Martingale Asset Management

FINC-460 Investments

Kellogg School of Management

Introduction

- Martingale is a fund that takes advantage of the failure of the CAPM

- Martingale has a 130/30 structure: it can short up to 30% short positions.

  ↪ Advantages:

    ► managerial flexibility: allows for benchmark exposure (100%) plus a 30% Long-short strategy to generate alpha.

    ► lower fees than hedge funds

  ↪ Disadvantages

    ► managerial flexibility: allows for investment in unrelated assets to benchmark

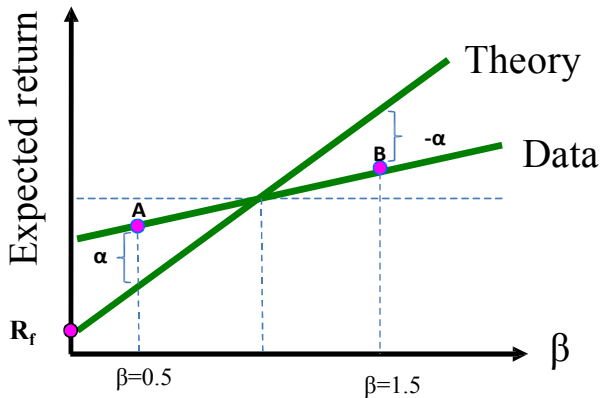   ► fixed leverage: fund must rebalance after gains/losses

- Suppose long positions decline by 10% and short positions go up by 10%

  - $\hookrightarrow$ The long positions fall to 117, the short positions rise to 33, and the overall fund underperforms by 16%

    - ▶ note that 16% = 10% x 1.6 is the effective fund leverage.

  - $\hookrightarrow$ The ratio of short positions is now 33/117 = 0.28, compared to a desired ratio of 30/130 = 0.23.

  - $\hookrightarrow$ To get back to a 30/130 ratio, the fund must now sell an additional 8 units of long, and buy back (cover) 8 units of the short positions.

- Trade implies that if the mispricing worsens, instead of increasing her position, she is trading in the opposite direction

- One potential work-around is for the fund to set a slightly wider band, say, a range between 120/20 and 130/30, to minimize transactions costs

The risk anomaly

Total vol	Lo	2	3	4	Hi	Hi-Lo
$E(R) - r_f(\%)$	5.25	6.22	6.69	3.34	-1.71	-6.96
	(2.58)	(2.83)	(2.58)	(1.02)	(-0.40)	(-1.57)
$\sigma(\%)$	15.07	17.79	21.41	29.21	35.57	30.36
β_{MKT}	0.74	0.95	1.11	1.39	1.61	0.87
	(11.14)	(21.20)	(17.95)	(10.71)	(8.31)	(3.57)
$\alpha(\%)$	1.54	1.49	1.14	-3.60	-9.78	-11.31
	(1.34)	(2.47)	(1.05)	(-1.80)	(-2.84)	(-2.56)
$R^2(\%)$	78.45	91.65	87.05	73.22	66.61	26.65

- How would a long-only investor take advantage of the risk anomaly?

- How would a 130/30 investor take advantage of the risk anomaly?

- High-beta stocks are "expensive".

- It is difficult for long-only investors to take advantage of the risk anomaly.

- Perhaps this difficulty explains why this pattern has persisted for so long.

- Alternative view: perhaps CAPM incomplete model