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Ex ante and ex post overvalued equities: The roles of corporate governance and product market competition

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A B S T R A C T

This paper examines equity overvaluation and the effects of corporate governance and product market competition on market valuation of potentially overvalued equities in an economy with high earnings management and weak investor protection (Taiwan). We follow Beneish and Nicholas (2009) to mimic Altman Z-Score and Beneish M-Score to compose an ex ante O-Score to measure overvaluation. We show that our ex ante overvaluation measure (O-Score) can effectively identify those that are likely to be overvalued by manipulation. Portfolios of longing stocks with high current O-Score and shorting stocks with low current O-Score earn abnormal returns. Portfolios of longing stocks with high one-year-ahead O-Score and shorting stocks with low one-year-ahead O-Score suffer losses. We also show that corporate governance reduces but product market competition raises managers' incentive to manipulate market overvaluation. Moreover, product market competition reduces market valuation on currently overvalued equities. Corporate governance effectively reduces but product market competition reinforces the reverse effect of one-year-ahead overvaluation on current market valuation.

1. Introduction

Jensen (2005) indicates that equity overvaluation means that a firm's stock prices are higher than its fundamental value and argues that agency costs of overvalued equity cause the future destruction of firm value. Miller (1977) argues that overvaluation arises from investors' disagreement on the payoff of the financial assets. Shleifer and Vishny (1997a) argue that even if short-selling is allowed, the substantial risks of short selling reduce short-sellers' incentives to borrow. Previous studies related to equity overvaluation focus on ex post overvalued equities, mostly on how overvalued firms take corporate actions or value-destroying activities to sustain overvaluation (see Chi and Gupta (2009), Houmes and Skantz (2010), Badertscher (2011), and among others). Little literature ever attempts to identify ex ante overvalued equities and/or to trade on ex ante overvalued equities to make profits, especially in an economy with high earnings management and weak investor protection.

Similar to Beneish (1999) M-score to detect ex ante earnings management, Beneish and Nicholas (2009) propose an O-score to identify U.S. overvalued equity ex ante through the assessment of financial statement information and the value-destroying financing activities. This paper attempts to fill the lack of literature of ex ante equity overvaluation. We examine whether the Beneish and Nicholas's O-score can be applied to identify overvalued equity in a high earnings management and weak investor protection economy (such as Taiwan) and examine how corporate governance and product market competition influence managers' motivation to manipulate overvaluation of equities and the market reaction to the overvaluation.

Reward contracts typically link managerial compensation to stock market performance to maximize stockholders' wealth. Skinner and Sloan (2002) show that the stock market penalizes the stock prices of firms that cannot meet market expectations, raising managers' incentives to meet investors' optimistic expectation. Jensen (2005) theorizes that managers of overvalued firms have

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two options. On the one hand, the managers can allow the market to reflect the truth of overvaluation and allow the inflated stock price to decline to its fair level. However, this option hurts the managers' compensation and career. On the other hand, the managers can take corporate actions to meet market expectation to sustain the inflated stock price to delay the adverse compensation and career consequences. Bergstresser and Philippon (2006) show that managers of firms with overvalued equities try to sustain overvalued stock prices so that they can benefit from exercising their stock options or from stock sales. Consequently, overvaluation attracts managers to manipulate earnings or to take corporate strategies to meet market expectation to prolong equity overvaluation. Jensen (2005) argues that managers of overvalued firms tend to take value-destroying projects to prolong overvaluation even by manipulation and argues that the value-destroying actions hurt shareholder wealth in the long run after the revelation of overvaluation leading to the agency costs of overvalued equity.

Shiller (2000) concludes that overvaluation will not be sustainable in the long run. Managers of overvalued firms have incentives to take corporate actions to prolong the overvaluation. However, the managed income-increasing earnings cannot last indefinitely resulting in price reversals for firms with high income-increasing accruals afterwards. Consequently, firms fall in an overvaluation trap to stimulate market demand with short-term performance by manipulation. Such actions destroy substantial firm value in the long run. The stock price will converge towards its underlying value eventually. Overvalued price will, therefore, drop after the revelation of information about the firm's fundamental value over time.

Corporate governance ensures truthful information revealed to the investors. It is important to consider how corporate governance influences market overvaluation because equity overvaluation is very likely linked to accounting manipulation. Earnings management is considered as a cause and consequence of equity overvaluation. Moreover, product market competition changes the agency costs. Healy and Palepu (2001) argue that the agency conflicts between shareholders and managers induce the demand of financial reporting. The effect of product market competition on financial reporting influences managers' incentives to manipulate overvaluation.

