Page View-Based Investor Attention and IPO Pricing

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Abstract

Using data on page views of a company's website, we measure investor attention to the company and study the effect of attention on initial public offering (IPO) pricing. Using a sample of 136 IPOs from the U.S. and Japan, we find that our attention measures in the pre-IPO period are associated with higher first-day returns. This effect is especially pronounced in Japan, where the offer price is set within the pre-determined filing range and the period from the offer price settlement to IPO date is longer. On the other hand, in the U.S., where the IPOs are allowed to be priced outside the range and they are traded in the market soon after the offer price settlement (typically on the following day), the effect disappears after considering price revision. The results suggest that the effect of investor attention on pricing is adjusted under the book-building process in the U.S., but it is not perfectly adjusted under the Japanese book-building procedure.

Keywords: Investor attention; Website; IPOs; Book-building
JEL classification: G24

1. Introduction

Visiting websites is a useful way to collect information about a company. This is particularly the case if other source of information is limited. If an investor is interested in investing in a company without relevant information such as trading data, earnings track record and analyst reports, he/she would try to collect information through its website. An initial public offering (IPO) is an example of such situation. Since an IPO is selling equity in the public market for the first time, it is a difficult task to evaluate the company's stock. Much of the IPO literature find that the price on the first day of trading is biased upwards from the offer price set by the lead underwriter (see Ritter and Welch, 2002). Yet little is known about how such investor's activities affects IPO pricing and the cross-sectional variation of the effects. This is the focus of our study.

Many researchers provide theories and empirical evidence that explain the high first day returns. Our paper involves the behavioral explanations. Behavioral explanations assume the existence of irrational investors and they could influence asset pricing. There are a few empirical papers provide evidence suggesting that investor attention or demand affect IPO pricing. However, one difficulty in such research is to *clearly* identify or assess investor's attention or potential demand for the stock due to the lack of market data prior to the IPO. Some previous studies use pre-market demand (e.g., Cornelli, Goldreich, and Ljungqvist, 2006; Dorn, 2009); the others use proxies for investor attention such as trading volume, media coverage, or search volume index (e.g., Da, Engelberg, and Gao, 2011; Liu, Sherman, and Zhang, 2014). In this paper, we directly measure investor attention using a novel data set, which have not been used in finance literature, that is, search traffic of the company's website, and study the effect of attention on IPO pricing.

Our attention measures have three advantages. First, unlike the measure relying on information of searching the 'company name' such as in Google, our measure is based upon the number of views of the company's website. Therefore, while the attention measure relying on the company name may capture irrelevant attention or may not capture relevant attention, our measure suffers less from the problems reflecting the identification of stock and directly captures the attention of investors who are interested in the IPO. Second, we consider not only search volume but also the length of stay and the number of pages viewed by the visitors.. These versatile information about the website visitors allow us to measure the interest level of potential investors in the market. With these data, we can provide strong evidence on the relationship between investor attention and asset pricing. Third, while proxies of attention measures such as media coverage or Google SVI which are used in previous literature are given only for relatively larger IPO firms, almost all of our sample IPOs have the values of our attention measures. This means that our results suffer less from selection biases which media attention is only for large firms or firms with investor information demand (Drake, Roulstone, and Thornock, 2012).

This study not only uses a novel data set but also provides evidence from a cross-country framework: the comparison between the U.S. and Japanese IPO markets, which are the two largest IPO markets in the world. Although both countries use a book-building method as selling mechanisms, their processes are significantly different. While the offer price in the U.S. is allowed to be set outside the filing range, the offer price is set within the filing range under the Japanese book-building process. In addition, in the U.S. the offer price is set one day before the IPO date, while in Japan the offer price is set two weeks in advance (Chowdhry and Sherman, 1996). These differences in book-building processes highlight the effect of investor attention on IPO pricing.

In this paper, we test the Barber and Odean (2008) attention theories. Barber and Odean argue that individual investors are net buyers of attention-grabbing stocks and the stocks tend to be overvalued. Accordingly, we expect that when search volume of the company's website (as well as the length of stay and the number of page views) is high (indicating that the investor attention is high), the price pressure is high and leads to higher first-day returns under the difficulty of short selling of IPOs.[1] If the pricing method can afford to reflect the investors demand before the IPO date

[1] Edwards and Hanley (2010) note that although it is said that short selling is difficult light after the IPO, short selling is integral to after trading in U.S. IPO market.

(such as in the U.S.), the effect of investor attention on first-day returns would be mitigated, whereas it still remains if the offer price is not perfectly revised by reflecting investor attention before the IPO (such as in Japan).

Our main findings are as follows. We find that investor attention is associated with higher first-day returns. This result persists for a sample of Japanese IPOs even after controlling for price revision and other characteristics of the issues. On the other hand, the positive relationship disappear under the U.S. book-building process. This different result might come from the differences in IPO book-building procedure between the U.S. and Japan; if demand is strong, it will be reflected in upward revision of filing range under the U.S. book-building process and thus the effect of investor attention on initial returns become weak after controlling for price revision. On the other hand, under the Japanese book-building process, the effect of investor attention is not perfectly adjusted by the price revision and still exists.

This paper contributes to the literature that examines the effect of web traffic-based investor's behavior on asset prices (Da et al., 2011; Bauguess, Cooney, and Hanley, 2013). Using different and more direct measure than any existing literature, we construct daily-based measure containing information on the number of page viewers, the duration of time, and the number of pages. This enables us to capture the investor attention to the IPO more precisely. Since we directly access the information of page viewers, our attention measure does not suffer less from search terms of keywords, which are severe for IPO sample.

Our paper also contributes to the literature on IPO, especially the relationship between IPO procedure and initial returns. While book-building is the primary IPO method not only in the U.S. but also other counties, the selling mechanisms are different across counties (Jenkinson, Morrison, and Wilhelm, 2006). Regarding the response of investors to IPO procedure, we provide empirical evidence by showing that while in the U.S. the attention measure gradually increases up to the IPO date, it increases from five weeks before the IPO in Japan. Our study provides a new evidence that investors affect IPO price using a sample of multi counties. Unlike single-country studies, a cross-country framework would strengthen our results because attention theories do not depend on a particular country. Furthermore, comparing the difference in pricing process, we provide evidence that investor attention affect first-day returns.

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