outperform an endowed non-profit's long-term annualized return goal, such as CPI + 5%. The second task is finding and partnering with managers who can add excess return or "alpha" over reasonable time frames. The final task is combining these alpha-generating managers in a way that produces sufficient return streams without taking undue risk. Employing a benchmark targeting returns that are too low to achieve the CPI + 5% objective or so high that they introduce excess volatility into portfolios can result in long-term underperformance. Such lagging performance can also result from partnering with managers who don't add meaningful alpha, net of fees, or from combining good managers in a sub-optimal fashion. The best portfolio managers go "three for three" on these vital tasks as they work to support your spending policies and foster effectiveness in reaching your endowment or foundation goals.

Benchmarking. As most of TIFF's members (our clients) are aware, the policy portfolio TIFF employs for our comprehensive portfolios is the Constructed Index (CI). Every year we thoroughly review the CI in search of the asset allocation mix that we believe will give us the best chance to produce returns of at least CPI + 5% per annum across most market cycles. We work directly with TIFF's board members — most of them university and foundation CIOs — to review different potential allocation mixes in search of the one that we all believe is most likely to yield success. Generally speaking, the CI needs to have enough risk (primarily exposure to equities) to be able to achieve our return goal while also maintaining enough defense or ballast to enable the portfolios to survive — and to opportunistically rebalance into equities — during meaningful equity market pullbacks. In good times, the non-equity assets that provide the ballast generally don't produce returns as high as equities, but they don't go down as much in tough times either. Diversifying the portfolio in this manner helps non-profits in two ways. First, during major market pullbacks, it enables your institutions to continue drawing on the endowment portfolio without selling equity positions at some fraction of their past and hopefully future value. Second, it enables us to rebalance into equities (i.e., "buy low") during periods of market stress. When this rebalancing is done correctly, and new equity investments are made at a fraction of their future valuations, the added value will accrue to the portfolio when equity values rebound in the future. (When that day comes, many investors will tend to forget that the reason they enjoyed the return enhancement was that back when the market stress arrived the portfolio contained these less-volatile, lower-return assets that enabled us to rebalance into equities. The major sell-off of 2008 and major rebound of 2009 is a prime example.) Finally, having these volatility-dampening assets often helps everyone in the non-profit investment community sleep better during equity market pullbacks, and that is worth something all by itself!

Manager Selection. The second and more difficult task of an allocator is to identify and partner with great managers who can produce meaningful alpha, net of fees, over reasonable time periods. We believe this has long been one of TIFF's strengths. Many of our members invested in our primary comprehensive portfolios have access to manager "value added" tables that support this conclusion. We're pleased with the 5- and 10-year annualized results and invite members interested in a detailed look at the numbers to contact us.

Given the widely discussed fact that active managers, in general, have had difficulty outperforming their passive benchmarks over the last several years, many of our members have asked us how our managers seem to have collectively bucked the trend over time. The first step in assembling an above-average manager roster is to develop a deep and wide process of sourcing. The sourcing process starts as a data mining and analysis exercise where we draw from several different databases and technology platforms that contain substantial information about a broad range of equity managers and provide analysis tools for key sets of data. Next, we call upon our team's experience and network of contacts, often tapping current and past managers and colleagues for ideas. Finally, we are not shy about soliciting our Board for ideas. Leads can come from anywhere. The key is to cast a very wide, and somewhat unique, net and then have the discipline and resources to ferret out and partner with the most promising alpha-generating managers.

The next question we often get is, "What are you looking for in a manager?" We search the globe for the best managers we can find. This idea of "the globe" is important. In our opinion, some markets are much more efficient than others and therefore make the manager's task of producing meaningful, long-term outperformance much more difficult. Other markets are less efficient and therefore provide investors with an easier path to creating alpha. The bookend examples today might be the US, which is dominated by institutional investors and very efficient, and China, where approximately 75% of all trading is retail and markets are much less efficient. All things being equal, we would prefer to hire managers in areas where we believe competition is more limited and their edge is both greater and more sustainable.

