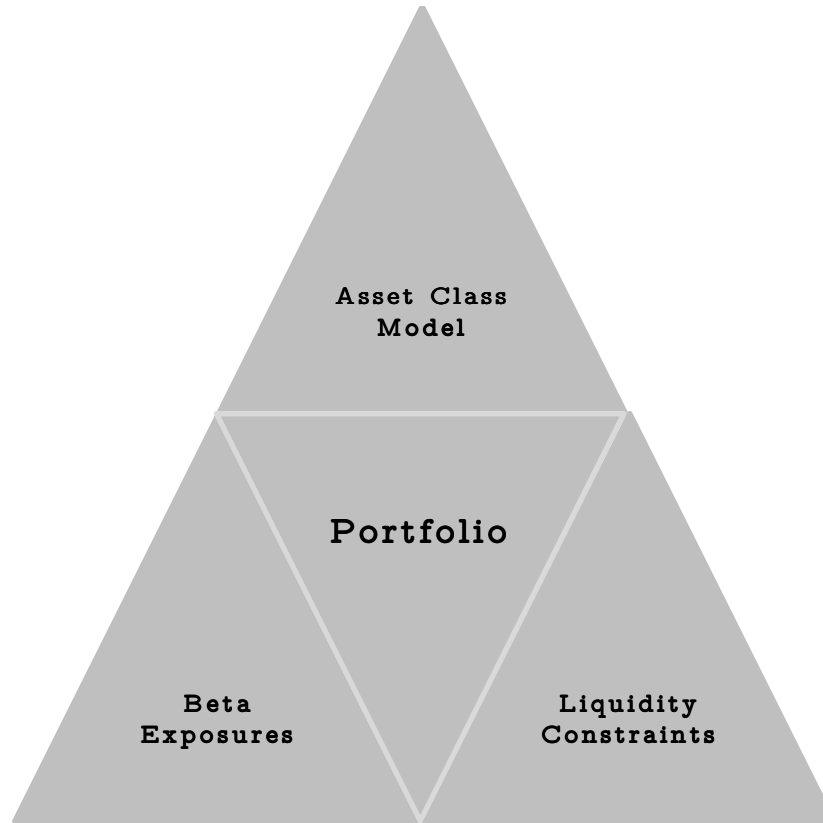
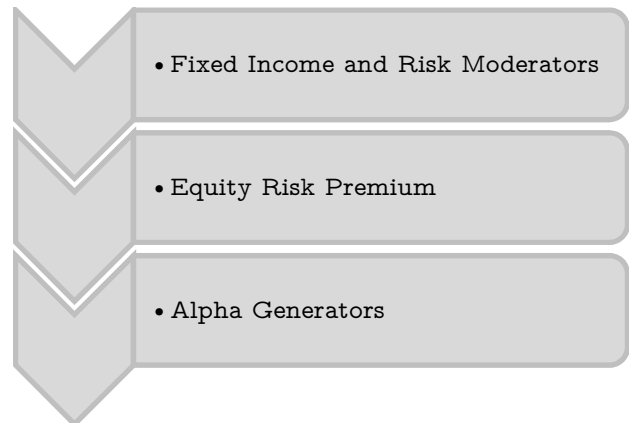


STRATEGIC ASSET ALLOCATION



I. BROAD THREE-ASSET-CLASSⁱ MODEL

Cash needs should be the starting point of the investment policy review. Variables such as current portfolio value and budget, as well as projections for operating and capital draws, debt service, long-term total spending rate and fund raising drive base allocation **fixed-income** investments¹. This allocation is complemented by “risk moderators” such as long volatility and market stress strategies. The **equity** risk premium² is captured by a global index fund. **Alpha** generators³ comprise active managers and alternative investments.



