Dynamic Model Portfolios

Blending strategic and tactical asset allocation

Invesco Solutions

Summary

- Invesco's Model Portfolios aim to deliver alpha by utilizing a time-tested process that is both scalable and customizable based on client needs.
- Asset classes move in and out of favor over the course of a business cycle and, our tactical asset allocation framework aims to exploit the opportunities these fluctuations present.
- Combining strategic and tactical asset allocation views in a Model Portfolio may help investors reach their goals and provide financial advisors with valuable commentary for end-client conversations.

Defining Invesco's Model Portfolio investment process

Invesco Solutions builds portfolios using a disciplined, repeatable, and scalable investment process, seeking to help financial advisors and their clients in pursuit of their goals. Without a defined investment process, ever-shifting market conditions and a vast universe of investment options can cloud decision making, potentially deviating results from desired outcomes. Invesco's Model Portfolio investment process takes the guesswork out of portfolio management. With a sound and tested approach covering asset allocation, manager selection, portfolio construction, and risk and performance monitoring, our team focuses on the key elements that drive investment alpha, featured in our Dynamic Model Portfolio series (**Figure 1**).

Figure 1: Investment process

Disciplined, repeatable, and scalable

Asset allocation	Manager selection	Portfolio construction	Risk and performance monitoring

Asset allocation	• Strategic allocations predicated on longer-term views • Tactical asset allocation based on extensive macro regime analysis • Dynamic adjustments seeking to capture cyclical opportunities in the current environment while maintaining a risk-aware approach
Manager selection	• Evaluation using quantitative and qualitative metrics • Flexible architecture that allows for the inclusion of non-proprietary products
Portfolio construction	• Portfolios designed to incorporate client constraints and fee considerations • Portfolios optimized to solve for desired outcomes
Risk and performance monitoring	• Comprehensive and continuous review of portfolios through Invesco Vision • Independent risk oversight (Global Performance Measurement and Risk/GPMR)

For illustrative purposes only. There can be no assurance that any investment process or strategy will achieve its investment objective.

> By starting with the long-term strategic positioning and tactically tilting towards near-term opportunities, investors can successfully balance these two views.

> For the basis of our strategic allocations, we attempt to estimate the forward-looking risk, return, and correlation of asset classes through a set of capital market assumptions (CMAs).

As the starting point for any portfolio, our investment process begins with an asset allocation that is aligned with the risk tolerance and goals of a client based on their investing time horizon. Importantly, we believe opportunities to create alpha exist over the long and short term and that portfolios can be constructed to capture these strategic and tactical opportunities. It is critical to note that the drivers of risk and return vary over different time horizons, and what may appear attractive over the long term may be out of favor in the near term and vice versa. We think investors can potentially achieve stronger risk-adjusted returns by starting with a strategic asset allocation and tactically adjusting to take advantage of near-term opportunities.

Strategic asset allocation: Investing through the business cycle

One of the key tenets of our investment process is that the past is not prologue. Therefore, we develop portfolios designed to strategically navigate a variety of market environments through the business cycle. For example, if one were to invest solely based on past performance within equities, one would overweight the most overvalued recent winners while underweighting the overlooked parts of the market, which are often trading at large discounts. As we have learned from prior periods of market stress, this style of investing often leads to bubbles that deflate when the cycle ends, sometimes taking a decade or longer to return to market leadership, if ever. As such, for the basis of our strategic allocations, we attempt to estimate the forward-looking risk, return, and correlation of asset classes through a set of capital market assumptions (CMAs). These CMAs are comprised of a standard set of building blocks that translate to the more than 170 public and private assets we cover (**Figure 2**). For example, expected returns on equities might consider dividend yield, earnings growth, and expectations for changes in valuation relative to some mean level, while fixed income estimates observe current and future yields, credit spreads and estimated losses, and the shapes of its various yield curves.

