# finance theory essay sample

Finance, Investment

Past performance of momentum strategies – CAPM & Fama-French MOM 4 factors model In Table 1, we could evaluate the past performance of momentum strategy, Short Decile 1 and Long Decile 10, a. k. a. L/S (10-1). Capital Asset Pricing Model (CAPM)

$E(R) = \alpha + Rf + \beta (RM – Rf) +$

By applying to CAPM, we got a $\beta$ that is almost zero (-0. 08) showing the strategy could effectively diversify and reduce the market risk with stocks in Decile 1 and Decile 10. To further explain the large excess return ($\alpha$), we then apply Fama-French MOM Four Factors Model. Fama-French MOM Four Factors Model

$E(R) = \alpha + Rf + \beta (RM – Rf) + \beta s \cdot SMB + \beta h \cdot HML + \beta u \cdot UMD +$ In order to explain further on the excess return from market risk, we applied the past data to Fama-French MOM Four Factors Model to consider not just market factor ($RM – Rf$), but also size factor (SMB), value factor (HML), and momentum (UMD). The high $\beta u$ (1. 43) indicates the premium we could get from momentum factor. And the high excess return ($\alpha = 3. 24$) suggests the high return we could benefit additional from the risk premium. And therefore, we can expect a significantly greater than zero return the next decade with L/S (10-1) strategy.

Benchmarks recommendation and performance evaluation
UMD index and the US Russell 1000 can be the appropriate benchmarks. The AQR Momentum Funds would probably not perform better than UMD because it could not perform short position and rebalance the stock frequently because of the transaction costs. On the other hand, because all three

separate long-only momentum indexes – the large-cap US momentum index, the small-cap momentum index, and the large-cap international momentum index – that AQR developed outperformed Russell 1000 since 1980. It's very likely AQR Momentum Funds can perform better than Russell 1000 as well.

Would momentum be an attractive product?

According to the historical data since 1927 to 2008, comparing to other potential strategies, Mkt-RF, SMB, and HML, the UMD strategy has highest mean return and lowest standard deviation, making it an attractive product to any investor. To further consider on the overall portfolio of AQR could hold, we then looked at the correlation of UMD with Mkt-RF, SMB, and HML. As shown in Table 2, the correlations with other strategies are negative. In terms of diversification, a good combination of all four strategies could further hedge the risk.

Portfolio Management of AQR Momentum Funds

In order to maximize the return and minimize the tracking error, AQR develop a rebalance schedule following below steps, 1) Start with a rebalance schedule of once a month, same as UMD index. 2) Utilize Russell 1000 index as benchmark to track the performance of AQR Momentum Funds. 3) Rebalance when the performance goes worse than Russell 1000 before the one-month timeframe. 4) Continue to optimize the rebalance schedule based on the observation of rebalance timing in 3) for a longer period, for example one year.

Conclusion

In conclusion, AQR should launch the Momentum Funds for the following

reasons,

1) High mean return and lower risk in the past 80 years (1927 – 2008)

2) Positive excess return

3) A good instrument for diversification of mutual fund portfolio