

MULTI-ASSET PORTFOLIOS

# Performance and Risk Monitoring: Untangling the Web

By Brian Kmetz

Model portfolios provide many benefits to investment professionals. Perhaps the greatest benefit is a uniform set of portfolios that scales construction and maintenance across the client base. However, an underappreciated aspect of model portfolio uniformity is the ability to monitor performance and risk. One set of model portfolios implies return drivers, risks, and exposures are similar from client to client. Any portfolio gaps or deficiencies can be corrected, avoiding a whack-a-mole approach to monitoring across custom portfolios.

## Process is key

To fully leverage the performance and risk monitoring benefits of model portfolios, a sound and repeatable process must be in place. Breaking the investment process down into discrete steps allows for more granular portfolio monitoring. An investor can observe the contribution to performance and risk for each step of construction, with the total portfolio reflecting the aggregated risks and performance. The dangers of not monitoring model portfolio risk and performance include an unforeseen exposure derailing performance or increasing risk without the practitioner's knowledge. Identifying this unintended risk becomes a near impossibility.

Untangling the web of exposures embedded in each portfolio helps dial up the intended risks and reduce unintended or uncompensated risks. Applying a monitoring process to each portfolio construction step ensures each step is adding value. After all, if it's not adding value, why keep it?

## Choose the right benchmark

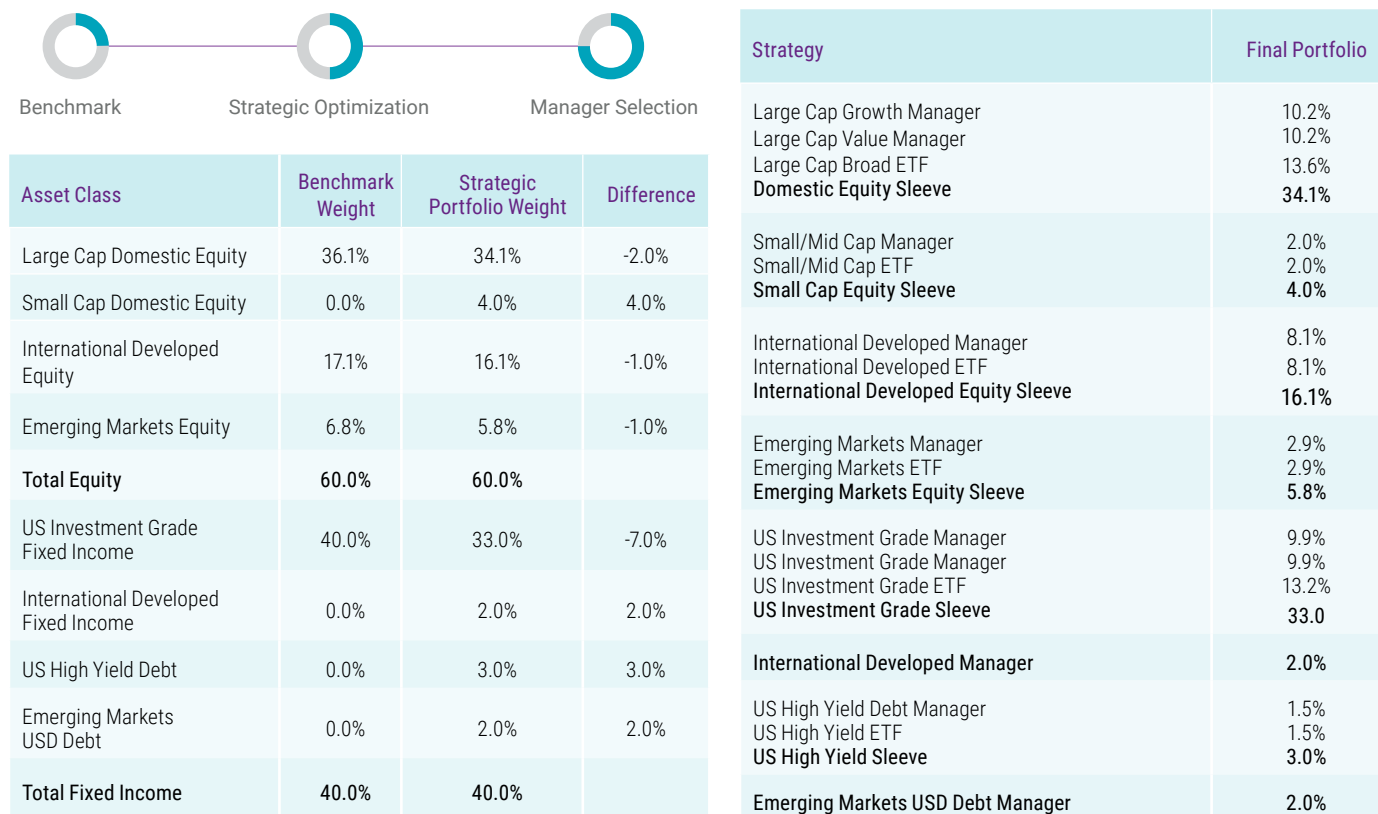
The most straightforward form of portfolio monitoring is measuring performance. Performance measurement acts as a foundational element from which to build additional processes. However, before performance can be measured, there must be a suitable benchmark. There are several definitions of a benchmark, but the two most important elements are that it must be representative of the portfolio's investment universe and the best passive implementation of the portfolio. Working with a strong benchmark ensures that adding value over the benchmark is due to skill, rather than taking advantage of suboptimal implementation. We discuss this in greater detail in *Asset Allocation: The Big Decisions*.



