April 2015

Disciplined Investing

Investment Strategies from Credit Suisse

Private Banking and Wealth Management

The Art (and Science) of Avoiding Common Mistakes

José Antonio Blanco
Head of Global Multi-Asset Class Solutions
Private Banking and Wealth Management

Executive Summary

Investing demands rational and disciplined decision-making. This apparently straight-forward requirement, however, imposes a significant hurdle for one simple reason: Investors are humans, and humans—a lengthy body of academic research suggests[1]—are predisposed to behavioral biases that can significantly affect rational decision-making. In fact, according to this research, investors make typical, repeatable mistakes that are ultimately detrimental to portfolio performance.

These biases—which range from overconfidence to over-allocating to asset classes in times of high valuations while under-allocating during periods of volatility—can significantly reduce investors' chances of achieving their investment objectives.

We have developed an approach to help investors manage these biases and achieve better returns; our approach focuses on disciplined portfolio construction and strategic asset allocation—which is especially critical to a portfolio's long-term return prospects. Our systematic process builds and manages investment portfolios based on investors' long-term objectives, while ensuring they can capture new investment opportunities and manage risks in the context of an ever-changing market environment.

Our approach has five key steps:

- Defining investors' investment goals and financial objectives.
- Building a strong foundation for the portfolio using Strategic Asset Allocation (SAA).
- Capturing opportunities and managing risk through Tactical Asset Allocation (TAA).
- Selecting securities that meet asset allocation requirements.
- Regularly monitoring and reviewing the portfolio.

[1] *Behavioral Finance: The Psychology of Investing,* Thorsten Hens, Swiss Finance Institute Professor Financial Economics at the University of Zurich, and Anna Meier, MBA

A Disciplined Approach

After years of serving clients and managing financial market cycles, we've designed a five-step approach to help investors avoid behavioral biases and better achieve their long-term investment objectives *(Display 1)*. More specifically, our objective is to help clients construct tailored portfolios with higher expected returns and lower expected risk.

Display 1: Five steps to help investors avoid behavioral biases

1. Identify investment goals
2. Build a strong foundation with Strategic Asset Allocation (SAA)
3. Capture opportunities and manage risk by making Tactical Asset Allocation (TAA) adjustments
4. Construct a portfolio with the best investment instruments
5. Ensure comprehensive risk management

Step 1: Identify investment goals

Investors must first identify their primary investment goals and objectives—whether preserving capital or growing personal wealth over time—and then use this understanding to build portfolios focused on meeting the stated objectives *(Display 2)*. This first step benefits investors by helping them:

- Define the right level of risk for their portfolios;
- Stay focused on their long-term objectives and avoid chasing last year's winning asset classes; and
- Track and measure the portfolio's performance with greater clarity and certainty.

Display 2: An investor's primary goals determine their investment objective and approach

Strategy	Client's Goal	Objective and Approach
Preserve	"I want to preserve my capital."	Seeks capital preservation by allocating conservatively between more or less risky asset classes, depending on level of market volatility and portfolio evolution
Yield	"I want to earn some income."	Seeks income generation while also generating some capital gains through selected equity investments
Balanced	"I want to be well-invested for the long-term."	Seeks long-term capital appreciation by balancing risk and return
Growth	"I want to grow my capital."	Seeks capital growth through equities, while maintaining an anchor in bonds
Long-term Growth	"I want to maximize my returns."	Seeks high rates of capital growth using a rule-based market sentiment approach

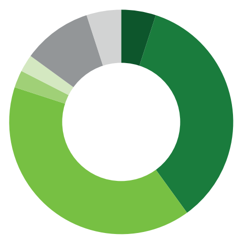
Source: Credit Suisse AG

Step 2: Build a strong foundation with Strategic Asset Allocation

The primary tool that aligns investors' objectives with their investments is the Strategic Asset Allocation. SAA ensures a portfolio is adequately diversified and meets investors' long-term return targets and risk tolerances. In simple terms, SAA is defined as the relative capital weights given to each asset class or their corresponding risk factors *(Display 3)*. Strategic Asset Allocation:

- Helps investors make asset allocation decisions within the framework of a disciplined long-term plan. In other words, SAA charts the course for investors to achieve their financial objectives by providing a clear north towards the appropriate exposure to various asset classes.
- Delivers better risk-adjusted returns by combining asset classes and sub-classes with low correlations to diversify overall portfolio risk.

