

Regime change: Implications of macroeconomic shifts on asset class and portfolio performance

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It is a well recognized empirical observation that different asset classes respond differently to different economic drivers. Fixed income assets tend to respond to anticipated movements in interest rates; their 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 when inflation appears to have peaked.

It is also recognized that asset class behavior can vary significantly over shifting economic scenarios. Business cycles tend to impact cyclical and non-cyclical companies in markedly different ways, for example, primarily due to sensitivities of consumers and producers to economic growth.

Key presentation takeaways

- Economic regimes can be defined in terms of four key economic factors – GDP growth rate, inflation, monetary policy and the unemployment rate – which have a nonlinear relationship to financial asset returns.
 - No single strategic allocation is resilient to all economic regimes – the concept of a static “all season” portfolio is a myth.
 - Adopting a regime-based allocation policy within an overall strategic portfolio may significantly enhance the portfolio’s efficiency, particularly in the extreme “tail event” regimes of recession and stagflation.
 - Developing and implementing a regime-based allocation policy does not require perfect forecasting skills.
 - Anticipating the direction of regime change matters more than predicting the absolute rate of change in the four factors.
 - Even developing such imperfect foresight is not easy, however, given the openness and complexity of today’s U.S. economy.
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While asset class performance varies under different 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 – or regimes, which we define as the state of the national economy (recession, expansion, etc.) as determined by prevailing macro trends. Yet no single portfolio is resilient to all regimes – the concept of a static “all season” portfolio is a myth. Portfolios resilient to deflationary environments will likely underperform during periods of high inflation and vice versa. Different economic regimes call for different asset allocations.

Regime aware

Regime-based investing is distinct from tactical asset allocation. Tactical asset allocation is shorter term, higher frequency (i.e., daily or monthly) and driven primarily by valuation considerations. Regime-based investing targets a longer time horizon (i.e., a year or more) and is driven by changing economic fundamentals. It straddles a middle ground between strategic and tactical. A regime-based approach is designed to give investors the flexibility to adapt to changing economic conditions within a benchmark-based investment policy.

Economic regimes can be defined in terms of four key factors which tend to dominate financial market performance: economic growth, inflation rates, monetary policy and labor market slack. Developing insight on the direction of 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. **Exhibit 1** illustrates the impact of a regime-oriented asset allocation framework assuming perfect economic foresight on the probability distribution of portfolio returns. A regime-oriented approach reduces the negative skew and kurtosis of the distribution of returns. Both contribute towards making the overall distribution more attractive for the investor, thus illustrating the power of an effective regime-based asset allocation approach.

Modeling non-linear trends

Successful regime investing is predicated on modeling the relationships between assets and economic performance drivers. Equities, for example, tend to do well in environments featuring rising growth rates as well as falling inflation. We can say that equities are “state dependent” in that they respond to the state of the economy as defined by such factors. At the same time, we also recognize that financial markets do not always react to changes in the economy in an orderly or well-defined fashion. In times of extreme market stress, historical correlations among asset classes tend to break down. The term we use to describe relationships that change character beyond certain thresholds is “non-linear.”

In non-linear relationships, two variables may be positively correlated under one set of conditions, but show a lower or even negative correlation under different conditions.

EXHIBIT 1

Regime-based distribution may be more attractive than the simple “static” approach

Portfolio performance statistics [%]

	MEAN	MAX.	MIN.	STD. DEV.	SKEWNESS	KURTOSIS
Static portfolio	6.7	26.8	-18.1	8.0	-0.61	3.80
Regime-based [perfect foresight]	8.5	27.6	-13.9	8.4	-0.25	2.80
Regime-based [imperfect foresight]	8.9	27.6	-7.7	7.7	-0.06	2.66

Source: J.P. Morgan Asset Management. Based upon historical performance returns back-tested from September 1984 through Dec 2010. Imperfect economic foresight is defined as (perfect economic foresight) x 0.5. Past performance is not indicative of future results. Total return is gross of fees and assumes the reinvestment of income.

Traditional analysis often overlooks such relationships (due to zero overall correlation) and mistakenly assumes there is no definable relationship at all. Modeling non-linear relationships is quite complex, for both conceptual and practical reasons. For example, when one looks at a simple scatter plot of the relationship between S&P 500 returns and GDP growth, at first there may not seem to be much of a relationship at all, at least not a clearly linear one (**Exhibit 2**). Applying a non-linear model, however, helps us define this relationship: as prospects for economic growth improve, equity prices tend to rally, but beyond a certain threshold this relationship, too, starts to break down.

