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Introduction to Regime-Based Asset Allocation

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Regime-based asset allocation (RBAA) is a dynamic asset allocation structure that utilizes macroeconomic awareness to protect against significant drawdowns. Its genesis can be traced to the 2008–2009 Global Financial Crisis, when investors sought out more-robust ways to manage away tail risk. It became clear, given the efficiency and illiquidity of many asset classes, that investors need to consider all four elements of a return distribution, not just return and standard deviation. Skew and kurtosis also need to be included into the risk analysis. This led to the recognition that, when compared to a static, "all-weather" asset allocation solution, a macroeconomically aware dynamic asset allocation structure could provide additional protection against significant drawdowns.

FOUNDATION OF RBAA

The 2008–2009 Global Financial Crisis exposed the weaknesses and limits to traditional approaches to diversification and also highlighted the importance of tail risk management. Portfolio managers

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sought ways to improve their asset allocation approaches to manage kurtosis and recognize the instability of asset class correlations without sacrificing performance. One approach to address this is by categorizing asset classes according to their behavior across different growth and inflation scenarios, with an emphasis on understanding transition points. The structure is predicated on assigning assets to risk buckets comprising growth, inflation, and deflation-sensitive assets.

Most studies agree that the majority of returns come from asset allocation. History also has shown us that it's the economy, not the markets, that ultimately drives returns over the medium

to long term. RBAA is founded on the premise that asset classes will perform differently under various economic scenarios referred to as regimes. As an example, investment-grade bond returns are inversely correlated to interest-rate changes. Commodity prices often will be driven by inflation expectations: Prices will rise when inflation expectations start to increase, and they will fall once inflation appears to have peaked.

Asset class behavior also can vary significantly over shifting economic scenarios. For example, business cycles tend to impact cyclical and noncyclical companies in markedly different ways, primarily due to sensitivities of consumers and producers to economic growth. Yet, although asset class performance varies with changing conditions, traditional asset allocation approaches make no effort to adapt to such shifts. Instead, traditional approaches seek to develop static, all-weather portfolios that optimize efficiency across a range of economic scenarios.

Different economic regimes produce significant impacts on various asset returns and risks, albeit of varying degrees. Dynamically rebalanced asset classes

Figure 1

MACROECONOMIC FRAMEWORK
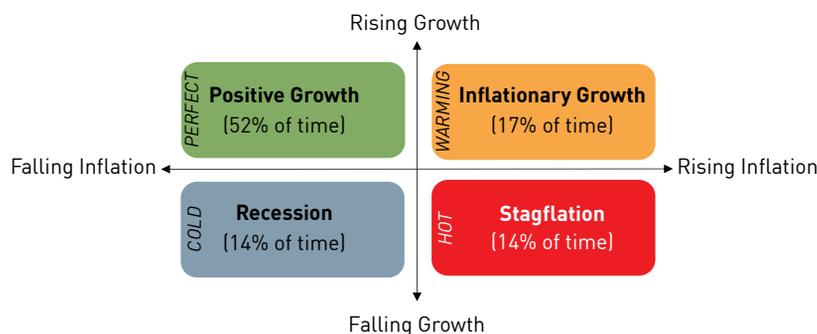
Sources: Fidelity (2020), Maloor and Sumsion (2018), Lim (2017), Sheikh and Sun (2012)

have an objective of increasing returns while reducing risk. A formal regime-based asset allocation strategy therefore could be an option for investors seeking to manage a portfolio across multiple market cycles.

IMPLEMENTATION OF RBAA

To implement RBAA, one needs to thoroughly research the various opportunities existing for the investor by collecting and analyzing the performance of regimes and asset classes. Regimes are determined mostly by assessing the relative differences between gross domestic product (GDP) growth and inflation.