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Once the benchmark is established, the practitioner can walk through each step of the portfolio construction process to determine the most effective way to measure performance. For a portfolio that relies solely on a strategic allocation, the process is shown in Figure 1.

FIGURE 1: Strategic Allocation



Source: Natixis Investment Managers Solutions. For Illustrative Purposes Only.

This process outlines two distinct portfolio construction steps intended to add value: creating a strategic allocation different from the benchmark and then selecting managers and strategies to implement that allocation. From a performance attribution perspective, recreating the strategic allocation as a secondary portfolio allows for more granular attribution. This answers the question, did the strategic allocation add value over the benchmark? The next step is taking the final, implemented portfolio and measuring against the strategic allocation. This answers the question of whether manager selection added value (Figure 2).

FIGURE 2: Strategic Allocation vs. Benchmark Return Contributions

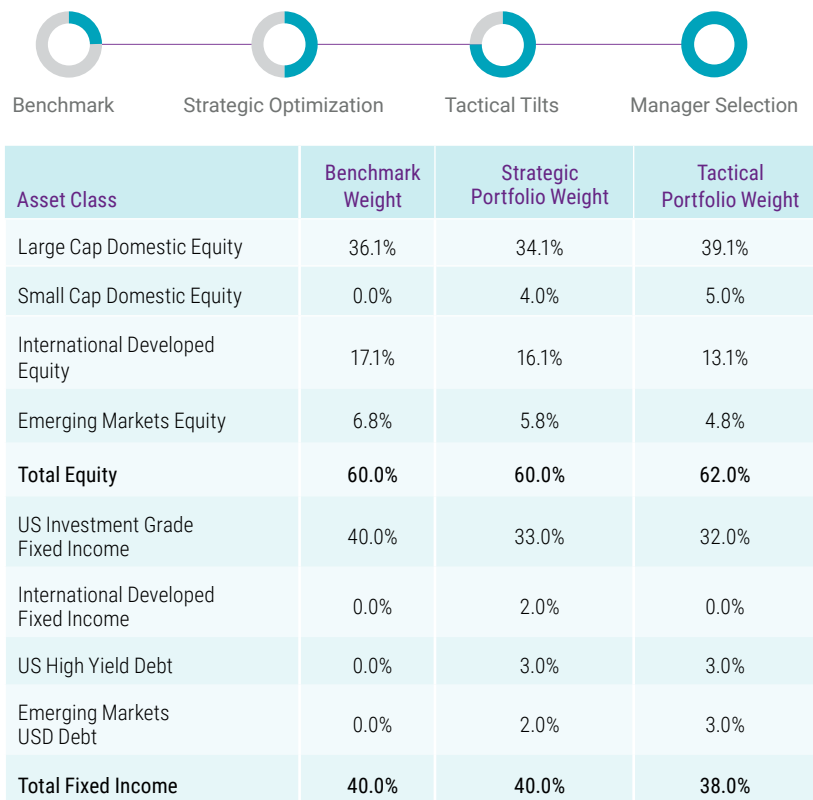
	Asset Class	Benchmark Weight	Benchmark Return	Benchmark Return Contribution	Strategic Portfolio Weight	Strategic Portfolio Return	Strategic Portfolio Return Contribution
EQUITY	Large Cap Domestic Equity	36.1%	10.0%	3.6%	34.1%	10.0%	3.4%
	Small Cap Domestic Equity	0.0%	8.0%	0.0%	4.0%	8.0%	0.3%
	International Developed Equity	17.1%	6.0%	1.0%	16.1%	6.0%	1.0%
	Emerging Markets Equity	6.8%	2.0%	0.1%	5.8%	2.0%	0.1%
	<b>Total Equity</b>	<b>60.0%</b>	-	<b>4.8%</b>	<b>60.0%</b>	-	<b>4.8%</b>
FIXED INCOME	US Investment Grade Fixed Income	40.0%	2.0%	0.8%	33.0%	2.0%	0.7%
	International Developed Fixed Income	0.0%	-2.0%	0.0%	2.0%	-2.0%	0.0%
	US High Yield Debt	0.0%	6.0%	0.0%	3.0%	6.0%	0.2%
	Emerging Markets USD Debt	0.0%	4.0%	0.0%	2.0%	4.0%	0.1%
	<b>Total Fixed Income</b>	<b>40.0%</b>	-	<b>0.8%</b>	<b>40.0%</b>	-	<b>0.9%</b>
			<b>Total Return</b>	<b>5.58%</b>		<b>Total Return</b>	<b>5.69%</b>