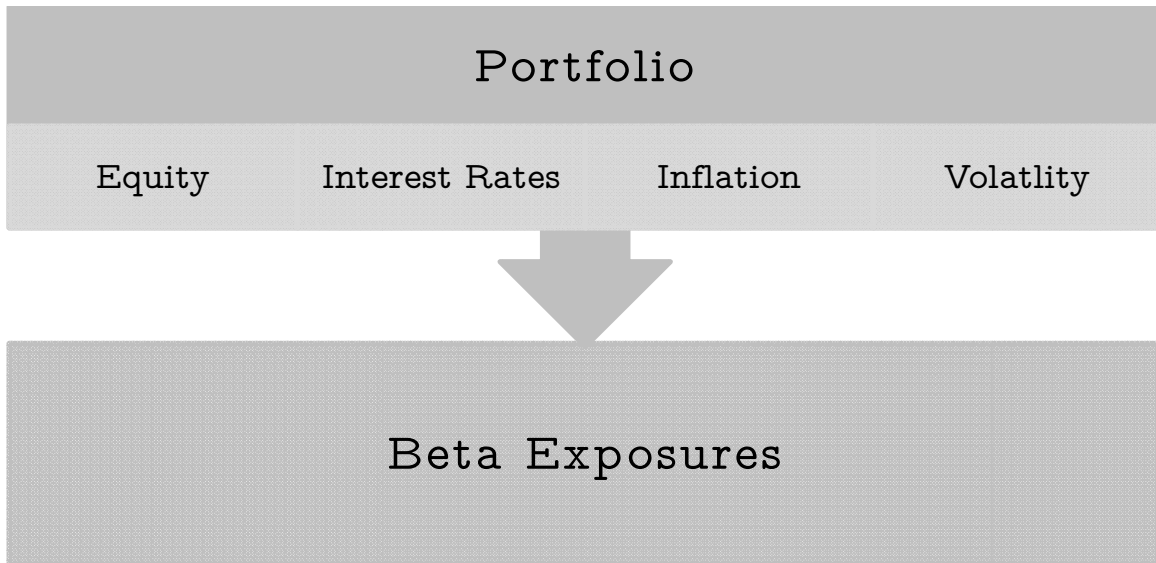
¹ Higher overall fixed income allocations decrease the need for default-risk-free assets in the portfolio

² Adjust for Private Equity exposure

³ Each opportunity must possess its own idiosyncratic merit without regard to category

II. BETA EXPOSURE

Beta can't be located in isolated market segments of the portfolio. It can only be observed at the full portfolio level. Beta exposures are created by the diversification process used to "dissolve" the diversifiable sources of risk.



Blend of stress tests and forecasted volatility from historical return data measure risk and determine the position weights which create desired level of risk at the portfolio level.

- **Equity:** Developed, Emerging
- **Nominal Interest Rate Risk:** Developed, Emerging
- **Inflation Risk:** Inflation Linked Bonds, Commodities, Real Assets
- **Volatility (Stress)⁴¹:** Long Volatility/Credit Spread Strategies, Active Hedging

III. LIQUIDITY CONSTRAINTS

Analyze and evaluate both *pre-existing sources* of liquidity constraints such as prior capital commitments, concentration in illiquid holdings, contractual lockups, and from *new contingencies* such as increased liquidity needs, stretch-out of anticipated redemptions, unexpected encumbrances on positions presumed liquid, functional illiquidity from unacceptable trading spreads, etc.

Construct liquidity “heat map” database and classify assets using “**liquidity/beta matrix**”ⁱⁱⁱ as being: 1) cash-like with lower returns and less beta-sensitivity, 2) beta-sensitive but potentially liquid through their “cashability”, 3) illiquid but beta sensitive, and 4) illiquid and beta insensitive.

		Liquidity	
		High	Low
Market Sensitivity (Beta)	High	Market Participation Some return Premium Cashability	Premium Market Participation Appropriate Return
	Low	Market Defense Satisfy Cash Needs	Market Defense Long-term diversification potential

TACTICAL ASSET ALLOCATION

When compared to a fixed-weight investment policy (with regular rebalancing) dynamic policies add value at times, but at the cost of more *consequential* changes in the asset mix. However, value can be gained by introducing a short-term *risk management* program as long as a robust governance structure is in place that can accommodate such a program. Also, the viability of a short-term risk management program should be assessed against the alternative of rebalancing and simply reducing the level of total portfolio risk in times of market uncertainty.

MARKET RISK AND THE "IDEALIZED" MARKET CYCLE

Market Risk	Macro Uncertainty			Market Uncertainty	
	Economy	Inflation	Monetary	VIX	Credit Spread
Low	Growing	Low	Neutral	Low	Narrow
Rising	Slowing	Rising	Tightening	Rising	Widening
High	Contracting	Falling	Easing	High	Wide
Falling	Recovering	Falling	Easing	Falling	Narrowing

MISCELLANEOUS IDEAS AND CONCEPTS

REBALANCING

- Rebalance when actual allocations deviate materially from target allocations, rather than rebalancing at specified time intervals.
- Rebalancing to the edge of the range as opposed to the target provides a superior risk control/cost outcome.
- Evaluate use of overlays strategies to gain or reduce exposure to Beta factors during transition phase.

INVESTMENT MANAGERS^{iv}

Systematically terminating underperforming managers might not be the optimal strategy. In other words, an effective managers' selection/termination process should not focus solely on attribute (performance) but also consider the circumstance ("bad break" vs. bad process) that shaped performance.

