International Review of Economics and Finance 44 (2016) 204–218

Contents lists available at ScienceDirect

International Review of Economics and Finance

journal homepage: www.elsevier.com/locate/iref

Gambling in the Hong Kong stock market☆

Yue-Cheong Chan *, Andy C.W. Chui

School of Accounting and Finance, Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong

ARTICLE INFO

Article history:
Received 25 June 2015
Received in revised form 21 April 2016
Accepted 23 April 2016
Available online 27 April 2016

Keywords:
Lottery-stock premium
Maximum daily returns
Cross-sectional stock returns

ABSTRACT

This paper documents the existence of a lottery-stock premium in the Hong Kong stock market as reflected by the finding that stocks with stronger lottery features during the current month have poorer future return in the following month. The lottery-stock premium is weaker for stocks with persistent lottery features and is stronger when the overall stock market is more volatile or has poorer returns. In addition, the strength of lottery features can predict the future upside potential of the stock. Overall, this study indicates that people's gambling attitudes affect stock price movements and speculative investors are trading off between the poorer mean return and the better right-hand tail of the return distribution when they are buying the lottery-like securities.

1. Introduction

Although gambling and stock investing are distinct from each other, it is interesting to note that the behavior of gamblers is quite similar to that of speculative investors in the stock markets. On one hand, gamblers are participating in a game that gives them a negative expected return in the hope that they are lucky enough to achieve a positive realized payoff. On the other hand, speculative investors tend to buy those high risk stocks with expected returns that are not commensurate with the risk level. In fact, there exist both theoretical models (e.g., Barberis & Huang, 2008; Mitton & Vorkink, 2007) and empirical studies (e.g., Kumar, 2009; Kumar, Page, & Spalt, 2011; Bali, Cakici, & Whitelaw, 2011) that document the effects of investors' gambling attitude on the outcomes in the stock markets. Studies also suggest that such speculative trading is originated from retail investors (Han & Kumar, 2013) and smaller institutions (Fong & Toh, 2014).

Motivated by the theoretical and empirical studies on the relation between gambling preferences and stock market outcomes on the U.S., this study analyses the behavior of lottery-type stocks on the Hong Kong market by addressing the following four research issues. First, we examine the existence of a lottery-stock premium as reflected by a negative relation between the strength of the lottery features of a stock and its future return. Next, we investigate whether investors' preferences for lottery stocks are different under different stock market and macroeconomic conditions. Third, we assess the rationale for investors to purchase the lottery stocks by studying the relation between lottery features and their ability to predict the future upside potential of the stock. Finally, we investigate whether the persistence of lottery features and people's gambling mentality around the New Year holiday would affect the behavior of the lottery-stock premium.

Following previous studies, we measure lottery features with the following variables: idiosyncratic volatility (*IVOL*), idiosyncratic skewness (*ISKEW*), stock price (*PRICE*), maximum daily return (*MAX*), together with a composite lottery-feature index (*LOTT*) compiled from the above four variables. We use two versions of the *MAX* variable with *MAX*(1) measuring the maximum

☆ We would like to thank the two anonymous referees for their helpful and constructive comments and suggestions. Financial support from Hong Kong Polytechnic University (project account code G-U907) is gratefully acknowledged. Any errors are our own.

* Corresponding author.
E-mail addresses: afycchan@polyu.edu.hk (Y.-C. Chan), afandy@polyu.edu.hk (A.C.W. Chui).

http://dx.doi.org/10.1016/j.iref.2016.04.012
1059-0560/

daily return during the month and *MAX*(5) measuring the average of the five highest daily returns during the month. Our univariate portfolio-level analysis indicates that each of the above measures can independently predict future stock returns. To be specific, a stock's future one-month return is negatively related with its *IVOL*, *ISKEW*, $-1 \times$ *PRICE*, *MAX*(1), *MAX*(5) and *LOTT* during the previous month. This finding is consistent with the notion that investors are paying too high a price in buying stocks with strong lottery features such that these stocks suffer from a price correction in the next month. In the firm-level regression analysis that controls for other firm characteristics, all lottery-feature variables except *PRICE* are negatively and significantly related with future stock return when we use only one of them as the lottery-feature variable. On the other hand, only *MAX* and *ISKEW* remain negatively significant when all lottery-feature variables are included in the same regression model.