Display 3: SAA combines asset classes to diversify portfolio risk



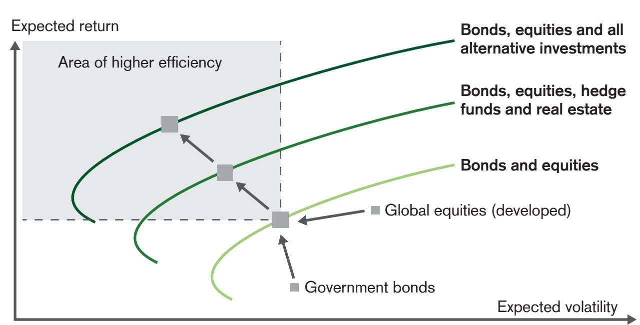
Example of balanced SAA

Liquidity	5.00%
Bonds	35.00
Equities	40.00
Commodities	2.50
Gold	2.50
Hedge Funds	10.00
Real Estate	5.00
Total	**100.00%**

For illustrative purposes only.
Source: Credit Suisse AG

More specifically, using an SAA approach that incorporates a wide range of investment options allows investors to build a "smoothing" effect into their portfolios' returns, and achieve higher long-term returns with less total volatility *(Display 4)*. Lower volatility benefits the investor—with less volatility, the portfolio is less likely to experience large losses. This can be achieved through a consistent mix of investment options with low correlation since, at any given moment, some assets will be performing well while others will be performing less well.

Display 4: The smoothing effect: Combining assets using a strategic approach may increase returns and reduce portfolio risk



For illustrative purposes only.
Source: Credit Suisse AG

Over time, investors can use these target allocations as the "north star" for each asset class, a point to guide their rebalancing decisions when asset classes' relative capital weights fall out of balance. This approach protects investors from following an excessively defensive strategy, which will generate a return too low to achieve the desired targets. Investors should reassess SAA targets annually and reallocate capital to make sure assets remain aligned with the portfolios' objectives.

Choosing the right strategic asset allocations is critical in determining overall returns, and failing to exercise the discipline needed to do so can be costly. Research indicates that 90% of the variability of a fund's return over time is attributable to decisions about asset allocation.[2]

Typically, investors tend to focus more on selecting individual securities and managers than on developing strategic asset allocations that align to their goals. By paying extra attention to defining investment guidelines and selecting the right targets, investors will benefit from investment frameworks they can rely upon to guide their investment decisions over a long-term horizon.[3]

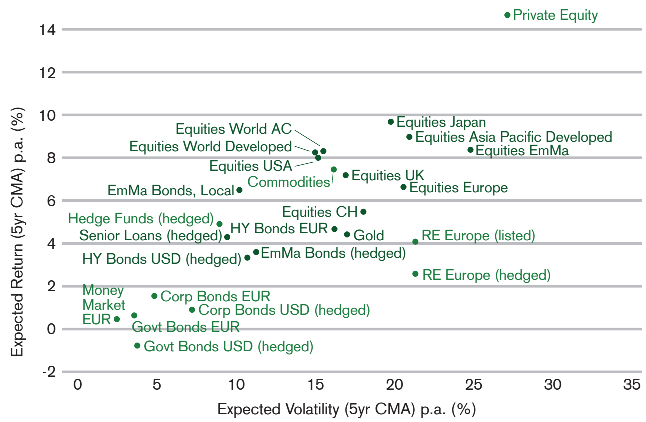
Step 3: Capture opportunities and manage risk by making Tactical Asset Allocation adjustments

Short-term market shifts can present attractive opportunities and unsettling risks—often exacerbating behavioral biases—even within a SAA framework. The markets often misprice opportunities and, many times, these are both difficult to identify and fleeting—lasting only a few days or months. Investors cannot capture these shorter-term opportunities solely by reassessing SAA targets once a year. Capitalizing on these shorter-term shifts requires a more tactical approach, that is, a tactical asset allocation adjustment.

Having this expertise at hand is particularly important given that the number of investment options and opportunities available for investors has significantly increased over the last 20 years. Moreover, clients are less prone to fall prey to behavioral biases when a third-party provides guidance grounded in rational, rather than emotional, decisions.

Tactical decisions across a wide range of asset classes require understanding the inherent characteristics of these securities—especially their unique risk/return relationships, correlations, and interactions with the macro environment *(Display 5)*. With this understanding, investors can better select asset classes and securities that add to returns and reduce risk in the context of a strategic plan designed to meet their long-term goals.