Figure 1 provides a broad macroeconomic framework for assessing the state of the economy and mapping asset allocation decisions. Four basic economic scenarios known as regimes are the foundation of this framework. One could split these regimes into finer points and create more than four regimes, if desired.
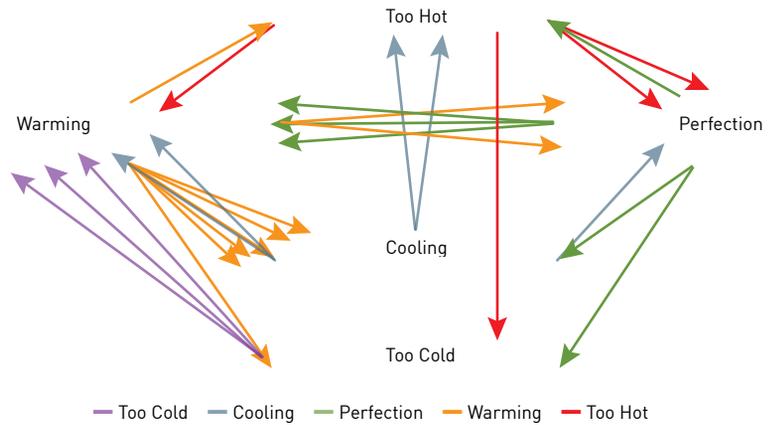
COMPONENTS OF AN RBAA MODEL

The main driver of medium-term market performance is the state of the economy. RBAA considers the relative rate of change between growth and inflation to define an economic regime, then proceeds to make asset allocation decisions.

The four basic economic regimes are based on distinct relationships between growth and inflation; they are: (1) recession, (2) positive growth, (3) inflationary growth, and (4) stagflation.

Recession: negative growth, low inflation. The bottom-left quadrant of figure 1 represents a recessionary phase in economic activity. This cycle tends to be accompanied by falling wages, which in turn compromise consumers' abilities to spend. To the extent that the general prices of goods and services are falling, we have a recession with deflationary price pressure. The 2008–2009 Global Financial Crisis is an example of the recession regime.

Figure 2

REGIMES FOLLOW SEVERAL PATTERNS

Too Hot · Warming · Perfection · Cooling · Too Cold

Legend: Too Cold — Cooling — Perfection — Warming — Too Hot

Source: BNY Mellon (2011)

Positive Growth: disinflationary growth, low inflation. When the economy comes out of a recession, and growth momentum is sustainably larger than its inflation equivalent, real growth starts to increase. This is an ideal economic environment, in which the quality of growth is high. For example, after hitting bottom in the middle of 2009, the global economy started to recover and went into a positive growth regime for a 36-month period between March 2012 and February 2015.

Inflationary Growth: positive growth, high inflation. As the economy continues to heat up and inflation rises beyond a certain threshold, the quality of growth starts to deteriorate. In other words, real growth declines. In this regime, each additional unit of output is produced at increasingly higher costs. In this environment, investment returns from risky assets are also likely to be falling. Since 2000, the world has witnessed a few short-lived episodes in this regime (e.g., the U.S. economy from October 2007 through March 2008, and from May 2011 through November 2011).

Stagflation: negative growth, high inflation. When inflation is left unchecked and spirals out of control, costs of production for companies and disposable income of consumers could be eroded by price pressures. In other words, inflation eats into growth, and

the economy goes into a rare and horrible combination of stagnation and high inflation, called stagflation. There have been several short-lived stagflations in modern times. Classic examples are the global economy before and after the oil embargo of 1973; and, leading up to the March 2009 peak of the Global Financial Crisis, the U.S. economy went into stagflation, from June 2008 to January 2009 (Lim 2017).

Managing through these economic cycles is not as simple as it may appear from the above regime descriptions. In fact, practitioners have observed that it is far more complex than to think of the economy ebbing and flowing in a neat, sequential pattern of heating and cooling. In fact, regime transitions have varying durations and do not follow an orderly pattern.

A core challenge faced by RBAA practitioners is accurately aligning portfolio construction and ongoing management according to an understood regime. Counterintuitively, RBAA does not seek to make weightings adjustments on a short-term basis but will adjust allocations more frequently than a static strategic asset allocation framework.

Some might argue that a challenge of equal proportions is correctly identifying an economic regime when using imperfect, backward-looking data that is often

restated by government agencies months after being released.

APPLICATION OF AN RBAA MODEL

A key feature of RBAA is that it seeks to keep each portfolio's risk profile constant throughout any economic condition by systematically reallocating assets when the economy or the markets substantially change. This process of proactively determining a new asset or factor allocation target for portfolios is referred to as "re-optimization."