We find that stock market conditions have impacts on lottery-stock premium. When the overall stock market is more volatile or performs badly, lottery-stock premium increases and there are greater future price corrections of lottery-type stocks. This indicates that investors have stronger preferences of gambling in the stock market when they face a more volatile and poorer market condition. At the same time, we also find evidence that higher aggregate economic activities as reflected by low levels of unemployment rate have positive impact on people's gambling attitude toward the stock market.

We show that the strength of lottery features in the current month can predict the stock's upside potential in the next month where upside potential is measured by future idiosyncratic skewness and future maximum daily return. Therefore, there is a rationale for investors to speculate on lottery stocks even though they earn worse future returns on average. In other words, speculative investors are trading off between the poorer mean return and the better right-hand tail of the return distribution when they are buying these securities. Further, if investors overpay for a stock with strong lottery features in the current month, they will also pay more for the same stock in the coming month if the stock continues to be a lottery-like security. This assertion is confirmed by our regression analysis which shows that the price correction is less economically significant for those stocks with persistent lottery features. Lastly, we do not discover any statistically significant turn-of the-year effects on the lottery-stock premium.

To summarize, this study provides a comprehensive analysis of lottery-type stocks on the Hong Kong stock market. Apart from confirming the existence of a negative relation between lottery features and future stock returns in an out-of-sample setting other than the U.S. and Europe, we present interesting findings which have not been documented in previous studies. In particular, extant researches do not address the effects of persistent lottery features and this is the first study that shows the persistence of lottery features weakens the price correction of lottery-type stocks. Together with the findings that lottery-stock premiums are affected by the overall stock market conditions and that the strength of lottery features are able to predict a stock's upside potential, this study provides us with more understanding about how and why people gambles in the stock markets.

The rest of the paper is arranged as follows. The following section discusses the related literature on lottery-type stocks and develops the testable hypotheses. Section 3 explains the method to identify lottery-type stocks and Section 4 discusses the data. Section 5 presents the empirical results and the final section concludes.

2. Related literature and hypotheses

The effects of investors' gambling preferences on asset pricing can be motivated by the theoretical models of Barberis and Huang (2008) and Mitton and Vorkink (2007). Barberis and Huang (2008) study the pricing of financial securities when investors make decisions according to cumulative prospect theory (Tversky & Kahneman, 1992). Under cumulative prospect theory, people overweight low-probability events and have preference for a positively skewed wealth distribution. Investors thus are willing to pay a high price for a lottery-like security and take an undiversified position in it in order to add skewness to the return on their portfolios. As a result, the positively-skewed security can be overpriced relative to the prediction of the expected utility model and earn a negative average excess return. Using a different model, Mitton and Vorkink (2007) also predict that idiosyncratic skewness will be a priced component of security returns. They assume that investors have same demand for mean and variance but different preference for skewness. They show that investors with greater demand for skewness (the “Lotto Investors”) will hold less diversified portfolios than investors with less demand for skewness. In addition, since “Lotto Investors” are willing to trade mean–variance efficiency for upside potential in their portfolios, assets with positive idiosyncratic skewness earn lower returns than assets with negative idiosyncratic skewness.

There are several empirical studies on the pricing of lottery-type securities on the U.S. markets. Kumar (2009) uses price, idiosyncratic volatility and idiosyncratic skewness to measure the strength of a stock's lottery features and defines lottery-type stocks as those low-priced stocks with high idiosyncratic volatility and high idiosyncratic skewness. His idea is that investors looking for “cheap bets” will find low-priced stocks attractive, and similar to lottery tickets, stocks with high idiosyncratic skewness have a relatively small probability of a large payoff. In addition, investors might also believe that the past extreme positive returns are more likely to occur again when idiosyncratic volatility is high. His empirical finding shows that stock portfolios with strong lottery features earn significantly lower average returns relative to stock portfolios with weak lottery features. Kumar et al. (2011) document that individual stocks with stronger lottery features earn lower returns in the cross-section, and the magnitude of such negative lottery stock premium is stronger for firms located in regions of higher Catholic–Protestant ratio. They suggest that their finding is consistent with the conjecture that the gambling propensity is stronger in regions with higher concentrations of Catholics (who are less disapproving of gambling activities) relative to Protestants (who have a stronger moral opposition to gambling).

Bali et al. (2011) consider stocks with extreme positive returns as lottery-like assets that have a small chance of a large gain and examine the role of extreme positive returns in the pricing of U.S. stocks. Their portfolio analysis and firm-level cross-