Figure 2: Capital market assumption framework

170+ assets in nearly 20 global currencies across public and private markets[1]

Our capital market assumptions cover a 5-year and 10-year horizon for:

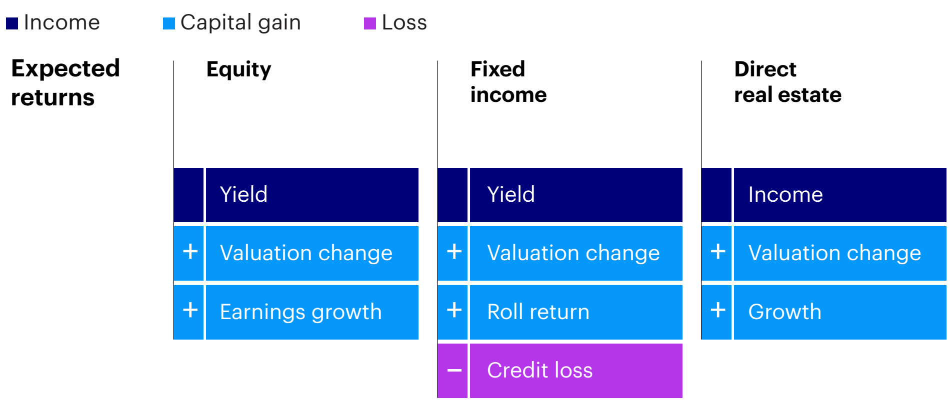
Equities: 45+ assets
Historical data back to early 1970s

Fixed income: 85+ assets
Historical data back to early 2000s

Alternatives: 25+ assets
Return & risk coverage for both listed and unlisted assets, including private credit, private equity, and real assets

Target risk
Conservative, moderate, aggressive

Our building block approach to estimating returns



1 Due to private market assets requiring longer investment horizons, only 10-year assumptions are developed.
Source: Invesco Solutions, as of June 30, 2023. For illustrative purposes only. Refer to capital market assumptions (CMAs) disclosures for additional CMA information.

Additional resources for our CMA and TAA methodologies

We employ a fundamentally based “building block” approach to estimating asset class returns. Estimates for income and capital gain components of returns for each asset class are informed by fundamental and historical data. Components are then combined to establish estimated returns (**Figure 2**). Here, we provide a summary of key elements of the methodology used to produce our long-term (10-year) estimates. Five-year assumptions are also available upon request. Please see Invesco’s capital market assumption methodology whitepaper for more detail.

For more information on the Invesco Solutions approach to dynamically allocating across factors, sectors, regions and asset classes, please review our white papers: "Dynamic Asset Allocation Through the Business Cycle" by Alessio de Longis, CFA®, "Market Sentiment and the Business Cycle", by Alessio de Longis, CFA®, "Invesco's Dynamic Multifactor Strategies - A Macro Regime Approach" Parts 1 and 2, by Alessio de Longis, CFA® and Mo Haghbin, CFA®, CAIA.

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As equities increase in the strategic asset allocation, the fixed income portion will begin to favor negatively correlated assets with longer duration instead of credit instruments.

Our tactical approach to investing utilizes a regime-based framework built from extensive research on how macroeconomic and market events affect asset class performance.

Weights for our long-term strategic asset allocation (SAA) are then derived through an optimization process that starts with an appropriate benchmark based on risk tolerance and investment objectives and takes on active risk according to our views within a given tracking error budget. The optimization methods are intended to maximize desired outcomes, such as return or yield while minimizing risk and balancing for uncertainty within a set of constraints. To note, this process enhances diversification by trading off assets that have similar features. For example, as equities increase in the portfolio, the fixed income portion will begin to favor negatively correlated assets with longer duration instead of credit instruments. Our strategic allocations are fully customizable and are curated to shift long-term investors towards the opportunities to capture alpha that exist in their investment universe.

