Short-Selling Constraints and Assets Pricing

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Abstract

Short-selling is a strategy in which an investor sells a security that he/she does not own in order to make profits from a falling price. To prevent abusive short-selling and price manipulation, stock exchange regulators sometimes impose restrictions on the short sales of stocks. Debate on whether short sales should be allowed, or restricted, has persisted for years among academics, practitioners and policy makers. In particular, financial economists have long been interested in studying the relation between short-sale constraints and market efficiency (such as stock price overvaluation, stock price discovery/adjustment, stock price volatility and stock liquidity). Despite the growing literature on short-sale constraints, however, some important questions still remain unanswered. These questions are the focus of this study.

This dissertation comprises three essays, and probes into three untouched questions related to short-sale constraints by employing the unique Hong Kong short-selling list. The first essay examines the different price effects on stock characteristics of two alternative short-sale regimes – one under which stocks are shortable and the other under which they are not. My empirical results in this essay show that under the no-short-selling regime, (a) stocks have higher risk-compensation-adjusted returns (i.e., abnormal returns); (b) stocks with a larger size perform slightly better in terms of their returns; (c) contemporaneous (lagged) illiquidity has a weaker negative (stronger positive) effect on returns; (d) the negative relation between dividend yields and future returns weakens; and (f) the presence of both short-sale constraints and opinion dispersion causes contemporaneous returns to rise and future returns to fall by more than the effect of the presence of the opinion dispersion alone.

The second essay investigates two questions: Do asset-pricing models perform differently across where short sales are constrained and where they are not? In which short-selling environment would the models possess more explanatory power? Applying both conventional model-performance analysis and Lewellen, Nagel and Shanken's (2010) new approach, I find that the CAPM and Fama-French three-factor models fare significantly better in capturing the time-series and cross-section of expected returns on stocks when their short-selling is allowed, than when it is not. The implications of the results are that it would produce biased estimates if applying the CAPM and its empirical models to non-shortable stocks/markets, and that a new asset-pricing model, which takes into account the short-selling status of stocks, is called for.

Following up that call, my third essay constructs what is termed as "a shortability factor" and adds it to the extant assets-pricing models. The empirical results show that not only does the shortability factor itself play a significant role in explaining both time-series and cross-sectional variations in expected portfolio returns, but the overall performances of the extant standard asset-pricing models are also enhanced to various degrees by including the new factor. This implies that the short-selling status of a stock cannot be ignored when estimating its cost of capital based on the asset-pricing models.

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