Turning to the question of what it takes to become a TIFF manager, we are searching in particular for three characteristics. First, we want to find a manager with what we believe is a sustainable competitive advantage. That may include a deeper and more experienced research team, a career in industry that provides superior contacts and insights, a more comprehensive investment process, better technology, tighter risk controls, more discipline, etc. If we do not believe a manager possesses some advantage that can help generate above-average returns, we do not include them in our portfolios.

Next, we look for an alignment of interests between the manager and TIFF, and ultimately our members. Important factors in this evaluation include fair fees (does the manager get rich if our portfolios underperform?), ownership structure, willingness to cap growth of assets (we view excessive assets under management as an enemy of alpha), a manager's compensation arrangement (does the portfolio manager share rewards with the firm's staff?), and willingness to share insights and underlying market positions with us. If a manager's overriding goal is getting rich, we are very unlikely to partner with them.

Finally, we want to invest in strategies that make our overall portfolios better. We may be filling a need for exposure to a particular geography or industrial sector, bringing more balance to our exposures to growth and value stocks, offsetting other “factor” exposures such as capitalization, or just upgrading an existing manager with someone we believe is more exceptional. This “portfolio fit” criterion will change as markets and existing managers change. For example, after adding exposure to China over the last couple of years, we find that our global managers are also tilting toward China more as well. We are therefore very unlikely to add another China-focused manager at this time. We would, however, be willing to add a new manager in India, for example, as this would give us a new return stream of potential alpha unique from our China managers.

The Manager Lineup. The third task in creating an optimal portfolio is figuring out the best combination of managers to achieve the highest possible return with an acceptable level of risk. In this discussion, we focus on the equity allocation within our comprehensive portfolios because it is the most volatile and highest-return asset category over most time periods, and it also represents the largest component of our Constructed Index. The other components of the portfolios are also optimized in a similar way but with a focus on holding value during equity downdrafts.

First some background. Any manager who invests differently from their benchmark index is likely to generate a return stream that is different from the benchmark return — maybe better, maybe worse. This difference is called excess return — hopefully positive but sometimes negative. The amount by which returns vary over time, measured as their standard deviation (or volatility), is called tracking error (TE). Contrary to popular belief, TE is not necessarily good or bad; it is just a measurement of the volatility of the return difference resulting from active management. Take a look at the example in the table below. If a manager’s benchmark was always up 0% one year and 15% the next, and the manager’s own return was always up 10% a year, then the TE would be the standard deviation of the differences in returns, equal to 7.5%. The TE would be the same if the return streams were reversed.

A manager’s excess return divided by the manager’s TE produces their information ratio (IR), an important metric that we’ll discuss shortly. In the example, our manager outperformed the benchmark index by 2.8%, on an annualized basis, with a tracking error of 7.5%. In this case, the manager’s IR would be $2.8\% / 7.5\% = 0.37$.

Calculating Tracking Error and Information Ratio

Year	Benchmark Return	Manager Return	Excess Return	
1	0%	10%	10%	
2	15%	10%	-5%	
3	0%	10%	10%	
4	15%	10%	-5%	
5	0%	10%	10%	
6	15%	10%	-5%	
⋮	⋮	⋮	⋮	
49	0%	10%	10%	
50	15%	10%	-5%	
Annualized Return	7.2%	10.0%	2.8%	Annualized Manager Excess Return (Alpha)

Annualized Tracking Error (TE)	~7.5%	= Standard Deviation of Excess Return
Information Ratio (IR)	~0.37	= Alpha / TE

Generally speaking, investors want to be rewarded for accepting the risks inherent in seeking superior returns that are different from benchmark indices (i.e., have high TEs), and therefore have a preference for managers with high IRs. All else being equal, we should prefer high excess returns, low TEs, and high IRs. In general, good managers have produced IRs in the 0.3 to 0.5 range. More recently, IRs have been above average because we have been in a low-volatility environment, which tends to reduce the denominator (TE) and results in higher IRs for almost any excess return. For planning purposes, we assume that over time IRs will move back toward their historical range.

