It is a well-recognized empirical observation that different asset classes respond differently to different economic drivers. For example, fixed income assets tend to respond to anticipated movements in interest rates, among other factors. Bond prices fall when interest rates rise. Commodities respond to, and sometimes drive, inflation expectations. Commodity prices can rise fast when inflation expectations are rising, and they can fall quickly once inflation appears to have peaked.

It is also well-recognized that asset class behavior can vary significantly over shifting economic scenarios. For example, business cycles tend to impact cyclical and non-cyclical companies in markedly different ways, primarily due to sensitivities of consumers and producers to economic growth. Yet, while asset class performance certainly varies with changing conditions, traditional asset allocation approaches make no effort to adapt to such shifts. Instead, traditional approaches seek to develop static “all-season” portfolios that optimize efficiency across a range of economic scenarios.
In this piece, we define economic trends in their totality as a single complex system that changes over time to produce what we call economic “regimes.” And we investigate whether dynamic asset allocation can effectively respond to economic regimes at the portfolio level to provide better long-term results when compared to static benchmark-based approaches.1

Assessing the Potential Benefits of Regime-based Investing

Based on our analysis, we arrive at three key conclusions about regime-based investing:

1. Economic regimes can be defined in terms of four factors, which tend to dominate financial market performance: economic growth, inflationary expectations, monetary policy and economic slack. Developing insight on near-term changes in these four factors—rather than their absolute levels—can provide an effective framework for executing a regime-based asset allocation policy.

2. No single portfolio is resilient to all economic regimes. The concept of a static “all-season” portfolio is a myth. Asset class performance varies significantly across different regimes, be they economic, regulatory, political or otherwise. For example, portfolios resilient to deflationary environments will underperform during periods of high inflation, just as portfolios that hold up well in conditions of high inflation tend to lag at times of very low inflation or outright deflation. Different economic regimes call for different asset allocations.

3. Regime-based asset allocation may have a significant impact on portfolio efficiency. Ignoring shifting economic regimes can exact a heavy toll on portfolio performance, exposing it to drawdowns during periods of heightened turbulence and volatility. A good example of such a period is the Great Recession of 2008, where a static benchmark-based portfolio, allocated 15% to commodities, 15% to Treasury bonds, 15% to investment-grade credit, 40% to equities and 15% to U.S. dollar futures, would have lost approximately 17%. By way of comparison, a regime-oriented portfolio would have lost a relatively modest 7%.

The backtested results coincide with the broader findings of our research. Addressing changes in economic regimes through dynamic asset allocation may enhance performance throughout market cycles, especially in mitigating downside risk in extreme “tail event” scenarios. For a hypothetical portfolio, we find that a regime-based asset allocation approach might improve real returns from -3.9% (for the static strategy) to +7.0% in a severe recessionary scenario coupled with deflation. In a high inflation scenario, a regime-oriented portfolio could improve hypothetical real returns from -1.6% for the static portfolio to +5.8%.

Challenges to a Regime-based Investment Approach

While we can be certain that assets and portfolios respond to economic regimes and can demonstrate that a regime-based framework may add value over time, there still remain two hurdles between theory and practice. First, we need to capture the complex nature of the interaction between economic drivers and assets. Second, we need to establish the level of economic foresight necessary to be successful.

• Regime-based investing requires understanding the state-dependent relationship between financial markets and the broader economy and devising a method of modeling the nonlinear nature of such relationships.

Successful regime investing is predicated on modeling the relationships between asset returns and economic performance drivers. Our research shows that it is important to model relationships that are both state-dependent and nonlinear. Modeling such relationships is quite 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 (Exhibit 1, on the following page). But, advanced nonlinear statistical techniques can help in identifying and defining this relationship. While prospects for economic growth improve, equity prices tend to rally. Beyond a certain threshold, however, the relationship starts to break down.

1 Details of our analysis, including assumptions made, will be found in a forthcoming whitepaper.
Of course, asset class 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 their 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. Yet even imperfect foresight is not necessarily easy to achieve.

Our framework indicates that good economic foresight, systematically implemented in a coherent regime-based asset allocation framework, can add value. We define good foresight 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 worse the accuracy of the economic foresight, the lower the value added by the framework, as measured by the information coefficient\(^2\) (Exhibit 2).

But developing even imperfect economic foresight is no small accomplishment, given the confluence of factors impacting the economy. In fact, we can glean some appreciation for the skill necessary to add value using a regime-based approach by considering the information coefficient associated with imperfect foresight. If, as commonly assumed, an upper quartile equity manager is considered to have an information coefficient of 0.10, then our imperfect economic forecaster, with an information coefficient of 0.41, has four times the “skill” level of an upper quartile equity manager.

And even with perfect economic foresight—correctly forecasting not only the direction but 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 underperformance of a regime-based approach developed on historical data compared to a static asset allocation.

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\(^2\) The information coefficient calculates the correlation between actual and forecasted returns, using our regime-based asset allocation framework. It is often considered to be a measure of “skill” associated with the manager or investment strategy.
Illustrating the Results of a Regime-based Investment Approach

Still, despite the complexity of the challenge, our work indicates that regime-based investing may add value to portfolios over time. We offer the following preview of how regime analysis may be implemented to improve portfolio results.

Step 1: Identify the relationship between economic factors and financial markets.

