

Downside Risk, Lottery Demand & Multiple Clients *

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Long Abstract

Frazzini and Pedersen (2014) find that leveraging low-beta stocks, and shorting delevered high-beta stocks - betting against beta (BAB) - generates high risk adjusted returns. They explain this phenomenon with their dynamic version of the Black (1972) CAPM, which takes leverage aversion as exogenous. Bali, Brown, Murray, and Tang (2016) propose an alternative explanation: Investors demand lotteries, and high beta stocks have embedded lottery-like features.

I conjecture that the two explanations can co-exist: Leverage aversion can arise from downside risk aversion, based on results in Ang, Chen, and Xing (2006). Institutional investors are downside risk averse, and prefer stocks with embedded long put options. Individual investors have lottery demand, which can either be due to rational behavior (Friedman and Savage (1948)) or over-weighting low probability events (Kahneman and Tversky (1979)), and prefer stocks with embedded long call options. BAB meets these demands by investing in a portfolio of stocks that has embedded short out-of-the-money puts and calls on the market. Since written puts and calls should exhibit positive CAPM alphas even when correctly priced (Dybvig and Ingersoll (1982), Jagannathan and Korajczyk (1985), Hansen and Richard (1987)), BAB should also have a positive CAPM alpha.

To provide empirical support for my conjecture I construct traded risk factors for upside market risk (embedded long call option) and downside market risk (embedded short put option). Lottery demand is strongest among small stocks with low institutional ownership, while downside risk aversion is strongest in low market beta stocks with high institutional ownership. Consistent with my hypothesis, I find that BAB is long stocks with high downside market risk and short stocks with high upside market risk.

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