Tactical asset allocation: Tilting within the business cycle

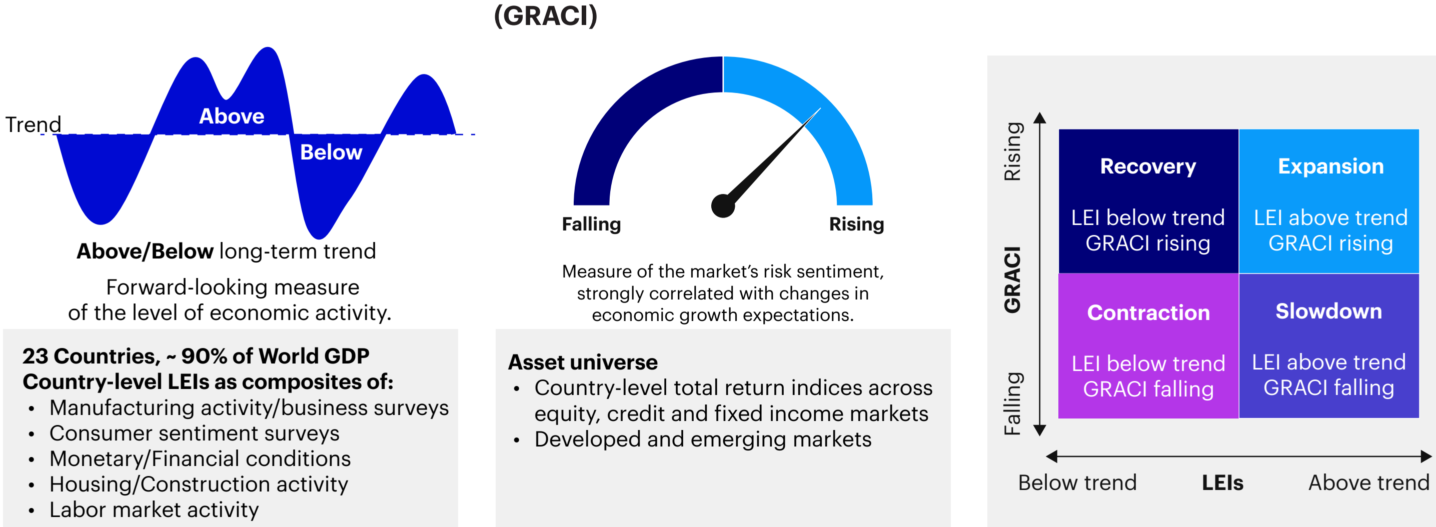
While most investors have a long-term investment horizon, they often care about performance and risks over the near-to-medium term, as these results may alter financial plans, affect behavioral investment biases, and influence future investment decisions. This has become more prominent in recent decades due to more pronounced market fluctuations, larger economic shocks, and meaningful economic policy responses, and tactical asset allocation (TAA) solutions aim to capitalize on the opportunities these present. Within Invesco Solutions, our tactical approach to investing utilizes a regime-based framework built from extensive research on how macroeconomic and market events affect asset class performance. To identify a regime for a given economy or region, we utilize proprietary leading economic indicators (LEI) to establish a trend growth rate and a faster-moving, market-based, global risk appetite composite indicator (GRACI) to determine whether the economy will accelerate or decelerate (**Figures 3**). Within this framework, the business cycle is comprised of four distinct regimes, namely:

1. **Recovery:** Growth below trend and accelerating (~15% of observations)
2. **Expansion:** Growth above trend and accelerating (~35% of observations)
3. **Slowdown:** Growth above trend and decelerating (~35% of observations)
4. **Contraction:** Growth below trend and decelerating (~15% of observations)

Figure 3: Estimating expected macro regimes

Constructing a forward-looking macro regime framework

Leading Economic Indicators (LEIs) | **Global Risk Appetite Cycle Indicator (GRACI)** | **Expected macro regime**



Sources: Invesco Solutions as of June 30, 2023. de Longis, Alessio, “Dynamic Asset Allocation Through the Business Cycle: A Macro Regime Approach," Invesco Solutions Manuscript (2019). de Longis, Alessio and Dianne Ellis, “Market Sentiment and the Business Cycle: Identifying Macro Regimes Through Investor Risk Appetite," Invesco Solutions Manuscript (2019). Polk, Haghbin, de Longis. “Time-Series Variation in Factor Premia: The Influence of the Business Cycle.” Journal of Investment Management 18, no. 1 (2020): 69–89. For illustrative purposes only.

