**Adaptive Asset Allocation: A Primer**

Summary:

Classic strategic asset allocation is vulnerable to the enormous variability of the long-term average. Adaptive asset allocation is a process of constantly rotating into assets with **adaptive momentum, volatility and correlation** factors.

Introduction

* Modern Portfolio Theory (MPT) is the most widely used method to construct portfolios which maximize expected returns at different levels of risk. Investors often use long-term average asset returns and risks to find optimal portfolios, but these long-term estimates are subject to large errors in the intermediate term.
* Methods of portfolio optimization that rely on shorter term estimates of risk and return
* using shorter-term rolling estimates of risk, diversification, and returns delivers more resilient portfolios which thrive in good times - and bad.

Return

* MPT has earned a bad reputation in many investment circles because it is so sensitive to user error. MPT doesn’t work very well if you don’t feed it useful information. It’s a simple case of GIGO: Garbage In-Garbage Out.
* Since large volatility, average historical returns are not very useful for forming portfolios using MPT

Volatility

* While the long-term volatility of stocks is likely to be about 3x higher than the long-term volatility of bonds, individual stock and bond volatility, and the volatility of portfolios constructed from stocks and bonds, can vary profoundly through time.

Correlation

The objective of portfolio optimization

* You may wonder why we don’t just focus on returns. Well, one reason is that higher risk portfolios are much more difficult to stick with. That’s because more volatile portfolios are generally more vulnerable to periods of large losses
* It’s critical to understand that volatility is just as important to the investment equation as returns, because volatility describes the range of returns that might be expected over a finite investment horizon. In fact, the volatility side of the coin may be even more important than the return component for typical investors with 3-5 year emotional investment horizons (that’s probably you).

Introducing Adaptive Asset Allocation

* Portfolio defence vs portfolio offensive
* The concept of momentum in markets is similar to the concept of momentum in physics: an object in motion will stay in motion (in the same direction) unless acted upon by an outside force. In markets, this means that assets that have gone up the most recently are more likely to continue to go up over the next period. Specifically, the academic research shows that an asset with the greatest relative performance over the past 1 month to 1 year is more likely to exhibit stronger performance over the next few days or weeks. Why should markets behave this way? The academic literature focuses on three compelling reasons, and they relate to: perceptions of risk; human cognitive biases, and; the operation of markets.
* Why should markets behave this way? The academic literature focuses on three compelling reasons, and they relate to: perceptions of risk; human cognitive biases, and; the operation of markets.
* In addition, the human brain is wired to act against the momentum factor.
* Perhaps the strongest reason is that market participants do not react instantaneously to new information.
* Minimum variance portfolio
* After making thoughtful use of MPT by introducing adaptive momentum, volatility and correlation factors we observe a 7 percentage point boost to returns with lower risk versus our naïve equal weight benchmark

**Momentum and Trend Following in Global Asset Allocation**

Bullet Points:

* - 1. Three helpful components to improve performance:
* (1) Risk-parity: equally-volatility weighted.
* (2) Trend following: current price compare with x-month moving average. If downtrend: buy US T-Bills.
* (3) (Volatility Adjusted) Momentum: Rank with last x months return and pick up the winners.
* - 2. Basic Strategy: For 95 ETFs divided into 5 major asset class, each month apply trend following filter for each of the 5 major classes. If it’s in a downtrend place the money in the US T-Bills. If it’s in a uptrend, rank sub-components within broad asset class with the momentum, where the momentum criteria is the 12-months return data standardized by the prior 12-month volatility, and only invest in the 25% “winners”. Broad asset classes are weighted equally (20% each) and subclasses are also weighted equally. Portfolio is rebalanced monthly.
* - 3. Strategy Variation: Instead of setting 5 major asset classes, mix all 95 ETFs together, rank them together with momentum and pick up the winners, then apply them individually with the trend following filter.
* My own questions: 1. Risk-parity & Volatility-adjusted: both consider risk in the portfolio allocation. But in the paper these two methods are not applied together. Will it improve the performance if we apply it together (i.e. the subclasses is equally-volatility weighted instead of equally-weighted) 2. For the trends following part, for class (or subclass) in the downtrend, should we place all the allocated money, or just a portion of the money, onto the risk-free investment tool? What’s the optimal proportion? The paper do not clarify this clearly.

**Article: Earnings announcements are full of surprises**

* **Post-earnings announcement drift** phenomenon: stock prices tend to drift upward (downward) after the earnings announcement if the earnings are expectedly positive (negative)
* Measure of **surprise** in the announced earnings number: difference between the realized earnings and an estimate of the investors’ expectation of earnings, either from a time series model of earnings or from analyst forecasts.

1. **SUE** : Standardized Unexpected Earnings
2. **EAR** : Earnings announcement return, stock return around the time of the announcement in excess of the return of a portfolio of firms with similar risk exposures

* EAR: **captures all surprises** of earning and **non-earning information** in company’s earning announcement, such as sales and margins, forward-looking information in the form of press releases, conference calls, or private communications around the earnings announcement data
* “Good-news” firms: with extreme positive EAR
* “Bad-news” firms: with extreme negative EAR
* **A trading strategy**: taking long positions in good-news stocks and short positions in bad-news stocks produces an annual abnormal return of 7.5%, compared to 6.2% obtained in similar trading strategy based on the traditional SUE.
* SUE and EAR are **independent** **strategies** that can be combined to have significant improvements ( annual abnormal returns of 12.5%).
* **Drifting logics**: the cumulative abnormal returns across time for both SUE and EAR strategy appear to be drifting. We interpret this finding as suggesting that earnings and non-earnings surprises are confirmed continuously throughout the next quarters and as this happens, stock prices drift upward or downward depending on the sign of the initial surprise.
* The post earnings announcement drift for the EAR effect is much stronger than for the SUE effect.
* EAR strategy is different from momentum strategy. Drift still persists even after controlling for price momentum.

Summary of post-earnings

# Back ground

Strong performance before announcement, cashed in after the performance

find the past winners.

Sort into deciles based on 12 months performance

Long 5days before announcement return of 1.58 percent

Short 5 days after announcement return of -1.86 percent

Two noise

1: other things/2: intraday earning announcement.

pre-announcement period 3.09 percent

post-announcement period 3.05 percent

Get ride of bid-ask spread:

all purchases are executed at the prevailing ask price

all sales are executed at the prevailing bid price

average market-adjusted returns of

0.94 percent during the pre-announcement period

-0.85 percent post-announcement period

subsample of announcements occurring outside of normal trading hours

1.66 percent preannouncement

-1.34 percent post-announcement

Brokerage commissions lower these returns only slightly

# STEPS

sample selection

all quarterly earnings announcements on COMPUSTAT issued between January 1, 1971 and September 30, 2005 by firms

(a) that are listed on CRSP

(b) that have a December 31 fiscal year-end

(c) whose stock price at the end of the previous quarter is at least $5

yield a sample of 293,630 firm-quarter observation

Rank stock returns of 12 month before the announcement day

Partition it into deciles.

Huge difference between deciles

Choose the top deciles to continue to study

Partition the top deciles into ten percentiles according to 12-month returns.

Mitigate the impact of announcement date: using Factiva database

Divide by Fama and French definitions of small and large stocks

Regression

Consider for 20 days for each side

Consider 40 days as a whole

Additional analyses

Measures of risk: recompute abnormal returns using four-factor model of Carhart

Predict the announcement date: First Call database

Accounting for transaction costs: TAQ database

Limited attention