As a global allocator, we employ managers from anywhere in the world, using many different approaches and competing against many different benchmarks, ones we and the manager agree upon. At the end of the day, we aggregate all these equity managers' results into one return stream, which must, net of fees, best the MSCI All Country World Index (ACWI) return, which we have set as our Constructed Index equity benchmark. Although we expect our managers to generate very different returns from the ACWI individually, our job is to make sure they are collectively positioned so that the equity portfolio has an optimal chance to outperform ACWI. Optimal portfolio construction results from combining a group of managers in a way that generates excess returns and high IRs.

One thing that helps in this effort is choosing very different manager betas, or benchmark indices — think US small cap value vs. European all cap growth. Beta in this case represents the benchmark return of an individual manager, whereas alpha is the manager's incremental return above or below their benchmark. Some managers will have benchmarks that underperform ACWI over a given time period while others' benchmarks outperform ACWI. In this sense, we aren't just trying to pick different colored M&M's to make a portfolio. Rather, we are picking from many different food groups to create a portfolio that we think has the best chance to add value in multiple different market environments. Our ability to meld multiple unique strategies makes it easier to include managers that do well in very different environments and collectively lower our TE vs. ACWI.

If our manager excess return estimates are about right, we end up with a portfolio that has below-average TE and above-average IR. This is a good thing by itself, but it also opens the door to even better potential performance. If $IR = \text{excess return} / TE$, then simple algebra allows us to see an important corollary: $TE \times IR = \text{excess return}$. If we have room to increase our tracking error without making the portfolio too risky, then we have the leeway to further increase the concentration of our investments in our highest-expected-alpha managers. Assuming a constant IR, if we can increase our TE, then we can increase our excess return. If we increase our TE by taking capital from lower-conviction managers, or those whose expected alpha is lower, and allocating it to higher-conviction managers, or those whose expected alpha is higher, then we should be positioned to increase overall returns.

The work we have done over the last couple of years to further diversify TIFF's comprehensive portfolios may have opened an opportunity to improve performance by concentrating more capital with our highest-expected-alpha managers. Our risk team is leading our research in an iterative, quantitative manner. We are doing a lot of math to make sure that we have considered all the possible downsides as well as the impact on TE of further concentrating capital. We will move gradually in this process but wanted to share with you in this paper this next phase of our efforts to generate CPI +5% returns over the long run, enabling your endowment or foundation to live in perpetuity and help meet the important needs for which it was established.

If we can marry TIFF's history of selecting alpha-generating managers with robust quantitative methods for building portfolios (by combining managers with high alpha potential and information ratios, along with tolerably high tracking errors), we believe we will have a greater potential for producing higher returns without assuming undue risks. This third step in the portfolio optimization process is not as important as having an appropriate policy portfolio and finding and partnering with the very best alpha-generating managers possible. It is important, however, to know how much capital you can prudently concentrate in your best managers' hands. To the extent that we are successful in optimizing capital allocation, our comprehensive portfolios could hold two or three fewer equity managers than they have recently, and initial allocations to a manager could rise from about 6% of the total portfolio to as high as 8%. The manager rosters would likely include more specialists, those with a specific expertise and focus that we believe gives them a distinct competitive advantage and ability to generate superior returns. We will continue to monitor our geographic and sector allocations and to hedge if they become too large or small, and we will also keep our currency exposures reasonably close to those of the ACWI. This new optimization effort is an addition to what we have always done, and it's the next phase of a process we are hoping will make sense in our portfolios to generate additional alpha. It will not be as important as asset allocation or manager selection, but it is one more way we are trying to generate the best returns we can for you without taking undue risks.

We thank you for your continued confidence and support.

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