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Our macro process drives TAA decisions, seeking return opportunities between asset classes (i.e., equity, credit, government bonds, and alternatives), regions, and factors.

A given regime tends to last around six months, with the next most likely transition being the current regime. Within this framework, regimes can move both forward and backward based on how the business cycle unfolds. When the identified regime shifts, the tactical portion of the portfolio reacts by tilting towards the assets with characteristics that tend to perform best in that regime.

Asset classes move in and out of favor over the course of a business cycle and our TAA framework aims to identify how certain asset classes perform in these different stages. These are the levers we pull when deciding where to tilt our portfolios. Our macro process drives TAA decisions, seeking return opportunities between asset classes (i.e., equity, credit, government bonds, and alternatives), regions, and factors. For example, when growth improves, equities have outperformed fixed income, and within fixed income, credit has outperformed government bonds with similar duration. As growth slows, longer-duration government bonds tend to outperform all other asset classes (**Figure 4**). Within equities, our signals identify both regions and factors that are expected to outperform. Within fixed income, we allocate between government bonds, quality credit, and riskier credit assets while targeting an overall profile of duration and credit risk, depending on the prevailing macro regime. Our research has shown that long-only investors can potentially harvest these tactical sources of returns by following a disciplined investment process.

Figure 4: Tactical asset allocation: Macro framework

	Recovery	Expansion	Slowdown	Contraction
Economic regime	Growth ▼ **below** trend & ▲ **accelerating**	Growth ▲ **above** trend & ▲ **accelerating**	Growth ▲ **above** trend & ▼ **decelerating**	Growth ▼ **below** trend & ▼ **decelerating**
Monetary policy direction	**Still easy** **~ 15% of the business cycle**	**Tightening** **~ 35% of the business cycle**	**Tight** **~ 35% of the business cycle**	**Easing** **~ 15% of the business cycle**
Market leadership (ranked by expected outperformance)	**Risky credit** • High yield, bank loans • EM hard currency	**Equity** • Value, size, momentum • Emerging markets	**Equity** • Quality, low volatility • Defensives, developed markets	**Government bonds** • Long duration • Nominal bonds
	Equity • Size, value, cyclicals • Emerging markets	**Risky credit** • High yield, bank loans • EM hard currency	**Government bonds** • Long duration • Nominal bonds	**High quality credit** • IG corporate • IG securitized
	High quality credit • IG corporate • IG securitized	**High quality credit** • IG corporate • IG securitized	**High quality credit** • IG corporate • IG securitized	**Risky credit** • High yield, bank loans • EM hard currency
	Government bonds • Intermediate duration • Nominal bonds	**Government bonds** • Short duration • Inflation-linked bonds	**Risky credit** • High yield, bank loans • EM hard currency	**Equity** • Quality, low volatility, momentum • Defensives, developed markets

For illustrative purposes only. We define policy easing as the US Federal Reserve lowering interest rates and/or expanding its balance sheet. Still, easing suggests that the US Federal Reserve is maintaining the lower interest rate policy and/or continuing its bond-buying program. Tightening suggests that the US Federal Reserve is tapering asset purchases and/or beginning to raise interest rates. Tight policy suggests that the US Federal Reserve is raising rates in an effort to ease inflation concerns.

“We argue that equity factors are cyclical, as their fundamental characteristics are influenced by the business cycle and carry structurally different economic exposures, qualifying some, like the value and size (small) factors, as pro-cyclical and others as defensive, such as quality and low volatility, while momentum, a more transient factor, tends to outperform during late cyclical stages.