The portfolio manager continuously monitors which economic regime is in effect and will utilize a multitude of data to manage portfolios systematically, ensuring that asset allocations are always optimal for the given economic environment. Some practitioners of RBAA utilize factor models in lieu of traditional asset classes. They inevitably will back into an asset allocation, but their primary focus is on obtaining the preferred factor exposures. In either approach, the focus is on mid-term performance, not short-term performance. RBAA is not meant to be a tactical asset allocation solution.

Ideally, a portfolio manager may re-optimize a client's portfolio when there is a change in economic conditions.

Investors can expect such changes every few years, depending on the RBAA model in use, and for the changes to the portfolio to be significant. In turbulent times, changes to a portfolio could be more frequent. For example, portfolio changes could have occurred multiple times within the year leading up to the 2008 Global Financial Crisis as four regime changes occurred between November 2007 and February 2010.

Because the expected returns and the risk profile (or volatility) of each asset class vary significantly across the four economic regimes, it is imperative to adjust the composition of any investment portfolio when an economic regime change is anticipated or occurs.

For example, when the economy moves from positive growth to a recession, an optimized portfolio's exposure to equities will decrease and its exposure to fixed income (bonds) and gold will increase. In this scenario, the equity portion will contain more-defensive sectors such as consumer staples.

As depicted in figure 3, the U.S. economy was moving from positive growth to inflationary growth as early as late 2007. This period was characterized by positive growth with an inflation rate that was higher than 3.1 percent.

Six months later, the economy shifted from inflationary growth to stagflation. The first warning sign appeared in May 2008, when U.S. industrial production registered its first negative report of −1.0 percent year over year (YoY). It turned out that growth momentum had turned negative while headline inflation was around 4.1 percent and rising. By the time Lehman Brothers failed in September 2008, U.S. industrial production had deteriorated from −1.0 percent to a low of −8.3 percent YoY, and the economy had been showing negative growth for five months.

Following the Lehman bankruptcy, headline inflation managed to stay around
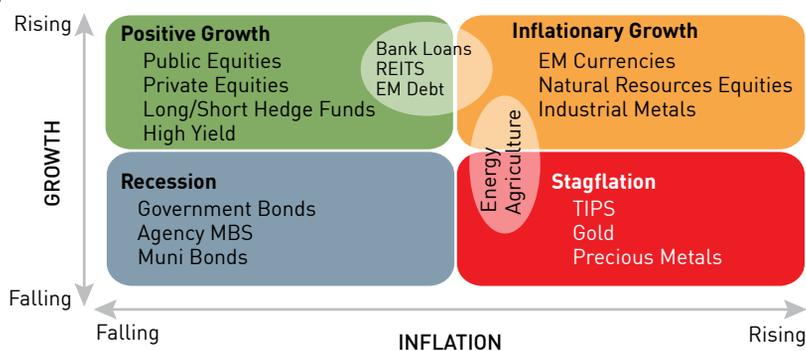
Figure 3

REGIME PERFORMANCE DURING A STRESS TEST
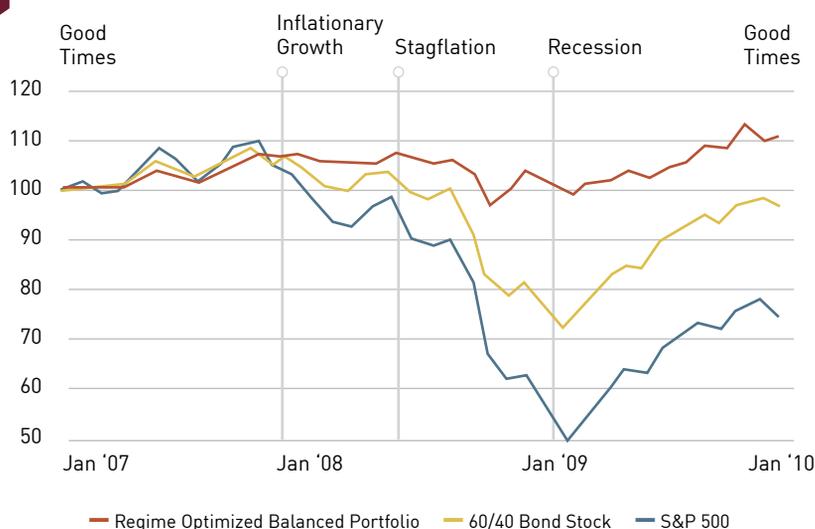
Source: Lim (2017)