	Good Outcome	Bad Outcome
Good Process	Deserved Success	Bad Break
Bad Process	Dumb Luck	"Poetic Justice"

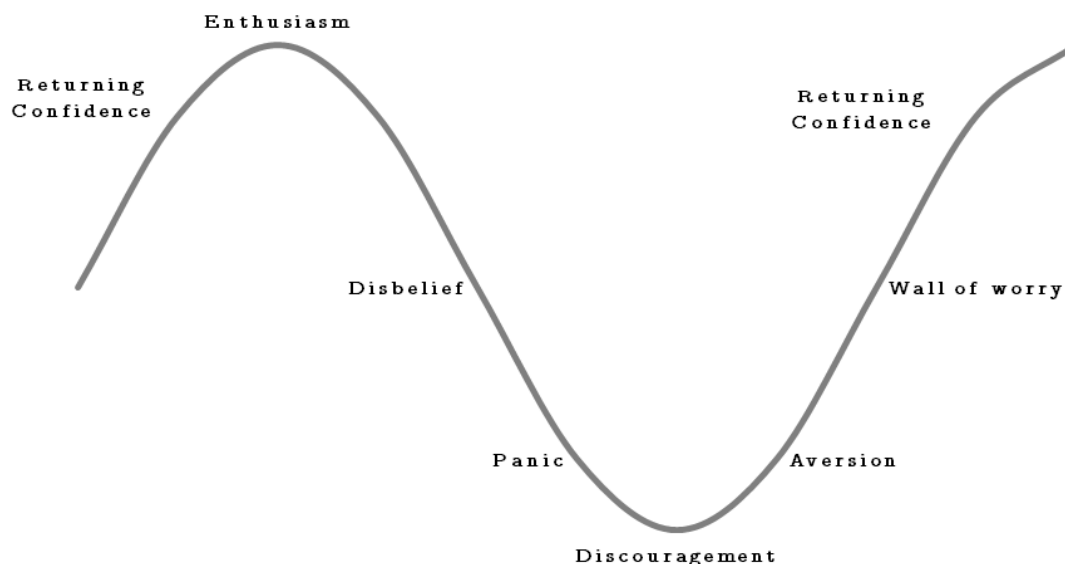
ALPHA GENERATORS (ACTIVE MANAGERS AND ALTERNATIVE INVESTMENTS)

- Evaluate allocation to currency managers (especially unfunded mandates) and CTAs to alleviate some of the liquidity constraints while retaining acceptable levels of expected returns.
- Diversify by investment style (top-down, bottom-up), performance under different market regimes (momentum, mean reversion), and time horizon.
- Avoid short-volatility strategies.

TACTICAL ALLOCATIONS^v

- Build a list of risk factors and systematically regress these factors against price performance. Formulate a view of the world from outside the model, however. Don't look for the precise and the local and look for off-model risks when expressing tactical bets.
- Look for distressed pricing and opportunities.

- Relate the price cycle to the sentiment cycle.



INVESTMENT PHYLOSOPHY AND PERSONAL BELIEFS

“The only certainty is that there is no certainty. With both uncertainty and risk, outcomes are unknown. But with uncertainty, the underlying distribution of outcomes is undefined, while with risk, we know what that distribution looks like.”⁴

“In any probabilistic field, you’re better off focusing on the decision-making process than on the short-term outcome.”⁵

“Categorizing is necessary for humans, but it becomes pathological when the category is seen as definitive, preventing people from considering the fuzziness of boundaries, let alone revising their categories.”⁶

Investing has little to do with predicting. Rather, focus on the construction of IF => THEN/ELSE scenarios⁷. In other words, invest in preparedness, not in prediction.

In general, I favor barbell-, and core/satellite-types of portfolios.

ⁱ “Parsimonious Asset Allocation” Richard M. Ennis, CFA - Financial Analysts Journal

ⁱⁱ “Using Volatility Regimes: The FQ MRI (Market Risk Index)” Ed Peters – FQ Perspectives

ⁱⁱⁱ “Portfolio Liquidity” Martin Leibowitz – Morgan Stanley Portfolio Strategy

^{iv} “Selection and Termination of Investment Management Firms by Plan Sponsors” Amit Goyal and Sunil Wahal - The Journal of Finance

^v “The Nature of Risk” Justin Mamis – Fraser Publishing Library

⁴ M. J. Mauboussin

⁵ M. J. Mauboussin

⁶ N. S. Taleb

⁷ For example, build a database that relates managers’ performance to different market cycles and regimes.