Source: Natixis Investment Managers Solutions. For Illustrative Purposes Only.

Strategy	Final Portfolio Weight	Final Portfolio Return	Final Portfolio Return Contribution
Large Cap Growth Manager	10.2%	12.5%	1.3%
Large Cap Value Manager	10.2%	8.0%	0.8%
Large Cap Broad ETF	13.6%	10.0%	1.4%
<b>Domestic Equity Sleeve</b>	<b>34.1%</b>	-	<b>3.5%</b>
Small/Mid Cap Manager	2.0%	7.5%	0.2%
Small/Mid Cap ETF	2.0%	8.0%	0.2%
<b>Small Cap Equity Sleeve</b>	<b>4.0%</b>	-	<b>0.3%</b>
International Developed Manager	8.1%	6.5%	0.5%
International Developed ETF	8.1%	6.0%	0.5%
<b>International Developed Equity Sleeve</b>	<b>16.1%</b>	-	<b>1.0%</b>
Emerging Markets Manager	2.9%	2.0%	0.1%
Emerging Markets ETF	2.9%	2.0%	0.1%
<b>Emerging Markets Equity Sleeve</b>	<b>5.8%</b>	-	<b>0.1%</b>
US Investment Grade Manager 1	9.9%	2.5%	0.2%
US Investment Grade Manager 2	9.9%	3.0%	0.3%
US Investment Grade ETF	13.2%	2.0%	0.3%
<b>US Investment Grade Sleeve</b>	<b>33.0%</b>	-	<b>0.8%</b>
<b>International Developed Manager</b>	<b>2.0%</b>	<b>-3.0%</b>	<b>-0.1%</b>
US High Yield Debt Manager	1.5%	5.5%	0.1%
US High Yield ETF	1.5%	6.0%	0.1%
<b>US High Yield Sleeve</b>	<b>3.0%</b>	-	<b>0.2%</b>
<b>Emerging Markets USD Debt Manager</b>	<b>2.0%</b>	<b>2.5%</b>	<b>0.1%</b>
		<b>Total</b>	<b>5.86%</b>

For those who use a tactical overlay, this requires an additional step in the portfolio construction process and an additional portfolio expressing the tactical allocation, as shown in **Figure 3**.

**FIGURE 3: Tactical Allocation vs. Benchmark**



Strategy	Final Portfolio
Large Cap Growth Manager	11.7%
Large Cap Value Manager	11.7%
Large Cap Broad ETF	15.6%
<b>Domestic Equity Sleeve</b>	<b>39.1%</b>
Small/Mid Cap Manager	2.5%
Small/Mid Cap ETF	2.5%
<b>Small Cap Equity Sleeve</b>	<b>5.0%</b>
International Developed Manager	6.6%
International Developed ETF	6.6%
<b>International Developed Equity Sleeve</b>	<b>13.1%</b>
Emerging Markets Manager	2.4%
Emerging Markets ETF	2.4%
<b>Emerging Markets Equity Sleeve</b>	<b>4.8%</b>
US Investment Grade Manager	9.6%
US Investment Grade Manager	9.6%
US Investment Grade ETF	12.8%
<b>US Investment Grade Sleeve</b>	<b>32.0%</b>
<b>International Developed Manager</b>	<b>0.0%</b>
US High Yield Debt Manager	1.5%
US High Yield ETF	1.5%
<b>US High Yield Sleeve</b>	<b>3.0%</b>
<b>Emerging Markets USD Debt Manager</b>	<b>3.0%</b>


Source: Natixis Investment Managers Solutions. For Illustrative Purposes Only.

