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How does retail sentiment affect IPO returns? Evidence from the internet bubble period ☆

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ABSTRACT

Using small-sized buyer-initiated trades as the proxy for retail demand, we study how retail sentiment affects the returns of IPOs completed on the U.S. markets between 1994 and 2004. While we find that retail sentiment is positively related with the return volatility of IPOs on the first trading day within the whole sample period, such positive sentiment–volatility relation is the strongest during the 1999–2000 internet bubble period. Furthermore, overoptimism among sentiment investors during the bubble period results in a negative relation between retail demand and long-run post-IPO price performance. This negative relation is robust, economically significant, and can be found when the long-run post-IPO abnormal returns are adjusted by style or adjusted by industry. Overall, there is evidence that the behavior of bullish retail investors can lead to overpricing of U.S. IPO shares and price reversals in the long run.

1. Introduction

This paper studies how investor sentiment affects the pricing of U.S. initial public offerings (IPOs) in the early aftermarket and in the long run. First, we investigate the relation between investor demand and stock return volatility on the first trading day of the IPO shares. More importantly, we examine IPO long-run returns and document that heavier retail demand at the time of the offering is associated with poorer long-run price performance of IPO shares issued in the 1999–2000 internet bubble period. Our findings give more understanding about the role of retail sentiment in the pricing of U.S. IPO shares.

The explanation of how the prices of financial securities are affected by investor sentiment is originally proposed by Miller (1977). Miller assumes there are short-sale constraints and divergence of opinion among investors about the valuation of the securities. The most optimistic investors buy the securities and set the prices. As time passes, the valuation uncertainty is reduced and the appraisal of the optimistic investors is likely to decline even if the average assessment is not changed. Consequently, the group of securities with greater divergence of opinion will underperform with respect to a group of stocks about which the uncertainty does not decrease over time.

There are studies that relate Miller's divergence of opinion hypothesis to investor sentiment in the IPO market. Derrien (2005), Cornelli, Goldreich, and Ljungqvist (2006), and Ljungqvist, Nanda, and Singh (2006) develop models which show that retail sentiment at the time of the offering is positively related with IPO prices in the early aftermarket and negatively related with IPO prices in the long run. The predictions of these theoretical models are supported by empirical studies on the European IPO

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markets.[1] For example, Derrien (2005) finds that retail investors' book-building demand in France is positively related with first-day return (i.e., return from the offer price to the closing price on the first trading day) and negatively related with 18-month post-IPO abnormal returns. Dorn (2009) shows that IPOs that are aggressively bought by retail investors in the German grey market are associated with high first-day return and poor 6-month post-IPO abnormal returns. Using the grey market data for a large set of European IPOs, Cornelli et al. (2006) find that when the grey market price is high which implies that retail investors are optimistic, the aftermarket price is positively and the long-run price performance is negatively related with the grey market price. They stress that their results even pertain to countries such as the United States that do not have a grey market for IPOs. As long as some investors are motivated by sentiment, overoptimism among sentiment investors will generate the price patterns that are predicted in their model.

Compared with the European IPO markets, there are relatively few empirical studies on the relation between retail sentiment and IPO prices on the U.S. markets. Because the U.S. has no pre-IPO market trading for retail investors, we cannot observe retail demand until the new issues start to trade in the aftermarket. To infer the level of retail demand in the aftermarket, existing studies rely on the publicly available transaction-level data from the Trade and Quote (TAQ) database provided by the New York Stock Exchange (NYSE). Using small-sized trades as a proxy for retail trades, Bradley, Gonas, Highfield, and Roskelley (2009) find a strong positive relation between the proportion of retail trades and open-to-close returns on the first trading day for U.S. IPOs issued between 1993 and 2003. Their finding is consistent with the view that retail demand can push IPO prices higher in the secondary market. However, they fail to find a long-run price reversal for IPOs with large open-to-close returns and therefore conclude that their findings on retail sentiment remain mixed at best. On the other hand, Chan (2010) studies U.S. IPOs completed between 1994 and 2000 and shows that IPOs' open-to-close returns are positively related with retail trading in the hot IPO sample, but not in the cold and neutral IPO samples. Given the findings of Bradley et al. (2009) and Chan (2010) that IPOs' open-to-close returns are related to retail sentiment, it is important to ask whether retail investors have pushed the prices of IPOs to an abnormally high level such that there are price reversals in the long run. Although Bradley et al. (2009) find that long-run post-IPO abnormal returns are unrelated to open-to-close returns, we cannot rule out the possibility that retail sentiment can lead to overpricing of IPO shares and poor long-run post-IPO price performance since there are factors other than retail sentiment that affect open-to-close returns.

In this paper, we adopt a more direct approach to test the retail sentiment hypothesis on the U.S. markets by investigating the relation between the level of retail demand and long-run post-IPO abnormal returns. Based on a sample of IPOs completed on the U.S. markets between 1994 and 2004 and using the proxy for retail demand similar to that used in Chan (2010), we find that retail investors have become overly bullish during the 1999–2000 internet bubble period. While retail sentiment is positively related with IPOs' first-day return volatility during the whole sample period, such positive sentiment–volatility relation is more significant for bubble IPOs issued in 1999 and 2000. More importantly, we find that overoptimism among sentiment investors during the bubble period results in a negative relation between retail demand and long-run post-IPO abnormal returns. This negative relation is robust and can be found either when the long-run post-IPO abnormal returns are adjusted by style or adjusted by industry. According to our regression analysis, a one standard deviation increase in the retail demand of hot bubble IPOs has resulted in 9.93% to 14.68% decrease in long-run post-IPO abnormal returns, depending on the benchmark used to calculate abnormal returns and the length of the holding period. The negative effect of retail demand on the long-run price performance of bubble IPOs is the strongest over a 2-year interval. This may be because the price correction of bubble IPOs may mostly be seen as one goes beyond the 1999–2000 bubble period when investor sentiment fades drastically. In summary, this paper provides the following evidence on the U.S. IPO markets: bullish retail sentiment can lead to overpricing of IPO shares and ultimately price reversals in the long run.

The remainder of this paper is organized as follows. Section 2 presents our hypotheses and empirical design, Section 3 discusses the data, Section 4 presents the empirical results, and the final section concludes.

2. Hypotheses and research design

In this section, we review the existing literature that studies the effects of retail sentiment on the pricing of IPO shares. Based on the related literature we formulate hypotheses regarding how retail sentiment affects IPOs' return volatility on the first trading day and abnormal returns in the long run. We then present our research design by explaining the methodology to measure retail sentiment, return volatility and long-run abnormal returns of U.S. IPOs. We also discuss the selection of control variables to be used in our empirical analysis.

2.1. Related literature and hypotheses

There are theoretical models linking retail sentiment and IPO returns in the early aftermarket. Derrien (2005) develops a model in which the aftermarket price of IPO shares depends on the information about the intrinsic value of the company and noise trader sentiment. Noise traders are assumed to be bullish and are ready to pay high prices for the IPOs. The underwriter sets the offer price that only partially reflects noise traders' bullishness because he is concerned with the aftermarket price behavior of IPO shares. If the offer price is too high, the underwriter may have to engage in price stabilization in case the aftermarket price

[1] In Germany and Italy, there are active pre-IPO (or "grey") markets organized by independent brokers who provide retail investors with forward markets in IPO shares on a when-issued basis. In France, retail investors can submit orders for IPO shares during the book-building process.