EXHIBIT 2

Relationship between economy and asset performance is not straightforward

Traditional approach, which looks at levels, produces lowest R²

$$\text{S\&P 500 return} = -1.84\% + 2.55 \times \text{GDP growth}$$

R² = 12.0%

Regressing on changes in real GDP growth [shown on chart] improves results

$$\text{S\&P 500 return} = 5.90\% + 2.31 \times \Delta \text{GDP growth}$$

R² = 16.0%

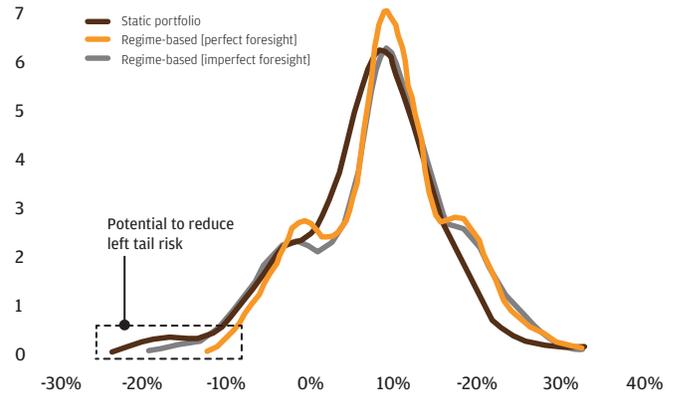
Non-linear regression on changes has the highest efficacy

$$\text{S\&P 500 return} = 9.80\% - 6.44 \times \text{Max} [0, -1.26\% - \Delta \text{GDP growth}]$$

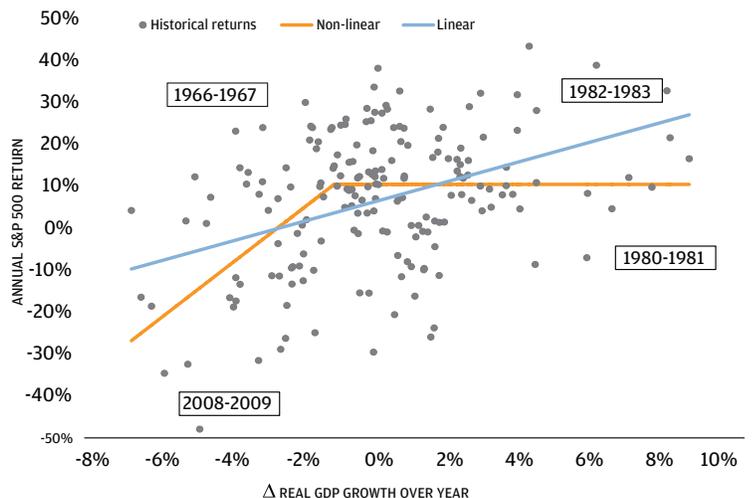
R² = 22.4%

Source: J.P. Morgan Asset Management. For illustrative purposes only. Periods of reference are: September 1966 - September 1967, September 1980 - September 1981, September 1982 - September 1983, and March 2008 - March 2009.

Back-tested return distributions



The impact of incrementally higher real GDP on equity prices begins to decline beyond a certain threshold. This could be explained as a reaction of markets pricing in potentially tighter monetary policy or a simple cyclical squeeze in profit margins, both of which can lead to reduced corporate profits. Of course, asset class performance can be driven by more than just economic fundamentals (as indicated by low R-squared values of some of our equations). In particular, changes to valuation – price/earnings ratios for equities, for example – are often a significant driver of performance. It is possible for financial markets to reflect extreme optimism or pessimism (from a valuation perspective) for long periods of time, rather than pure economic fundamentals.



Potential and pitfalls

Developing imperfect economic foresight is not necessarily straightforward given the confluence of factors impacting the economy. It is important not to underestimate the complexity of the challenges of foresight – or overstate its power to capture returns. Even with perfect economic foresight (i.e., correctly forecasting the direction and 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 investing approach developed on historical data.

