# THE POWER OF PROCESS:
## BUILDING A ROBUST ASSET ALLOCATION METHODOLOGY

*October 29, 2020*

Northern Trust
Global Asset Allocation

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**Foundational to all Northern Trust multi-asset strategies is our well-established asset allocation process. Our strategic and tactical asset allocation horizons combine to provide a unique "forward looking, historically aware" perspective.**

Northern Trust has an established asset allocation process, incorporating both strategic and tactical investment horizons. Supporting this process, Northern Trust's investment expertise is leveraged from around the globe, across all asset classes. Far from being an academic exercise, all participants are actively "in the markets" on a daily basis.

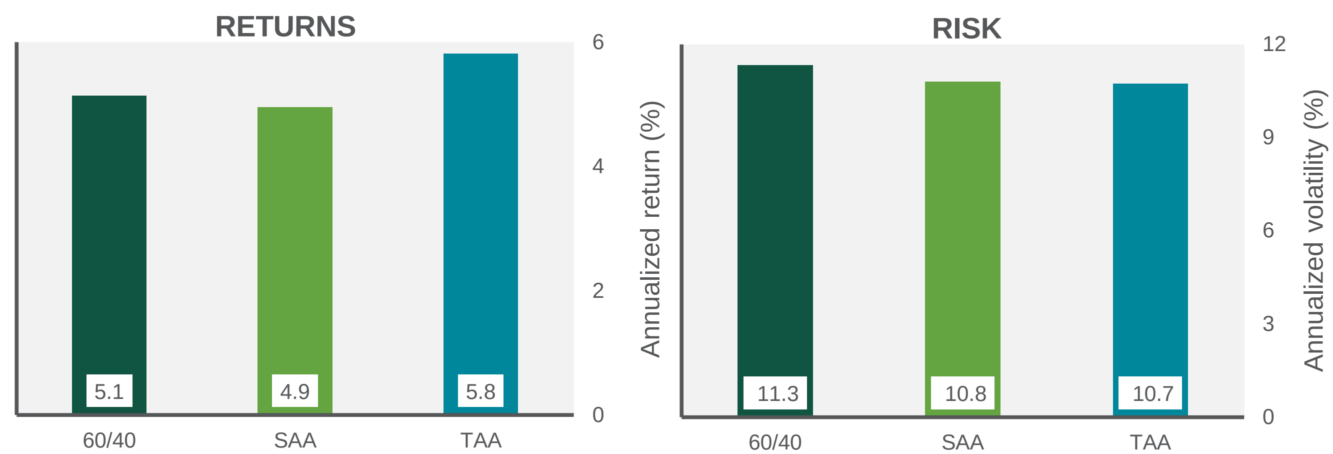
We recognize it is not enough to merely analyze historical relationships among asset classes and what drives asset class returns; we must also identify how and why those relationships may change in the future. For instance, valuations have historically provided great insight into global equity returns – when valuations are high, returns are generally low (and vice versa). But recent global equity returns have defied historical relationships; and asset allocation decisions driven purely by historical data would have missed the mark.

We incorporate asset classes from the global opportunity set that provide access to compensated risk factors and serve a specific purpose in the portfolio. Our strategic process engages in long-term risk factor optimization – foundational for our tactical process, which seeks to identify periods when specific risks will be rewarded with excess returns.

Our approach to asset allocation has added value over the course of the past 10-plus years. As detailed in Exhibit 1, our global policy model has generated higher returns with lower risk vs. a simple 60/40 portfolio at the tactical (TAA) level and favorable risk-adjusted returns at the strategic (SAA) level. Our process is fully transparent and flexible, applicable to investors of all levels of sophistication and all types of investment goals and risk tolerances.

**EXHIBIT 1: HIGHER RETURN, LOWER RISK**

Our tactical global policy model has provided higher returns – and lower risk – than a 60/40 portfolio.




Source: Northern Trust Global Asset Allocation, Bloomberg. Annualized data: 12/31/2007 – 9/30/2020. Past performance is no guarantee of future results.