Figure 4

OPTIMAL ASSET CLASSES BY REGIME

Sources: Cromwell and Meagher (2011)

5 percent for some time. It was not until December 2008 that the first negative inflation momentum was observed. Thereafter, inflation started to dip rapidly, and by February 2009, the U.S. economy had shifted from stagflation to recession.
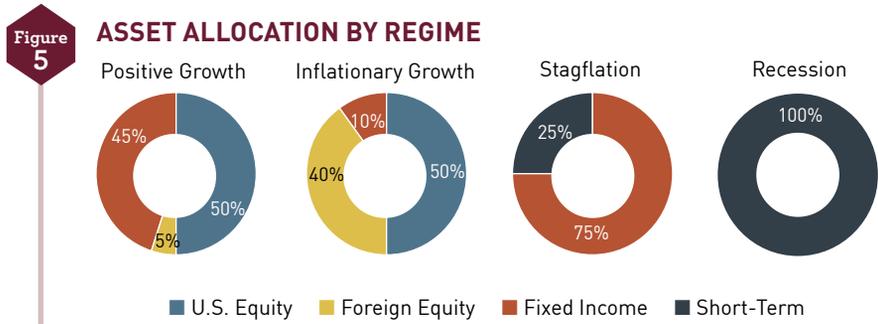
Ideally, a portfolio manager utilizing RBAA would have spotted the first signs of trouble and started reducing portfolio risks as early as May 2008, when the economy went into stagflation. By December 2008, when negative inflation momentum was observed, the investment algorithm would have called for another shift, from a stagflationary portfolio to a recessionary portfolio.

MAPPING ASSET CLASSES TO REGIME CHARACTERISTICS

Figure 4 shows how a portfolio manager may broadly consider mapping asset classes to regimes and transition points between regimes. A critical element in the application of RBAA is correctly interpreting economic data, as well as understanding the nuances of each regime and which asset classes may perform the best during each regime.

Many practitioners of RBAA also look at the "regime map" shown in figure 4 from a business cycle perspective, because each regime is distinctive in its own way. Certain patterns have tended to repeat over time, even as three-sigma events have disrupted trends in the short term. Changes in these patterns historically have provided a relatively reliable guide to recognizing different phases of an economic business cycle. Early, mid-, late, and recessionary cycles relative to sectors are another strategy sometimes utilized as part of RBAA.

Early cycle: Historically, the early cycle is characterized by low interest rates and is the best-performing for investment. Consumer discretionary, financials, and real estate usually have outperformed the broad market while communication, utilities, and energy sectors have lagged.

Figure 5 — ASSET ALLOCATION BY REGIME

Positive Growth: 45% Fixed Income, 5% Foreign Equity, 50% U.S. Equity
Inflationary Growth: 10% Fixed Income, 40% Foreign Equity, 50% U.S. Equity
Stagflation: 25% Short-Term, 75% Fixed Income
Recession: 100% Short-Term

Legend: ■ U.S. Equity ■ Foreign Equity ■ Fixed Income ■ Short-Term

Sources: Fidelity (2020), Maloor and Sumsion (2018), BNY Mellon (2011)

Mid-cycle: A mid-cycle of slower growth emerges as interest rates start to rise and interest-rate sensitive sectors start to wane. Information technology generally will lead in performance and materials and utilities will lag the broad market, but neither by much. Generally, there is not a lot of movement in terms of significant sector outperformance; the broad market will tend to outperform most sectors, and selective active allocations may be more prudent during this time.

Late cycle: The late cycle is defined by a mature economy, where signs of an economic slowdown are on the horizon. Revenues tied to basic needs, particularly in health care, consumer staples, and utilities, start to become appealing sectors. Energy likely would be a best performer.

