HQ Trust

Frankfurt School Master of Finance Company Project

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Tactical Asset Class Allocation Management Depending on the Business Cycle

Task Definition: As portfolio managers responsible for **tactical asset allocation**, your task is to develop a strategy that adapts to different phases of the business cycle. The strategic asset allocation (SAA) has already been established, and individual client preferences no longer need to be considered in this context. Your goal is to identify various economic phases based on macroeconomic and market indicators and systematically adjust the allocation of equities, bonds, commodities, and duration management within the bond portfolio. The objective is to create a robust tactical strategy that maintains consistent (out)performance across different time periods and market environments.

Data Provided: You will receive Total Return Index data for the period from January 1973 to September 2024, provided in Deutsche Mark (DM) until 2001 and in Euro from 2001 onwards, for the following indices:

- MSCI World (Equities)
- Rex 10 Years Index (Long-duration German Government Bonds)
- 3-month German Bills (Short-duration Bonds, Money Market)
- GSCI Commodity Index (Commodities)
- Gold

The Strategic Asset Allocation (your benchmark allocation) is as follows:

- 60% MSCI World
- 25% Rex 10 Years Index
- 5% 3-month German Bills
- 5% GSCI Commodity Index
- 5% Gold

The benchmark portfolio is rebalanced monthly to maintain these weights. Your task is to adjust this allocation tactically, using economic indicators, to achieve better risk-adjusted returns across business cycles (mainly US business cycle, but others could be considered as well)

Objectives and Tasks:

1. **Research for indicators to define the Business Cycle:**
    - Examine macroeconomic indicators such as GDP growth, inflation, unemployment rates, the yield curve, and other relevant data.
    - Define the phases of the business cycle (e.g., recovery, boom, contraction, recession) and identify how different indicators signal the current state as well as transitions between the phases.

2. **Handling Revisions and Historical Data Constraints:**
    - Identify the publication timing of each indicator (e.g., monthly economic figures are often only released in the following month). Ensure that any portfolio reallocations are based on the information available at that time.
    - Take into account potential revisions of economic data. Use only the data that was originally available at each point in time, such as the initial release or the latest published information at that time. If revisions are incorporated, they should be included only from the point at which they became publicly available.
    - You may use indicators that started later in the analysis period (e.g., the VIX is only available from 1993 onwards). In this case ensure that the analyzed period provides statistically significant results.

3. **Analyzing Asset Class Performance:**
    - Investigate the historical performance of equities, bonds (long- vs. short-duration), commodities, and gold across different phases of the business cycle.

4. **Developing a Tactical Allocation Strategy:**
    - Develop a systematic tactical allocation model that <u>overweights or underweights</u> asset classes (equities, bonds, commodities, and gold) <u>by up to +/- 15 percentage points</u>, depending on the phase of the economic cycle.
    - Reallocations are permitted monthly, but leverage and short-selling are prohibited (always total portfolio weight = 100% & minimum asset class allocation = 0%). Ignore transaction costs and taxes in your analysis.
    - Feel free to not only integrate economic indicators but also market-based indicators such as price momentum, valuation ratios, volatility, and yield spreads when developing the tactical model.
    - Explain how duration within the bond portfolio should be adjusted across the cycle, incorporating yield curve and central bank interest rate dynamics.

5. **Backtesting the Strategy:**
    - Backtest your tactical allocation strategy using historical data and compare its performance against the benchmark (60% MSCI World, 25% Rex 10 Years Index, 5% 3-month German Bills, 5% Commodities, 5% Gold) for the entire time period as well as across the business cycle phases.

6. **Evaluating Stability and Robustness:**
    - Make sure the strategy shows consistent performance both within a sample period used for development and in separate periods not used for model building (out-of-sample).
    - Focus on whether outperformance is sustained across multiple phases and doesn't only depend on single time periods.
    - Pay special attention to the last 3 years and analyze whether, and to what extent, they differ from previous cycles.

7. **Final Report:**
    - Summarize your findings in a comprehensive report. Discuss the advantages and limitations of your tactical allocation strategy, including sensitivity to different indicators and phases of the cycle.
    - Provide practical recommendations for investors on how to apply your strategy in real-world asset management, considering risks and potential market regime changes.
    - The report should be submitted as a written document. Prepare a presentation highlighting the key findings and recommendations from your analysis. Submit all relevant data files and any programming code used, to ensure the results can be replicated and verified.

Expected Outcome: By the end of the case study, you should have developed a tactical allocation model that adapts to different phases of the economic cycle. Your model should show a clear rationale for allocation decisions, and the performance of the model should be evaluated both in terms of overall returns and consistency across various market environments. Note that it is not necessary to follow the outlined steps in the exact order or address each step separately. What is expected is a cohesive final outcome that comprehensively covers all the key points.

Supportive reading:

- Book: Applied Financial Macroeconomics and Investment Strategy: A Practitioner's Guide to Tactical Asset Allocation from Robert T. McGee
- Paper: Global Tactical Asset Allocation from Magnus Dahlquist and Campbell R. Harvey (2001)