Equity regional rotation: US, developed (DM) ex-US, emerging markets (EM)

While our global macro regime framework informs the relative allocation between equities and fixed income, additional macro drivers are modeled to inform the allocation between regions within equities, namely US, developed ex-US, and emerging market equities (**Figure 5**). Our tactical process to regional equity rotation is informed by relative growth momentum between regions, the global risk appetite cycle, as well as valuations in the US dollar cycle, which play an important role in influencing capital flows, exports, and earnings performance between regions. Combinations of these macro conditions lead to portfolio positioning, as illustrated in (**Figure 6**).

1. **US vs DM ex-US:** Overweight (underweight) DM ex-US when relative growth momentum favors regions outside the US, and the USD is over (under) valued
2. **EM vs DM:** Overweight (underweight) EM when risk appetite is rising (falling) and the USD is over (under) valued

Figure 5: Regional equity tactical allocation

Combining relative growth conditions and the US dollar cycle

	Regional equity allocation framework	
	Growth conditions	Identify relative cyclical conditions between regions. Overweight (underweight) regions with more (less) favorable growth conditions.
+	US dollar valuations	Identify long-term valuations in the US dollar. Overweight US equities (non-US equities) when US dollar is undervalued (overvalued).
=	Composite regional signal	Composite score providing overweight/underweight signal.

Source: Invesco Solutions analysis.

Equity factor rotation: Factors have been shown to be cyclical

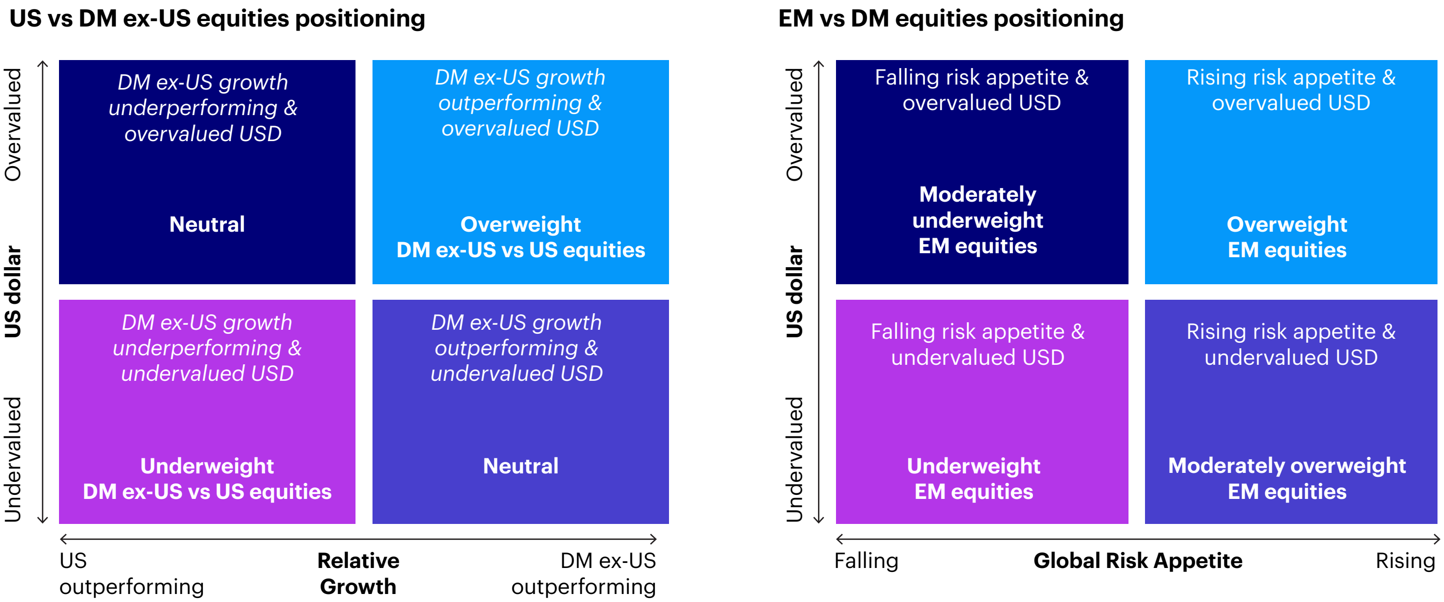
An influential driver of returns within our TAA framework is equity factor rotation. We argue that equity factors are cyclical, as their fundamental characteristics are influenced by the business cycle and carry structurally different economic exposures, qualifying some, like the value and size (small) factors, as pro-cyclical and others as defensive, such as quality and low volatility, while momentum, a more transient factor, tends to outperform during late cyclical stages. We believe these differences provide a strong economic rationale, which can be exploited through a rules-based investment process, to develop factor rotation strategies that aim to tilt the portfolio towards factors expected to outperform in each macro regime while reducing exposure to factors that are expected to lag the market. However, we believe it is important to maintain an appropriate level of diversification and construct portfolios with exposures to multiple factors, avoiding high concentration of a single factor for long periods of time.