Display 5: Challenge and opportunity: A broad spectrum of investment options increases tactical asset allocation potential



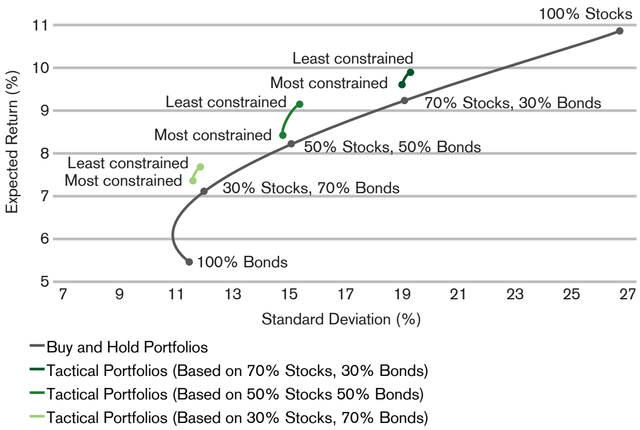
Hedged to EUR using 5yr-forwards. There is no certainty that the expected return will be reached. Performance indicators do not consider commissions, fees and other charges, including commissions leveled at subscription and/or redemption.
Source: Credit Suisse AG, July 2014.

Implementing a TAA overlay to the portfolio also provides investors with more opportunities to make investment decisions, which can deliver a significant benefit. Research suggests that by increasing the number of investment decisions within a portfolio, investors can increase the potential risk-adjusted return they can achieve *(Display 6)*: This phenomenon is known as "the fundamental law of active management."[4]

Importantly, TAA adjustments give investors a systematic way to benefit from shorter-term mispricings, allowing investors to capture value without disrupting the overall SAA framework. More specifically, when market pricing differs from our assessment of the underlying fundamental value of a security—whether under or over-priced in our view—TAA adjustments add an additional layer of risk-adjusted returns to portfolio performance by capturing short-term opportunities, as well as locking in gains and reducing the risk of potential losses.

[2] *Does Asset Allocation explain 40, 90, or 100 Percent of Performance* by Ibbotson and Kaplan, 2000.
[3] *2013 Quantitative Analysis and Investor Behavior,* Advisor Edition, Dalbar Inc.
[4] *Active Portfolio Management,* Grinold and Khan, 1999.

Display 6: Tactical adjustments can increase expected returns and may lower volatility



Source: *Improving Risk-Adjusted Returns Using Market-Valuation-Based Tactical Asset Allocation Strategies, Journal of Financial Planning,* Kenneth Solow

Step 4: Construct a portfolio with the best investment instruments

After investors define their investment goals, set up their strategic asset allocation plans, and understand how to implement TAA adjustments, the next step is making these plans and decisions operational by identifying what to buy.

Making decisions about how to build a portfolio requires that investors answer complex questions. For instance, for tactical and counter-cyclical security selections, investors must define the purpose for each selected security: Does it need to produce returns by capturing available opportunities, or has it been selected to provide additional levels of protection for the portfolio? What is the right type of investment? Should the focus be on adding value from broad market movements or on extracting value from security selection?

Security selection, however, is only one part of the portfolio engineering process. Investors must fully appreciate the multidimensional aspects of every investment decision, and:

- Decide what's the best management approach—active or passive, or both—and what percentage of each will best help capture opportunity.
- Consider alternative investments that are less sensitive to movements in the broad market.
- Consider hedging as a strategy both for protecting gains and for generating positive returns.

Ultimately, the goal is to ensure investors benefit from the power of a well-diversified portfolio designed to exploit a broad set of investment opportunities and deliver attractive returns, while safeguarding investors as far as possible from the downside.