## Strategic vs. tactical

Taking the asset allocation weight differences of each step in the investment process gives an idea of the allocation adjustments made from the benchmark weights to strategic, strategic weights to tactical, and finally, the tactical weights back to the benchmark. In **Figure 4**, we observe that the strategic allocation is underweight large cap domestic equity vs. the benchmark by -2%. However, the tactical allocation is subsequently overweight domestic large cap equity vs. the strategic allocation by 5%. This nets out to a tactical overweight to the benchmark of 3%.

Why would an investor tactically overweight an asset class that is strategically underweight the benchmark? The answer is time horizon. Shorter, tactical views often differ from longer, strategic views, and positioning can offset as these views are implemented. However, if you find that your tactical views are often offsetting the strategic views, then a revisit of the investment process may be in order. More often than not, both strategic and tactical views should be aligned.

**FIGURE 4: Asset Allocation Weight Differences**



Asset Class	Strategic – Benchmark	Tactical – Strategic	Tactical – Benchmark
<b>EQUITY</b>			
Large Cap Domestic Equity	-2.0%	5.0%	3.0%
Small Cap Domestic Equity	4.0%	1.0%	5.0%
International Developed Equity	-1.0%	-3.0%	-4.0%
Emerging Markets Equity	-1.0%	-1.0%	-2.0%
<b>Total Equity</b>	<b>0.0%</b>	<b>2.0%</b>	<b>62.0%</b>
<b>FIXED INCOME</b>			
US Investment Grade Fixed Income	-7.0%	-1.0%	-8.0%
International Developed Fixed Income	2.0%	-2.0%	0.0%
US High Yield Debt	3.0%	0.0%	3.0%
Emerging Markets USD Debt	2.0%	1.0%	3.0%
<b>Total Fixed Income</b>	<b>0.0%</b>	<b>-2.0%</b>	<b>38.0%</b>

Source: Natixis Investment Managers Solutions. For Illustrative Purposes Only.

## Measuring the contribution to performance

With these steps in mind, measuring the contribution to performance is critical. It allows the investor to assess the added value of each leg of the investment process and re-evaluate underperformance. **Figure 5** shows traditional attribution breakouts, as follows:

- Asset allocation effect: excess return via overweighting/underweighting asset classes vs. the benchmark
- Style effect: excess return via style selection within each asset class (think growth/value tilts, for example)
- Manager selection: excess return via manager outperformance/underperformance vs. its benchmark

**FIGURE 5: Traditional Attribution (10/25/19–12/29/23)**

25-Oct-2019 to 29-Dec-2023	Asset Allocation Effect	Style Selection Effect	Manager Selection Effect	Total Effect
US Equity	0.27	0.15	0.10	0.53
International Developed Equity	0.04	-0.05	0.03	0.03
Emerging Markets Equity	0.11	-0.07	-0.02	0.02
US Investment Grade	0.18	0.26	0.22	0.67
International Investment Grade	0.21	--	--	0.21
High Yield	0.03	0.05	-0.07	0.01
Emerging Market Debt	-0.11	--	-0.01	-0.12
Short Term	-0.08	-0.00	0.00	-0.08
<b>Total</b>	<b>0.66</b>	<b>0.34</b>	<b>0.27</b>	<b>1.26</b>

Source: Factset. For Illustrative Purposes Only.

While these buckets give a nuanced view on the drivers of performance at the total portfolio level, it still leaves the question of whether each step of the process adds value. The second set of attribution buckets, shown in **Figure 6**, add up to the same excess return (1.26% annualized), but uses a secondary strategic portfolio to discern value added from the strategic allocation vs. the benchmark, the tactical allocation vs. the strategic allocation, and manager selection.

For more granular views, there are software packages that perform detailed attribution analysis. The trick is inputting the correct benchmarks and portfolios to accurately measure the contribution of each step in the investment process. For instance, by including the strategic allocation as a secondary benchmark, investment practitioners can measure the contribution of each step of the investment process using attribution.

**FIGURE 6: Attribution Breakout**

Total Effect	1.26
Strategic Asset Allocation vs. Bench	0.47
Tactical Asset Allocation vs. Strategic	0.53
Manager Selection	0.27

Source: Factset. For Illustrative Purposes Only.