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. We note that asset classes show unique sensitivities to economic factors—every asset class does not respond to every factor. For example, in modeling expected commodity returns, the primary influence in our framework comes from real GDP growth and inflation, as the equation in Exhibit 3 shows. It supports a strong relationship between commodity returns and changes in U.S. real GDP growth, when GDP growth is extremely negative, but the relationship moderates beyond a threshold of -2.65%.

This threshold effect can be explained in a number of ways—one of which is the growing influence of emerging markets on commodity prices. Our equation suggests contracting U.S. real GDP exercises greater influence on commodity returns below the -2.65% threshold. It implies that U.S. GDP would have to fall by more than 2.65% year-over-year, indicating a severe and possibly global recession, to detract significantly from commodity returns. At normal levels of growth or even mild recessions, the impact of U.S. growth on commodities diminishes. It hints at a possible decoupling effect, where demand from emerging markets supports commodity prices, as long as the global economy avoids a deep recession.

Our forthcoming whitepaper includes equations and explications of the relationships between each of our key asset classes and economic factors.

Step 2: Model the behavior of different asset classes in different economic regimes.

Once we have developed relationships between our economic factors and asset classes, we can model the regime-dependent returns of various asset classes. Exhibit 4 outlines six possible economic regimes and ranks asset classes for their relative performance potential, from best to worst, within those regimes.

**Exhibit 3: Relationship between Commodity Returns and Real GDP**

Commodities return = -0.09 + 1.18 * max(0, Real GDP growth + 2.65%) - 4.76 * max(0, - 2.65% - Real GDP growth) + 7.64 * max(0, Inflation rate + 1.12%)

R-Squared = 51.1%

Source: J.P. Morgan Asset Management. For illustrative purposes only.

**Exhibit 4: Relative Asset Class Performance Under Economic Regimes**

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Severe Recession</th>
<th>Double Dip</th>
<th>No Growth</th>
<th>Moderate Growth</th>
<th>Strong Recovery</th>
<th>Strong Recovery w/ Inflation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Best performer</td>
<td>Dollar</td>
<td>Dollar</td>
<td>Credit</td>
<td>Equity</td>
<td>Equity</td>
<td>Commodities</td>
</tr>
<tr>
<td>Above median performer</td>
<td>Treasury</td>
<td>Treasury</td>
<td>Treasury</td>
<td>Credit</td>
<td>Credit</td>
<td>Dollar</td>
</tr>
<tr>
<td>Median</td>
<td>Credit</td>
<td>Credit</td>
<td>Equity</td>
<td>Treasury</td>
<td>Commodities</td>
<td>Equity</td>
</tr>
<tr>
<td>Below median performer</td>
<td>Equity</td>
<td>Equity</td>
<td>Dollar</td>
<td>Commodities</td>
<td>Treasury</td>
<td>Treasury</td>
</tr>
<tr>
<td>Worst performer</td>
<td>Commodities</td>
<td>Commodities</td>
<td>Commodities</td>
<td>Dollar</td>
<td>Dollar</td>
<td>Credit</td>
</tr>
</tbody>
</table>

Source: J.P. Morgan Asset Management. For illustrative purposes only.
regimes. It is clear from this analysis that shifts in asset class leadership are so broad and varied that no static portfolio weighting could be optimal across all regimes. Strictly on an intuitive basis, dynamic regime-based asset allocation appears to be a logical response to shifting economic regimes.

Step 3: Assess the effect of different economic regimes at the total portfolio level and optimize portfolio allocations depending on economic insight and risk constraints.

The next step is to determine the impact of different economic regimes at the total portfolio level and optimize portfolio allocations depending on economic insight and an investor’s risk constraints. Our finding is that, for a hypothetical diversified portfolio, regime-based asset allocation has the potential to substantially increase portfolio efficiency. Exhibit 5 compares the implied returns of a static benchmark-based policy to those of a dynamic regime-based policy, under the regimes outlined in Exhibit 4 (on the previous page). In each case, our model dynamically adjusts asset allocation to target optimal efficiency under each regime. Purely measured by portfolio returns, the regime-based portfolio produces superior results, especially in the extreme economic scenarios where traditional static approaches show the least resilience.

A Critical Caveat

It is important to note in conclusion that we do not advocate abandoning benchmark-based investing. Institutional investors set their portfolios’ strategic benchmarks based on a desire to match liabilities or on other equally important strategic goals. Within these broad objectives, however, we argue that investors may be handicapping their portfolios by being regime agnostic—which is what a strategic benchmark is. Instead, we believe that investors would benefit from being “regime aware” and allowing themselves the freedom to adjust allocations around a strategic benchmark in response to shifts in the macroeconomic environment.

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**EXHIBIT 5A: IMPLIED PORTFOLIO PERFORMANCE UNDER DIFFERENT ECONOMIC REGIMES**

![Graph showing implied portfolio performance under different economic regimes.]

3 Returns based on expected performance for each asset class under respective regimes.

Source: J.P. Morgan Asset Management. For illustrative purposes only.

Note: Asset classes are represented by the following indexes: Equities: S&P 500 Price Index; Credit: Barclays Capital Baa Credit Index; Treasuries: Barclays Capital All Treasury Index; Commodities: Commodity Research Bureau Future Price Index; Dollar: United States Dollar Index Futures.