Step 5: Ensure comprehensive risk management

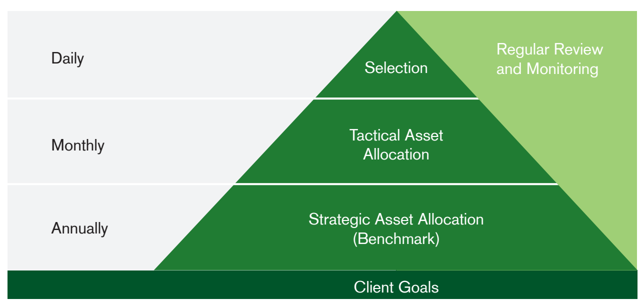
Investors must exercise vigilance to stay on course and achieve their investment objectives. More specifically, investors need a well-rounded risk management review program that:

- Rebalances portfolio allocations to ensure they remain within the target allocations as determined by the SAA process. Investors should avoid over-exposure to assets that have risen in price relative to others, and must ensure excess cash reserves do not build up in the portfolio unnecessarily.
- Re-assesses the risks in the portfolio, including the risks of 1) failing to adhere to required governance and reporting procedures; 2) failing to have the diversification needed to mitigate the idiosyncratic risk of the invested securities; and 3) failing to comply with constantly changing regulations.

Conclusion

To reach their goals of higher long-term returns and lower average risk, investors must avoid falling prey to behavioral biases—that is, making decisions informed by emotion. Instead, investors must pursue a disciplined rationality in their investment process by adopting a structured, strategic allocation approach, supplemented by a rich tactical allocation methodology and effective execution. Given the complexities involved in this process, investors should consider professional advice and support, which can help them make better, more disciplined investment decisions, and shield them from their behavioral biases.

Display 7: A disciplined approach delivers better outcomes



In summary, we recommend a disciplined, rational approach to investing that includes:

- **Identifying investor goals and requirements,** so the portfolio can be designed to achieve the desired objectives.
- **Building a robust foundation for the portfolio through Strategic Asset Allocation.**
- **Using Tactical Asset Allocation to capture short-term opportunities** that arise from market shifts.
- **Selecting the best securities** to maximize the likelihood of achieving the investment goals.
- **Ensuring the portfolio remains aligned and compliant** by establishing rigorous risk management reporting and monitoring processes.

Behavioral biases at a glance

Here is a summary of many behavioral biases that may impact portfolio performance.

Confirmation bias refers to investors' singular focus on information that supports their opinions or the assumptions they hold. Investors tend to avoid critical opinions and reports, reading only articles that reflect positively on their points of view.

Availability/attention bias states that investors' perceptions about what constitutes a good investment idea are greatly influenced by how frequently the media mentions the particular opportunity. In addition, investors pay more attention to information that is easy to understand, even if over-simplified or wrong, than to complex statistical realities.

Home bias reflects investors' preference for stocks from companies in their home countries. Investors tend to buy stocks they know, whose names are familiar, and which are mentioned more frequently by local media.

Favorite long-shot bias refers to investors' tendencies to bet on the long-shot with its promise of very high returns—while missing out on the profit in the middle.

Anchoring occurs when investors fail to rely on fundamental objective factors, and instead, make decisions based on the price they originally paid for a stock or at the last position purchased. This purchase price is the anchor, and unlike the acquisition cost, the new price seems cheap to the investor, and irrationally, they think they are getting a good deal. Anchoring influences individual decisions because investors do not assess how information is presented. When it comes to making decisions, investors are influenced by random data, even if they know that the data has no informational value or is outrageously high or low.

Myopic loss aversion occurs because investors fear losses more than they enjoy profits. If investors look at stock performance too often, they usually see they have lost money and sell everything off, when a long-term view can deliver better results. The more investors keep their curiosity at bay, the more likely they are to turn a profit with their investments, provided the portfolio is broadly diversified.

Mental accounting is a frequent activity for many private investors, during which they make distinctions in their heads that do not, in fact, exist on paper financially. Mental accounting leads investors to view losses separately from paper losses, causing them to sell stocks too soon when they make a profit and too late after a loss. Mental accounting allows investors to think a franc is not worth a franc—a dangerous and irrational conclusion.

Disposition effect leads investors to turn a paper profit into a real profit too soon and losses too late. Investors tend to embrace the former and avoid acknowledging that a paper loss may be real. Mental accounting probably contributes to this effect (see above).

Overconfidence reflects the all-too-human inclination to overestimate our own abilities and think we are above average. Interestingly, most experts also overestimate themselves—and frequently do so more than laypersons do. Overconfidence is often seen when the markets are on the rise.

Hindsight bias inhibits an investor's ability to learn from mistakes. Consider the statement "I knew the whole time this would happen." Such a statement suggests an investor has an explanation for whatever happened after the fact, and has no need to evaluate what happened and make better decisions the next time.

Representativeness bias refers to investors' tendency to think of the market according to the schemes and stereotypes they've experienced. After even a brief period of positive returns on the financial markets, investors may conclude the world has changed for the better, and will make decisions too quickly and based on imprecise and incomplete information.