Embedding tactical relative to strategic: TAA and SAA in action

Tactical allocations may deviate from the strategic allocation based on a given regime and tactical signals, shifting towards or away from equity or fixed income (~10% of the portfolio relative to the SAA), equity regions (~5%), risky or quality credit (~15%), and long or short duration (~ one year). For example, within a risk-off, contractionary regime and neutral regional equity signal, a combined TAA and SAA allocation would be neutral US versus developed markets (DM) ex-US, overweight government bonds versus credit, overweight quality credit, and long duration (**Figure 7**). Most of these overweights would reverse to underweights in a risk-on recovery regime, should the economy be anticipated to rebound.

Figure 6: TAA process: US vs DM ex-US and EM vs DM equities

Studying dollar valuations, risk appetite, and relative growth conditions



Source: Invesco Solutions. Invesco Solutions leading economic indicators represent broad measures of economic activity. US dollar valuation based on relative purchasing power parity framework on a basket of major foreign currencies. Global risk appetite measured via proprietary global risk appetite cycle indicator (GRACI).

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While our SAA is designed to move slowly and may still have had an overweight to credit as compared to government bonds due to historically low yields, in this contractionary COVID-19 example, the TAA can overweight duration within the fixed income portion of the portfolio to become more defensive.

A history of how regimes have shifted since 2017 shows how a dynamic portfolio could react when faced with unexpected changes in the macroeconomic environment (**Figure 8**). For example, in February of 2020, when the world began experimenting with a series of rolling economic shutdowns due to the COVID-19 pandemic that lasted the better part of two years, the regime signal quickly picked up a contraction from a prior period of recovery in 2019. While our SAA is designed to move slowly and may still have had an overweight to credit as compared to government bonds due to historically low yields, in this contractionary COVID example, the TAA can overweight duration within the fixed income portion of the portfolio to become more defensive. In June of 2020, despite many shutdowns still being in place, the regime signal correctly identified a recovery building after the sharp contraction. At the end of 2022, when most professional forecasters were forecasting a recession, the regime signal again correctly identified the recovery that was to occur in 2023. Our macro regime framework has historically anticipated turning points in the growth cycle by 3 to 6 months. While tactical in nature, the framework is not expected to correctly predict the prevailing economic environment every month, or specifically around the identification of a new regime. The benefits of this systematic approach tend to accrue on a multi-month or multi-quarter basis. However, the ability to update our indicators on a monthly basis allows the framework to quickly adapt and react to new information coming from financial markets or the economy.