## STRATEGIC ASSET ALLOCATION (SAA): SETTING THE FOUNDATION

*SAA is foundational to all Northern Trust multi-asset class mandates. Our risk asset/risk-control approach can establish the appropriate baseline portfolio, regardless of investor risk tolerance.*

Annually, Northern Trust's senior investment professionals meet to refresh our five-year capital market assumptions (CMA). In this "forward looking, historically aware" approach, historically-based predictive models are subjected to Northern Trust's forward-looking themes. The resulting return forecasts – published in our annual CMA whitepaper – are combined with risk and correlation assumptions in a contemporary portfolio optimization process to produce an efficient frontier of possible portfolios.

Northern Trust is a pioneer in the application of factor-based asset allocation within the framework of modern portfolio theory. Factors explain the return and risk of conventional asset classes, with term (interest rate risk) and market (equity risk) representing the most important risk factors in multi-asset class portfolios. Secondary risk factors, such as credit (default risk) and emerging markets, also help explain returns at the margin, but are highly correlated to the market risk factor.

Given these findings, we engage in a two-step optimization process. First, we optimize two portfolios:

- Risk Asset Portfolio (market factor exposure): high yield bonds, global equities and real assets
- Risk-Control Portfolio (term factor exposure): cash, investment-grade and inflation-linked bonds

We then combine these two portfolios through an optimization process to maximize return subject to investor risk constraints. Since our primary risk factors – term and market – are uncorrelated, we can maintain robust diversification through this risk-control/risk asset construct. High yield bonds help illustrate the benefit of our two-step approach to asset allocation. High yield is an asset class with an attractive long-term risk/reward profile. But its diversification benefits are not constant, often times behaving like an equity investment during times of severe stress. The SAA process allows us to benefit from high yield's unique characteristics, without depending on it for robust and persistent diversification.

## TACTICAL ASSET ALLOCATION (TAA): CAPITALIZING ON OPPORTUNITIES

*TAA seeks to add value by exploiting near-term financial market opportunities. Risk management techniques are incorporated to ensure TAA deviation from SAA conforms to investor expectations.*

A subset of the team that develops the annual capital market assumptions and constructs the SAA also meets monthly to review the global economic environment and identify opportunities and risks over the tactical (12 month) horizon. This structured approach to TAA decision-making allows a comprehensive review of key tactical inputs – including top-down, global macroeconomic views and bottom-up asset class return forecasts. Any changes in TAA are communicated to investors directly after the investment policy meeting, alongside base case and risk case scenarios.

At each meeting, the team ultimately makes two decisions:

- Risk Positioning: Allocation to Risk Asset Portfolio (RA)/Risk-Control Portfolio (RC)
- Relative Value Positioning: Allocations to individual asset classes within RA/RC

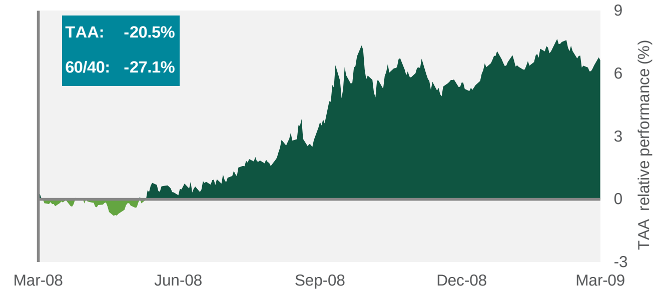
For instance, ahead of the global financial crisis (GFC), as economic conditions were deteriorating and financial market stresses were building, TAA reduced risk broadly. This **De-Risking** of the portfolio generated 6.6% outperformance vs. a simple 60/40 portfolio. TAA then engaged in **Re-Risking** the portfolio as financial markets bottomed; the portfolio lagged as TAA redeployed risk, but reentering "risk-on" positioning ultimately led to 7.0% outperformance over the full GFC period. Conversely, TAA maintained risk levels in early-2016, seeing no fundamental reason for market weakness; **Maintaining** its "risk-on" positioning led to 1.5% outperformance. TAA made a relative positioning call in the year after the 2016 U.S. election, **Rotating** out of U.S. markets and into non-U.S. equities, which resulted in 0.7% outperformance. Further details on these tactical decisions can be found on the next page.

All tactical asset allocation decisions are made in the context of an active risk budget, controlling the degree of relative performance. TAA's default active risk budget is 2% when "risk-on" and 4% when "risk-off". But the target active risk can be moved higher or lower. The TAA active risk and starting point SAA combine to provide the necessary "levers" to more precisely target desired investment outcomes.