Prior studies on overvaluation focus on ex post evidence of overvalued equities. Little work in the literature identifies overvalued equities ex ante. This paper fills this gap. This paper contributes to the existing literature by considering the ex ante and ex post equity overvaluation and how corporate governance and product market competition influence market reaction to the ex ante overvaluation in an economy with high earnings management and weak investor protection. Since equity overvaluation increases expropriation risk, it is important to understand if equity overvaluation can be detected beforehand and the roles of corporate governance and product market competition on market overvaluation. We further examine the profitability of trading on ex ante overvalued equities. To our knowledge, we are the first to document a systematic relation between ex post overvaluation and ex ante overvaluation and the effects of corporate governance and product market competition on market reactions to the ex ante market overvaluation.

We examine the Taiwan market primarily because of its stock volatility and because of its high earnings management and weak investor protection. The volatility of stock market, earnings management, and investor protection make Taiwan a good example to examine the equity overvaluation ex ante and ex post. Aggarwal, Inclan, and Leal (1999), Michelfelder and Pandya (2005), and Arouri, Jawadi, and Nguyen (2010) argue that emerging stock markets such as Taiwan are characterized by high volatility. Gursoy, Yuksel, and Yuksel (2008) confirm the stock volatility persistence in emerging markets. High stock volatility implies that the price behavior in Taiwan stock exchange experiences price booms and drops significantly, which is consistent with the price behavior of overvalued equity. Leuz, Nanda, and Wysocki (2003) document that Taiwan is ranked 6 out of 31 countries by earnings management score. Tsai, Wu, and Chang (2012) show that managers in Taiwanese firms engage in earnings management leading to overvalued equities in Taiwan stock markets. Moreover, Chen, Kao, and Lu (2014) and Chen and Kao (2016) indicate that Taiwan is a civil law country with concentration of ownership and lack of takeover threats. La Porta, Lopez-de-Silanes, Shleifer, and Vishny (2000) document that civil law countries do not provide strong investor protection. Claessens, Djankov, and Lang (2000) document that firms in East Asian countries including Taiwan, are less likely to be faced with takeover threats because of their concentrated ownership structure leading to high expropriation risk from controlling shareholders.

Our empirical results are summarized as follows. We confirm the validity of the ex ante O-Score to identify overvalued equities in Taiwan. Investors can benefit from buying stock with high *current* O-Score and selling stocks with low *current* O-Score but suffer losses from buying stocks with high *previous* O-Score and selling stocks with low *previous* O-Score. Corporate governance limits managers' incentives to manipulate overvaluation and mitigates the reverse effect of overvaluation on stock price drop after the revelation of fundamental firm value. On the contrary, product market competition raises the likelihood of ex ante overvaluation and reinforces the reverse effect of overvaluation afterwards.

The remainder of this paper is organized as follows. Section 2 reviews the related literature and develops testing hypotheses. Data and variable definition are expressed in Section 3. In Section 4, we discuss if our ex ante overvaluation measure identifies ex post overvaluation. Section 5 examines the performance of trading strategies based on ex ante overvaluation. Section 6 examines the effects of corporate governance and product market competition. Robustness tests are presented in Section 7. Finally, Section 8 concludes.

2. Related literature and hypotheses

For the related literature, we focus on the previous work related to overvaluation, corporate governance, and product market competition.

2.1. Overvaluation

Jensen (2005) indicates that overvalued firms are those with weak fundamental values but experience high likelihood of earnings management, mergers and acquisition, equity issuance, and unrealistic market expectation. Even under market efficiency, firms are still possibly overvalued due to investors' disagreement on the present value of firms' future earnings and due to the short sale constraints. Short-sale constraints prevent the arbitrage of selling overvalued equities and contribute to the presence of overvaluation. Shleifer and Vishny (1997a) argue that even short-selling is not prohibited; the substantial risks of short selling make short-sellers hesitate to borrow. Previous studies support the presence of overvaluation. Beneish and Vargus (2002) indicate that equities with abnormal insider sales are likely overvalued; Desai, Rajgopal, and Venkatachalam (2004) point out that glamour stocks are likely overvalued; and Zach (2003) shows that firms engaging in M&A activities are likely overvalued.

Dong, Hirshleifer, and Teoh (2012) argue that equity is more sensitive than debt to firm value and that overvaluation effect is stronger for equity issuance than for debt issuance. Teoh, Welch,

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