

# Regime-Based Portfolios

## Using patterns from the past as a guide to the future

Wouldn't it be convenient if all life's experiences could be assigned to distinct categories, and cleanly filed away for reference? In reality, there are no such clear categories and even if there were, most memories would belong to more than one of them. The same fact applies when we try to assign regime labels to the economic events of history. Regimes are nuanced, and their labels are ambiguous.

The concept of a 'regime' is useful for investing. It refers to dynamics that are different from average, and which are expected to prevail for some period of time. Creating a regime-specific optimal portfolio requires estimates for risk and return, which we can compute as weighted averages of what happened to assets in the relevant past.

Suppose we are concerned about a regime of high inflation and low growth. The conventional approach is to set thresholds and identify periods when inflation was greater than 4% and growth was also less than 1%, for example. Choosing these thresholds is rather arbitrary, and it is also possible that we end up with very few events, or none. Moreover, does it make sense to give full weight to data points that are just barely above the threshold, and completely ignore those just below it? And should we not pay more attention to extreme circumstances than moderate ones?

We can address these issues of nuance by adopting a new approach to regimes. First, define a regime in terms of multiple variables (for example, inflation of 6% and growth of 0%). Next, use a measure of statistical relevance, based on a well-founded metric called the Mahalanobis distance, to calculate the relevance of every past observation to these prototypical regime circumstances, taking into account the similarity and informativeness of every past event. Finally, focus on the most relevant history and forecast returns as relevance-weighted averages of past returns, variances as relevance-weighted averages of past squared deviations, and pairwise covariances as relevance-weighted averages of asset deviation products for a given pair. In the absence of regimes, we get back full-sample returns and covariances. When we do have regime views, we get regime-conditioned estimates. Events are not weighted equally, but by relevance. And because regimes are ambiguous, the same past observations can inform more than one of them.

For more on this topic, see our 2023 journal article: **"Portfolio Construction When Regimes Are Ambiguous"** by Mark Kritzman, Cel Kulasekaran, and David Turkington, *The Journal of Portfolio Management*, Vol. 50, No. 1., November 2023

### Exhibit 1: Illustrative Portfolio Allocations

	Robust	Overheated	Downturn	Stagflation
US Equity	57%	26%	9%	15%
Foreign Equity	0%	27%	0%	6%
US Treasury	0%	0%	49%	36%
US Corporate	36%	22%	15%	0%
Commodities	7%	24%	0%	10%
Cash	0%	0%	27%	33%

*Illustrative portfolios are formed from annual returns spanning 1974 through 2022 based on asset class proxy indices obtained via Datastream. Regimes correspond to selected hypothetical values of inflation and real growth in GDP. See the paper "Portfolio Construction When Regimes Are Ambiguous" referenced at bottom, for more information.*


*Source: State Street Global Markets*

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