Gambler's fallacy greatly underestimates or overestimates effective probabilities. For instance, based on the (false) assumption that prices are about to drop, investors sell too soon or vice versa, assuming the prices will recover soon, even though they are not yet doing so.

Framing bias influences the decisions investors make based largely on how facts are depicted in statistical terms. For instance, investors understand the statement "Four out of ten stocks are likely to generate excess returns" more positively than the statement "Six out of ten stocks are unlikely to generate positive returns"—even though they mean the same thing.

Important Disclosure

This document is intended for the recipient only and may be based on information not available to the public. If distributed in Hong Kong, this document can only be distributed to “professional investors” within the meaning of the Securities and Futures Ordinance and any rules made thereunder. As such, the recipient undertakes to use this document for his/her own purposes only and to refrain from distributing any copy of this document to any other person.

This document has been prepared by Credit Suisse AG or an affiliate or a subsidiary thereof on the basis of publicly available information, internally developed data and other third party sources believed to be reliable. While Credit Suisse AG has made every effort to ensure that the information contained in this document is correct as at the time of publication, Credit Suisse AG can make no representation or warranty (including liability to third parties) either expressly or by implication as to the accuracy, reliability or completeness of the said information.

This document is published solely for information purposes and does not constitute an offer, recommendation or an invitation by, or on behalf of, Credit Suisse AG to buy or sell any securities or related financial instruments or to participate in any particular trading strategy in any jurisdiction. Information pertaining to price, weighting, performance etc of particular securities or products is subject to change at any time. Any views or opinions expressed may not reflect the views of Credit Suisse AG as a whole and are subject to change at any time without notice. Credit Suisse AG and its clients may have previously acted based on the information contained herein and may have previously or in the future take positions that are contrary to views or opinions expressed in this document. Credit Suisse AG shall not be liable under any circumstances for any direct, indirect, contingent, special or consequential loss or damage suffered as a result of the use of or reliance on this information or in connection therewith or by reason of the risks inherent in financial markets.

Nothing in this document constitutes investment, legal, accounting or tax advice, or a representation that any investment or strategy is suitable or appropriate to individual circumstances, or otherwise constitute a personal recommendation to any specific investor. Credit Suisse AG recommends that investors independently assess, with a professional financial advisor, the specific financial risks as well as legal, credit, tax and accounting consequences.

Recipients of this document should not assume that any investment in securities, companies, sectors or markets identified or discussed herein were or will be profitable. There is no guarantee concerning the achievement of investment objectives or target returns or measurements, such as alpha, tracking error, stock weightings, and information ratios. The use of tools cannot guarantee performance. Any reference to past performance is not indicative of future results and is no guarantee to future results. Risks include but are not necessarily limited to political risks, economic risks, credit risks, currency risks, and market risks. Investing entails risks, including possible loss of principal. Components of the products which are the subject of this document (such as commodities, alternative investments, derivative and structured investments) are complex instruments, typically involve a high degree of risk and are intended for sale only to investors who are capable of understanding and assuming all the risks involved. Hedge funds are alternative investments that, compared to traditional investments, can carry a higher level of risk. Investments in foreign currencies are subject to exchange rate fluctuations. Commodities are liable to experience greater fluctuation in value. Investments in emerging markets are speculative and considerably more volatile than investments in established markets.

The issuer of any securities referred to herein or a Credit Suisse Group AG company may have acted upon the information and analysis contained in this publication before being made available to clients of Credit Suisse AG. A Credit Suisse Group AG company may, to the extent permitted by law, participate or invest in other financing transactions with the issuers of any securities referred to herein, perform services or solicit business from such issuers, and/or have a position or effect transactions in the securities or options thereof (whether or not such positions or transactions are contrary to the views or opinions expressed in this presentation/document).

Neither this document nor any copy thereof may be sent to or taken into the United States or distributed in the United States or to a US person (within the meaning of Regulation S under the US Securities Act of 1933, as amended) or in any other jurisdiction except under circumstances that will result in compliance with the applicable laws thereof. In certain jurisdictions, the distribution of this document may be restricted by local law or regulation. The entire content of this document is confidential and is subject to copyright (all rights reserved). This document may not be reproduced, referred to, transmitted (electronically or otherwise), altered or used for public or commercial purposes, either in whole, or in part, without the written permission of Credit Suisse AG.