## De-Risking

The risk profile of the tactical portfolio was reduced in mid-2008 based on global growth concerns and further reduced following the Lehman Brothers collapse due to market liquidity concerns. The tactical changes led to an overall underweight in risk assets, including a large overweight in cash. Risk assets were reduced broadly across developed ex-U.S. equities, U.S. equities, high yield fixed income and global real estate. The defensive positioning led to significant outperformance throughout the worst part of the equity market sell-off in the global financial crisis.

**3/31/2008 – 3/31/2009**

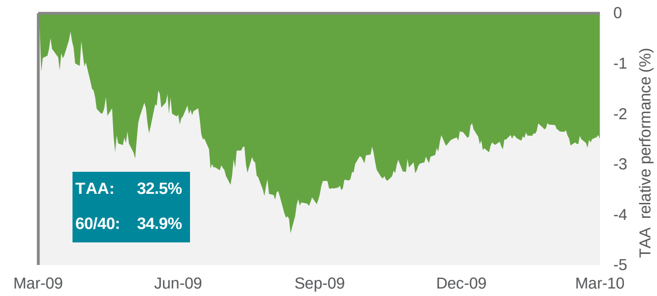



Source: Northern Trust Global Asset Allocation, Bloomberg.

## Re-Risking

As financial markets stabilized, the tactical portfolio was adjusted to begin re-risking the portfolio. Allocations to primarily non-U.S. equities and high yield fixed income were increased, funded by decreases in cash and investment grade fixed income. The tactical portfolio returned to an overweight position in risk assets overall by September 2009. Despite underperformance in the market recovery period, the tactical portfolio outperformed overall in the years around the crisis benefitting from the downside protection described in the section above.

**3/31/2009 – 3/31/2010**

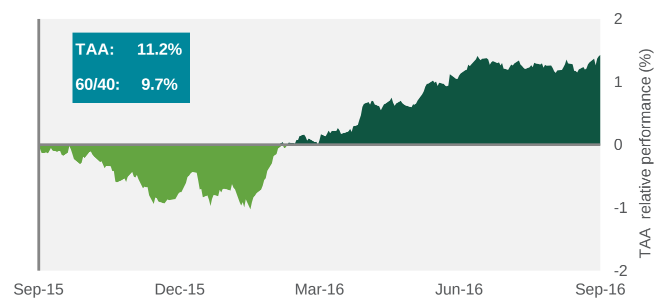



Source: Northern Trust Global Asset Allocation, Bloomberg.

## Maintaining

Despite financial market weakness and concerns of a hard landing in China in early 2016, positioning was maintained in the tactical portfolio on a view that markets were too heavily discounting the odds of a U.S. recession. Additional tactical changes in 2016 involved paring back a significant overweight to high yield fixed income following a period of strong performance for the asset class. While relative performance lagged in the early part of the period, the decision to hold risk positioning benefitted performance after risk assets began to recover in mid-February 2016.

**9/30/2015 – 9/30/2016**

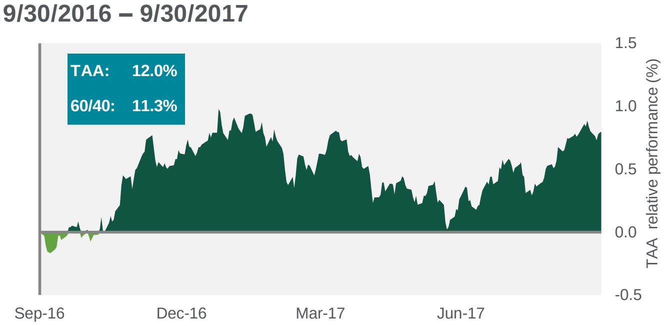



Source: Northern Trust Global Asset Allocation, Bloomberg.

## Rotating

Immediately after the U.S. elections in November 2016, the tactical portfolio's U.S. equities allocation was increased to position for an anticipated pro-growth agenda including lower taxes, deregulation, and infrastructure spending. The tactical portfolio was then shifted into non-U.S. equities from U.S. equities and interest-rate sensitive asset classes in 2017. The pivot was driven by a recognition that the global growth outlook had improved and headwinds for emerging markets related to changes in U.S. tax policy and Federal Reserve policy were less severe than previously thought. Both moves benefitted performance in 2017.

**9/30/2016 – 9/30/2017**




Source: Northern Trust Global Asset Allocation, Bloomberg.