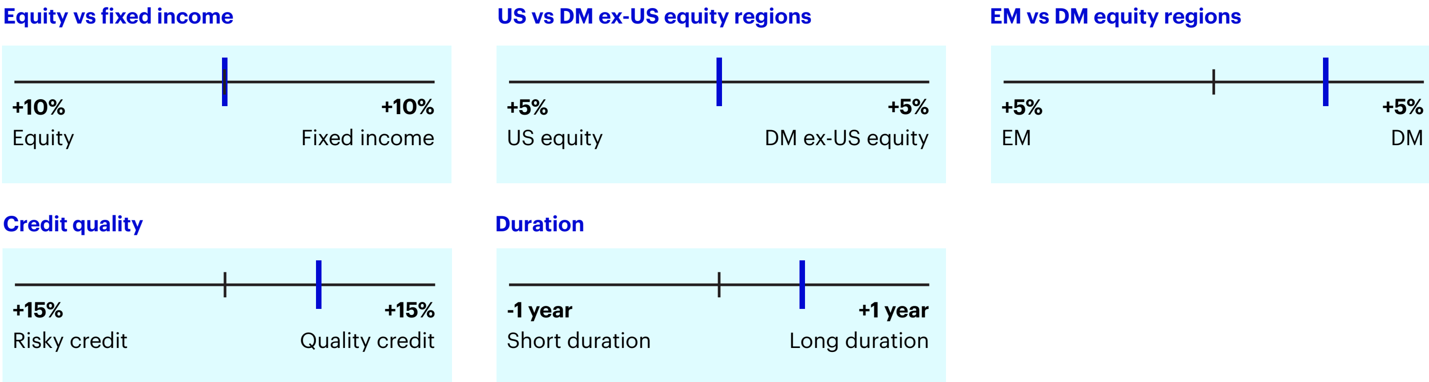
Figure 9 is a representative example of how these two allocations can be combined to create one portfolio that varies by regime. The overall equity of the Model Portfolio ranges from 60% in a recovery to 51% in a contraction, while the fixed income portion is lowest during an expansion (30%) and highest during a contraction (43%). With all of the levers of the portfolio, equity region, credit quality, and duration, moving in each regime, it is clear that these portfolios are dynamic in nature and respond to the signals behind the allocations depending on the macroeconomic and market environment.

Conclusion: Asset allocations can be both tactical and strategic

For investors seeking to efficiently invest over multiple time horizons, the Solutions framework for tactical and strategic asset allocation comes together within the Dynamic Model Portfolio series. By efficiently blending SAA and TAA in our time-tested investment process, long-only investors can gain exposure to both near- and short-term sources of alpha seeking to improve risk-adjusted returns.

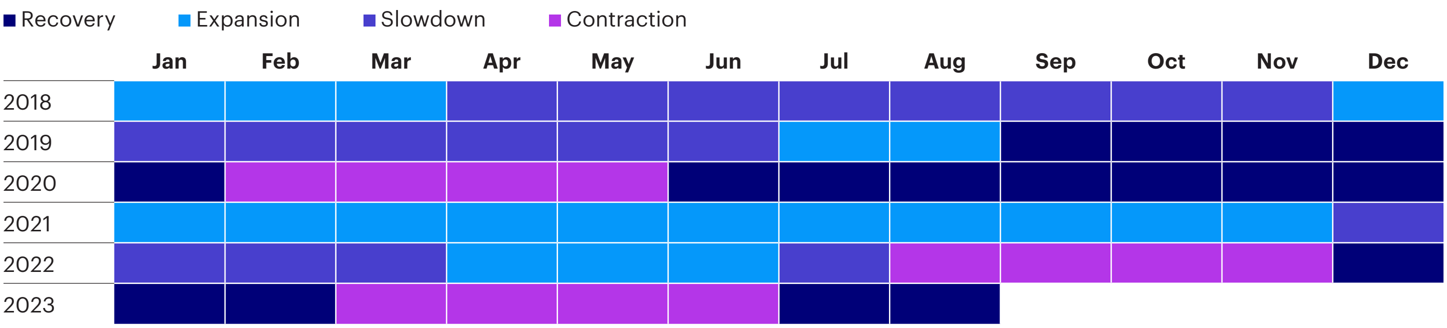
Figure 7: Tactical portfolio tilts

We position the model portfolios tactically based on our regime-based approach seeking to take advantage of the following active positioning against our SAA:



Source: Invesco, as of June 30, 2023. For illustrative purposes only.