### Risk driver identification

Adding a complementary perspective to portfolio performance, risk monitoring can help tease out the drivers of risk and ultimately performance. Risk analysis software has increased in popularity over the years, with both holdings-based and returns-based packages allowing the decomposition of portfolio exposures into factors. These factors are explanatory variables that help describe what risks the portfolios' underlying holdings are exposed to. Factors can be style driven (e.g., momentum or value), industry driven, regional, credit or interest rates, currency, and commodity. Risk factor models go beyond the traditional holdings-based regional and sector breakdowns and look at underlying drivers of risk.

As an example, **Figure 7** shows the same equity sleeve broken out using a typical regional and sector breakdown vs. the benchmark. This provides a broad overview of the portfolio exposures, but can miss important information lurking under the surface.

FIGURE 7: Sector Breakdown

Asset Class	Portfolio Ending Weight	Bench Ending Weight	Difference
<b>Equity</b>	<b>57.55</b>	<b>59.44</b>	<b>-1.89</b>
<b>US Equity</b>	<b>45.60</b>	<b>42.21</b>	<b>3.39</b>
US Equity - Large Cap	40.18	38.05	2.13
US Equity - Small/Mid Cap	5.42	4.15	1.27
<b>International Equity</b>	<b>11.95</b>	<b>17.23</b>	<b>-5.28</b>
International Developed Equity	8.32	11.02	-2.70
Emerging Markets Equity	3.62	6.21	-2.59
<b>Fixed Income</b>	<b>40.62</b>	<b>39.58</b>	<b>1.04</b>
US Fixed Income	38.63	36.68	1.95
US Investment Grade	36.14	34.71	1.43
High Yield	2.48	1.97	0.52
<b>Cash</b>	<b>1.82</b>	<b>0.99</b>	<b>0.83</b>

Source: Bloomberg. For Illustrative Purposes Only.

Asset Class	Portfolio Ending Weight	Bench Ending Weight	Difference
<b>Equity</b>	<b>57.55</b>	<b>59.44</b>	<b>-1.89</b>
Communication Services	5.51	4.16	1.35
Consumer Discretionary	7.37	6.20	1.17
Consumer Staples	2.74	3.68	-0.94
Energy	2.43	3.02	-0.59
Financials	10.70	9.88	0.82
Health Care	6.60	6.99	-0.39
Industrials	6.48	6.90	-0.42
Information Technology	12.28	12.73	-0.45
Materials	1.96	2.58	-0.62
Real Estate	0.89	1.76	-0.87
Utilities	0.59	1.53	-0.94
<b>Fixed Income</b>	<b>40.62</b>	<b>39.58</b>	<b>1.04</b>
Corporate	22.26	14.78	7.48
Government-Related	2.37	0.86	1.51
Municipals	0.01	-	0.01
Securitized	6.48	9.65	-3.17
Treasury	9.50	14.29	-4.79
<b>Cash</b>	<b>1.82</b>	<b>0.99</b>	<b>0.83</b>

Source: Bloomberg. For Illustrative Purposes Only.

Similarly, **Figure 8** shows the same portfolio broken out using a risk factor model. While some exposures look similar to the holdings-based version, there are others that are new. Sorting by contribution to active risk can reveal which risk factors contribute the greatest risk to the portfolio, relative to the benchmark. From a factor perspective, the high beta factor is the biggest contributor to portfolio risk vs. the benchmark, followed by US equity market exposure.

