11 月 17 日 Price Efficiency 文献

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摘要

这次的内容主要是关于 Price Efficiency 的文献，找了 2 篇 RFS 上面的文章，第一篇有 1 个 measure，第二篇给了 3 个 measure。第一篇中的 measure 的主要思路是看随机游走模型的偏离程度。第二篇中的三个 measure 分别是 (1) 检验股价和滞后一期的市场收益率 r_m 的相关性，(2) 通过计量方法去检验消息的滞后性，(3) 第三种方法个人觉得不太可行，这种 price efficiency 的方法适合于 short-sell constraint，不具有普遍性，所以省略掉了。第三篇论文中和第二篇的 measure 类型。总的来看，用到的数据都是股票数据，即个股回报率和市场组合回报率数据。

另外之前还提到关于银行 riskiness 的指标问题，微观层面系统性金融风险指标的比较与适用性分析（陈湘鹏，周皓，金涛，王正位，2019）里面比较过 MES, MES 和 $CoVaR$ 等指标在中国的适用性，不过这些指标都是衡量银行风险的，和 risk-taking 这个概念感觉是有所区别的。

1 Institutional Investors and the Informational Efficiency of Prices

期刊作者：The Review of Financial Studies (Ekkehart Boehmer, Eric K. Kelley, 2009)

研究内容：we study the relation between institutional shareholdings and the relative informational efficiency of prices, measured as deviations from a random walk.

研究数据：Our main sample is based on NYSE-listed domestic common stocks obtained from CRSP and covering the 1983–2004 time period.

Pricing Efficiency 的衡量：

We assume that efficient prices follow a random walk and define relative informational efficiency as how closely transaction prices resemble this benchmark. **A deviation from the efficient price represents an arbitrage opportunity that traders can exploit when transaction costs are sufficiently low.**

1 **Pricing Error**: Our primary measure of relative efficiency is based on Hasbrouck (1993), who defines the (log) transaction price, p_t, as the sum of a random walk component, m_t, and a transitory pricing error, s_t, where t indexes transaction time:

$$p_t = m_t + s_t$$

The unobservable random walk component, or the efficient price, represents the expectation of security value. Its innovations reflect new public information, as well as the information content of order flow. **The pricing error**, which captures temporary deviations from the efficient price.

2 Because the pricing error has mean of zero, its standard deviation, σ_s, is a measure of its magnitude. **Intuitively, σ_s describes how closely transaction prices follow the efficient price over time, and can therefore be interpreted as an (inverse) measure of informational efficiency.**

3 后面的过程基本都是在讲怎么估计 σ_s 了，总结来说，就是用随机游走的 s_t 这一项的方差来估计 Pricing Efficiency.

研究结论：

- Stocks with greater institutional ownership are priced more efficiently, and we show that variation in liquidity does not drive this result.
- One mechanism through which prices become more efficient is institutional trading activity, even when institutions trade passively.
- But efficiency is also directly related to institutional holdings, even after controlling for institutional trading, analyst coverage, short selling, variation in liquidity, and firm characteristics.

2 Price Efficiency and Short Selling

期刊作者： The Review of Financial Studies(Pedro A. C. Saffi, Kari Sigurdsson, 2011)

研究数据： 股票的数据，包括个股数据和市场组合的数据

Price Efficiency 的定义： Price efficiency is defined as the degree to which stock prices reflect all available information, both timely and accurately.

Price Efficiency 的衡量：

The first measure of price efficiency is the cross-correlation between current stock returns and lagged domestic market return.(Bris, Arturo, William N. Goetzmann, and Ning Zhu, 2007, Efficiency and the Bear: Short Sales and Markets Around the World, JF) In a given year, we compute Corr $(r_{i,t}, r_{m,t-1})$, the correlation between weekly stock returns at time t and domestic value-weighted market returns at time $t-1$.

The second set of price efficiency measures addresses this concern and are based on Hou and Moskowitz (2005 , RFS) The idea behind these measures is that if investors cannot fully incorporate information in today's stock prices, they will defer their actions such that this information is only gradually reflected in prices.

A third type of price efficiency measure, which has gained support in recent years, is the R^2 of a market model regression. Given this evidence that associates low R2s with stocks generally seem to be less rather than more efficient, it is still an open question whether high or low R2s indicate price efficiency.（我个人觉得其实第三个 measure 不太好，不建议利用这个，这个 measure 作者自己本身都说存在开放性的探究...）

这些 measure 的具体构造的位置在原文的 Section II，因为比较长，所以我就不放进来了，可以参考下原文。

研究结论：

- Stocks with limited lending supply and high borrowing fees respond more slowly to market shocks.
- Second, short-sale constraints have a small impact on the distribution of weekly stock returns. Limited lending supply is associated with higher skewness, but not with fewer extreme negative returns.
- Third, stocks with limited lending supply and higher borrowing fees are associated with lower R^2s on average.

3 Short-selling, margin-trading, and price efficiency: Evidence from the Chinese market

期刊作者： Journal of Banking & Finance (Eric C. Chang, Yan Luo, Jinjuan Ren, 2014)

Price Efficiency 的衡量：

1 An alternative efficiency measure used is the cross- autocorrelation between stock returns and signed lagged market returns. （这个对应的就是上面第 2 篇的第一种方法）

2 They separately estimate the market model conditional on signed market returns, and use the down- minus up-market R^2 to measure the efficiency loss induced by the short-sale constraint.

(这个对应的就是上面第二篇的第三种方法，但是这个方法应该只适合用于衡量与 short-selling constraint 有关的 measure，所以应该也用不上)