Figure 8: Regime signal history



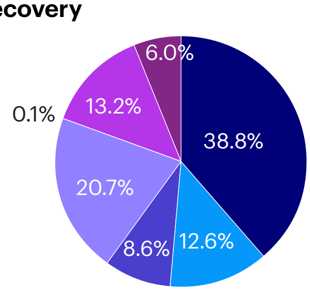
Source: Invesco, as of July 31, 2023.

Figure 9: Strategic + Tactical asset allocation

Combining macro, market and risk analysis: Representative example

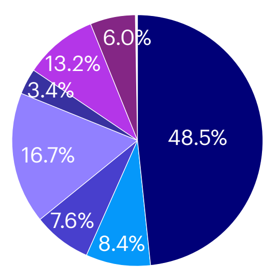
US equity | DM ex-US equity | EM equity | Risky credit | Quality credit | Government bonds | Alternatives

Recovery



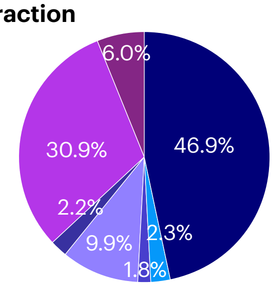
Active weights vs SAA[1] (%)		
US equity	-4.5	▼
DM ex-US equity	5.1	▲
EM equity	3.4	▲
Risky credit	12.0	▲
Quality credit	-10.6	▼
Government bonds	-5.4	▼

Expansion



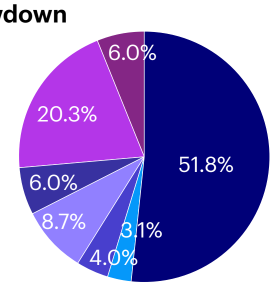
Active weights vs SAA[1] (%)		
US equity	5.3	▲
DM ex-US equity	0.9	▲
EM equity	2.3	▲
Risky credit	8.0	▲
Quality credit	-7.3	▼
Government bonds	-9.2	▼

Contraction



Active weights vs SAA[1] (%)		
US equity	3.7	▲
DM ex-US equity	-5.2	▼
EM equity	-3.5	▼
Risky credit	1.2	▲
Quality credit	-8.5	▼
Government bonds	12.3	▲

Slowdown



Active weights vs SAA[1] (%)		
US equity	8.6	▲
DM ex-US equity	-4.4	▼
EM equity	-1.2	▼
Risky credit	0.0	▲
Quality credit	-4.7	▼
Government bonds	1.7	▲

1 Representative SAA: US equity (43%), DM ex-US equity (8%), EM equity (5%), risky credit (9%), quality credit (11%), government bonds and cash (19%), and alternatives (6%). Risky credit is composed of high yield and broadly syndicated loans, while quality credit represents investment grade corporates. Alternatives are composed of event-driven and listed infrastructure.

Source: Invesco Solutions. Asset class exposures are shown for illustrative purposes only and do not represent a guarantee of similar exposures in the future.

Investment risks

The value of investments and any income will fluctuate (this may partly be the result of exchange rate fluctuations), and investors may not get back the full amount invested.

Invesco Solutions develops CMAs that provide long-term estimates for the behavior of major asset classes globally. The team is dedicated to designing outcome-oriented, multi-asset portfolios that meet the specific goals of investors. The assumptions, which are based on 5- and 10-year investment time horizons, are intended to help guide our strategic asset class allocations and should not serve as the basis or primary source for any investment decision. For each selected asset class, we develop assumptions for estimated return, estimated standard deviation of return (volatility), and estimated correlation with other asset classes. Estimates and targets reflecting our various assumptions concerning anticipated results are inherently subject to significant economic, competitive, and other uncertainties and contingencies. Forecasts of financial market trends that are based on current market conditions constitute our judgement and are subject to change without notice.

Important information

All information as of July 31, 2023, in USD, unless stated otherwise.

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