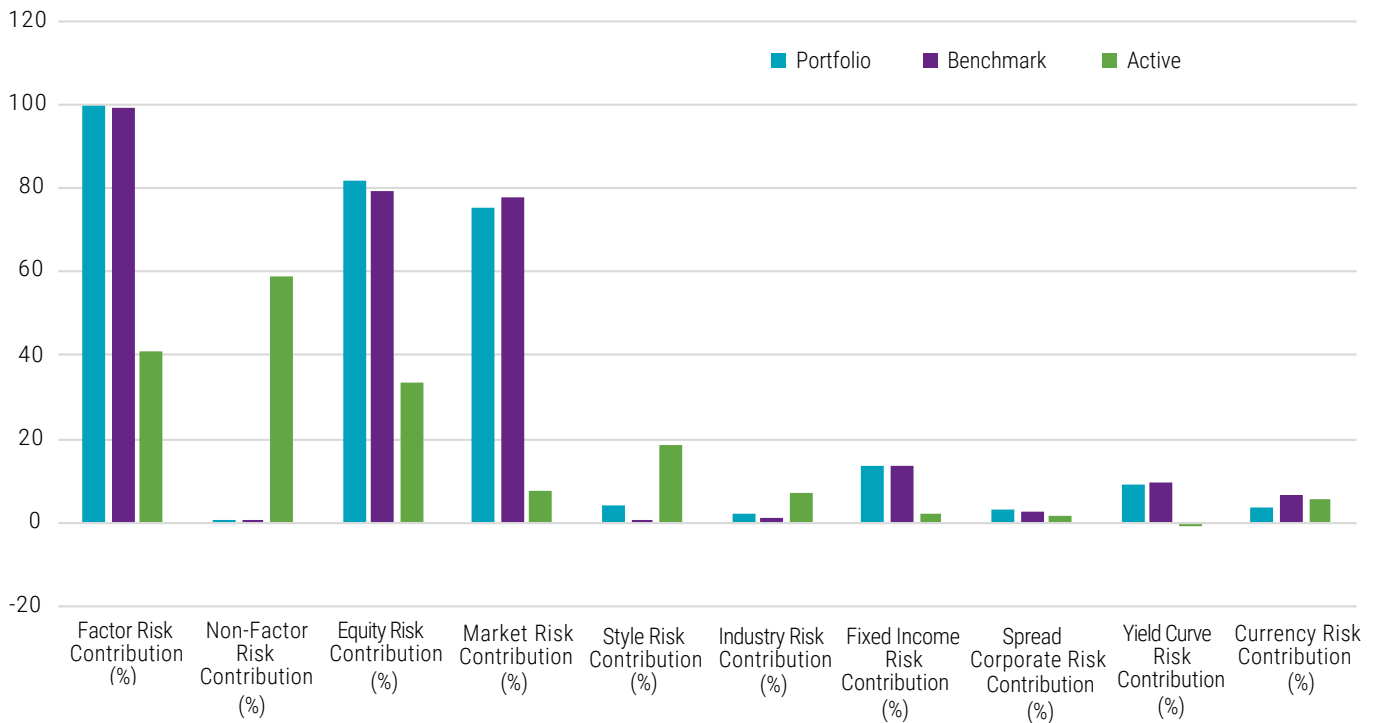
**FIGURE 8: Factor Breakdown**

Factor	Portfolio Exposure	Benchmark Exposure	Active Exposure	Contribution to Active Risk (%)
US High Beta	0.06	-0.02	0.08	10.58
US Market	0.44	0.42	0.02	4.38
Asia Pacific Market	0.01	0.03	-0.02	4.01
US Momentum	0.01	-0.04	0.05	3.38
Euro Currency	0.03	0.05	-0.02	1.38
China Market	0.00	0.01	-0.01	1.36
US Dividend Yield	-0.05	0.03	-0.08	1.23
US Utilities	0.00	0.01	-0.01	1.12
US Internet Industry	0.04	0.02	0.01	1.10
Residual Volatility	0.05	0.02	0.03	1.04

Source: Bloomberg. For Illustrative Purposes Only.

Taking a top-down view of contributions to risk, we see that factor risk is the dominant contributor. However non-factor, or idiosyncratic, risk is a large contributor of active risk vs. the benchmark. Thinking about this in the more familiar beta and alpha framework, beta (factor risk) takes up a dominant share of portfolio risk, but alpha (non-factor risk) disproportionately drives tracking error relative to the benchmark. Finally, we see that even when using a factor-based approach to risk assessment, equity risk still dominates vs. fixed income.

FIGURE 9: Risk Contribution



Source: Bloomberg. For Illustrative Purposes Only.

### Information to guide decisions

The final step in the process is using the information to make decisions. With performance measurement this is more straightforward. Is each step in the investment process adding value? If not, is that a feature of the market environment or the result of a faulty process? To make this determination, ensuring the track record is long enough (at least five years) creates a large enough sample size to draw conclusions. To have some confidence in the process, back testing is also an important feature.

Risk management decisions center around the dominant risk exposures in the portfolio and whether they are intended. With portfolios of active managers, the aggregated buy-and-sell decisions can create unintended concentrations in certain securities. A good risk-monitoring process should tease that out. The next decision becomes what to do about any unintended exposures. One possible solution is the introduction of a complementary strategy or manager, or a shift in the asset allocation.

No matter what the investment process looks like, a solid framework measuring drivers of performance and contributions to risk is essential. If the asset allocation is the foundation, then performance and risk monitoring is the roof, preventing any leaks from storms that may arise.





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