Once we have developed relationships between our economic factors and asset classes, we can model the regime-dependent returns of various asset classes. **Exhibit 3** outlines six possible economic regimes, defined in terms of U.S. real GDP growth, headline inflation, Federal Funds rate and unemployment, and ranks nine dollar-denominated asset classes for their relative performance potential, from best to worst, within those 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.

The next step is to assess the impact of different economic regimes at the total portfolio level and optimize portfolio allocations depending on economic insight and the investor’s risk constraints. Our finding is that, for a hypothetical diversified portfolio, regime-based asset allocation has the potential to increase portfolio efficiency significantly.

Exhibit 4 compares the results of a static benchmark-based policy to those of a regime-based policy under the regimes outlined above. The optimized portfolios for each regime overweight those asset classes most likely to perform well in the given economic environment and underweight those most likely to perform poorly, allowing for the risk constraints specified by the investor. Purely measured by portfolio returns, the regime-based portfolio produces superior results, especially at the “tails,” where traditional static approaches show the least resilience – the extreme economic scenarios of severe recession or overheated recovery with inflationary pressures. The static portfolio appears to be best structured for periods of mild to normal growth.

EXHIBIT 3
Asset class performance varies under different economic scenarios

Projections over the year to February 2012

	“Severe Recession” with deflation	“Recession” with deflationary pressures	“Stagnant” economy	“Moderate” economic recovery	“Strong” economic recovery	“Stagflation” below trend growth with high inflation
Best	Treasury	Treasury	Treasury	Real estate	EM Equity	Gold
2	Gold	Credit	Real estate	Equity	Real estate	EM Equity
3	Credit	Hedge funds	Credit	Private equity	Private equity	Commodities
4	Hedge funds	Gold	Hedge funds	Credit	Equity	Real estate
Median	Equity	Real estate	Equity	EM Equity	Hedge funds	Hedge funds
6	Commodities	Equity	Private equity	Hedge funds	Credit	Treasury
7	Private equity	Private equity	EM Equity	Treasury	Gold	Private equity
8	EM Equity	Commodities	Commodities	Commodities	Commodities	Equity
Worst	Real estate	EM Equity	Gold	Gold	Treasury	Credit

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

Regime aware flexibility complements strategic rigor

Institutional investors set their portfolios' strategic benchmarks based on a desire to meet liabilities and other 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 could benefit from being "regime aware" and allowing themselves the freedom to adjust allocations around the strategic benchmark in response to shifts in economic regimes.

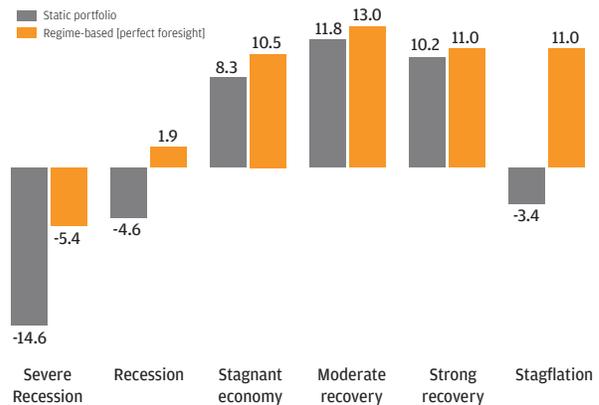
EXHIBIT 4

Optimal portfolios for individual regimes

Asset class allocations [%]

	U.S. EQUITIES	E.M. EQUITIES	TREASURIES	CREDIT	PRIVATE EQUITY	COMMODITIES	REAL ESTATE	HEDGE FUNDS	GOLD
Static portfolio	39.9	10.0	15.0	15.0	5.0	5.0	5.0	5.0	0.1
Severe recession	39.9	0.0	25.0	25.0	0.0	0.0	0.0	5.1	5.0
Recession	29.9	0.0	25.0	25.0	0.0	0.0	5.0	15.0	0.1
Stagnant economy	39.9	0.0	25.0	15.1	0.0	0.0	15.0	5.0	0.0
Moderate recovery	45.8	10.0	9.2	25.0	5.0	0.0	5.0	0.0	0.0
Strong recovery	39.9	15.2	14.9	15.0	5.0	0.0	5.0	5.0	0.0
Stagflation	29.9	20.0	11.8	5.0	0.0	15.0	8.3	5.0	5.0

Projections over the year to February 2010 [%]



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

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