Recessionary cycle: Finally, the recessionary cycle arrives. This tends to be the shortest cycle, lasting less than a year on average, and it is characterized by economically sensitive sectors that underperform relative to the broad market. Consumer staples, utilities, and health care will tend to outperform, and industrials, information technology, and real estate will tend to underperform.

The portfolio manager must be aware of the current market regime but mustn't position the portfolio for one state or for the long-term average, which could lead to substandard results if another regime ensued for an extended period. For example, a hypothetical portfolio for an investor in a recessionary regime could include nearly a 100-percent allocation

to short-term U.S. investment-grade bonds. Meanwhile, the same portfolio in a positive growth regime could include more than 50-percent allocation to equities.

Optimal portfolios relative to each economic regime lie on the efficient frontier and are substantially different from one another. Dynamically recognizing and managing the transitions between regimes is a critical skill for the portfolio manager. Figure 5 shows a hypothetical high-level guide for the portfolio manager for the allocation of risk to non-risk assets by regime.

CHALLENGES OF RBAA

Utilizing a regime-based framework may be additive to the portfolio construction and management process, but three hurdles lie between its theory and practice:

1. Capturing the complex nature of the interaction between economic drivers and assets. Developing a regime-based model begins by establishing the relationship of asset class performance to economic regimes, which by definition include multiple factors that may all be changing simultaneously.
2. Modeling the behavior of different asset classes in different economic regimes. Once we have developed relationships between economic factors and asset classes, we can model the regime-dependent returns of various asset classes.
3. Establishing the level of economic foresight necessary to be successful.

Successful regime investing is predicated on modeling the relationships between asset returns and economic performance drivers. Research shows that it is important to model relationships that are both dependent and nonlinear. Modeling such relationships is complex for both conceptual and practical reasons. For example, a simple scatter plot of S&P 500 returns and U.S. real GDP growth may not at first reveal much of a relationship, at least not a clearly linear one. But advanced nonlinear statistical techniques can help to identify and define this relationship. As prospects for economic growth improve, equity prices tend to rally. Beyond a certain threshold, however, the relationship starts to break down.

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Of course, asset class and factor performance can be driven by more than just growth rates and other macroeconomic fundamentals. Financial markets can reflect extreme optimism or pessimism—as expressed in valuations—over long periods of time, rather than pure economic fundamentals. In such cases, regime-based frameworks may prove inadequate for the purposes of developing robust and resilient portfolios.

Successfully developing and executing a regime-based asset allocation strategy does not require perfect forecasting skills. Even imperfect foresight is not necessarily easy to achieve.

Good economic foresight, systematically implemented in a RBAA framework, can add value. Good foresight would be defined as forecasting the direction of economic changes rather than their exact magnitude. The former is much more important in determining the success of dynamic regime response. The more inaccurate the economic foresight, the lower the value added by the framework, as measured by the information coefficient. Developing even imperfect economic foresight is no small accomplishment.

Even with perfect economic foresight—the correct forecasting of the direction as well as the magnitude of economic changes—asset class response can be extremely difficult to capture. This is particularly true when the economy and financial markets experience new paradigms relative to history. In such circumstances, the relationship between economic factors and financial markets can change quickly, leading to potential underperformance of a regime-based approach relative to a static asset allocation model.

CONCLUSION

In light of the 2008–2009 Global Financial Crisis, institutional and even ultra-high-net-worth investors are increasingly interested in nontraditional approaches to portfolio construction that are both intuitive and forward-thinking. RBAA is differentiated in that it is data-driven and may not always follow standard capital-based asset allocation rules. It also doesn't depend on the age, risk appetite, investment horizon, or diversification of the investor.

The availability of new data prompts portfolio managers to look at rebalancing their portfolios. At a minimum, RBAA allows a portfolio manager to better assess total risk across all four moments of a return distribution by understanding how changes in growth and inflation may affect specific asset prices. Relative to a static, all-weather portfolio, RBAA can be an additive tool in the overall portfolio management process. Constructing a regime-based asset allocation strategy, in conjunction with other traditional tools, could be a productive approach to maintaining a disciplined, unemotional approach to portfolio management. ⬡

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