Seasoned Equity Offerings, Limited Investor Attention, and Post-Announcement Drift:
Theory and Evidence

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Abstract

We develop a model of seasoned equity offerings (SEOs) under limited investor attention. While existing models of equity issues assume that all investors pay immediate attention to SEO announcements, we assume that only a fraction of investors pay immediate attention, with the remaining fraction paying delayed attention. We develop three testable predictions from our theoretical model not generated by existing equity issue models. First, in addition to an announcement effect, there will be a post-announcement stock return drift following SEOs. Second, the announcement effect of an SEO will be increasing and the post-announcement drift will be decreasing in the fraction of equity market investors paying immediate attention to the SEO announcement. Third, both the announcement effect and the post-SEO drift will have predictive power for the post-SEO operating performance of firms. We test the above three predictions of our theoretical model using the media coverage of firms prior to SEO announcements as our proxy for investor attention and find consistent evidence. Our baseline empirical results are robust to making use of abnormal investor attention (instead of the actual investor attention) received by firms, allowing us to rule out the possibility that our results are driven by the characteristics of certain firms that receive greater investor attention compared to others. We also use an instrumental variable analysis to show that the above empirical relationships are causal. Lastly, we demonstrate the robustness of our results using SEC EDGAR filing searches by investors as an alternative proxy for investor attention.

Motivation

- The announcement effect of seasoned equity offerings (SEOs) has been extensively analyzed: both theoretically (e.g., Myers and Majluf (1984), Giammarino and Lewis (1988)) and empirically (e.g., Asquith and Mullins (1986), Masulis and Korwar (1986)).

- In models such as Myers and Majluf (1984), a crucial assumption is that all investors pay **immediate attention** to the SEO announcement.

- The objective of this paper is to relax the above assumption, assuming instead that only a fraction of investors in the equity market pay immediate attention to the SEO announcement, while the remaining fraction **pay delayed attention** to the SEO announcement.

- We then analyze the consequences of such partial investor attention paid to SEOs both theoretically and empirically in this paper.

Summary of Findings

- We first theoretically analyze a two-type asymmetric information model where a fraction of investors **do not pay immediate attention** to the equity issue and update their beliefs about the firm only in a delayed manner.

- We show **both theoretically and empirically** that
  - both the announcement effect and the post-announcement drift for SEOs are **negative**;
  - the announcement effect of an SEO will be **positively related** to the fraction of investors paying attention to the announcement;
  - there will be a post-announcement stock-return drift that is **negatively related** to investor attention;
  - both the SEO announcement effect and the post-announcement stock return drift **have predictive power** for the future operating performance of the SEO firm.

- We conduct two identification tests and show that our results are causal.

The Theoretical Model

Setup

We develop a **two-type asymmetric information model** to study how the attention of investors to SEO announcements affects the SEO announcement effect and post-announcement drift.

- Risk-neutral firm insiders have private information about their firm's assets in place (H or L).

- The firm has access to a positive NPV object and requires to issue equity to raise the requisite I.

- A group of risk-neutral outside investors have cash I available and decide whether to participate in the firm's equity issue.

- Only a fraction of investors pay immediate attention to the equity issue and update their beliefs about the firm, while the remaining fraction update their beliefs in a delayed manner.

- All investors who trade in the equity market are risk-averse.

There are four dates in the model: $t = 0, 1, 2, 3$.
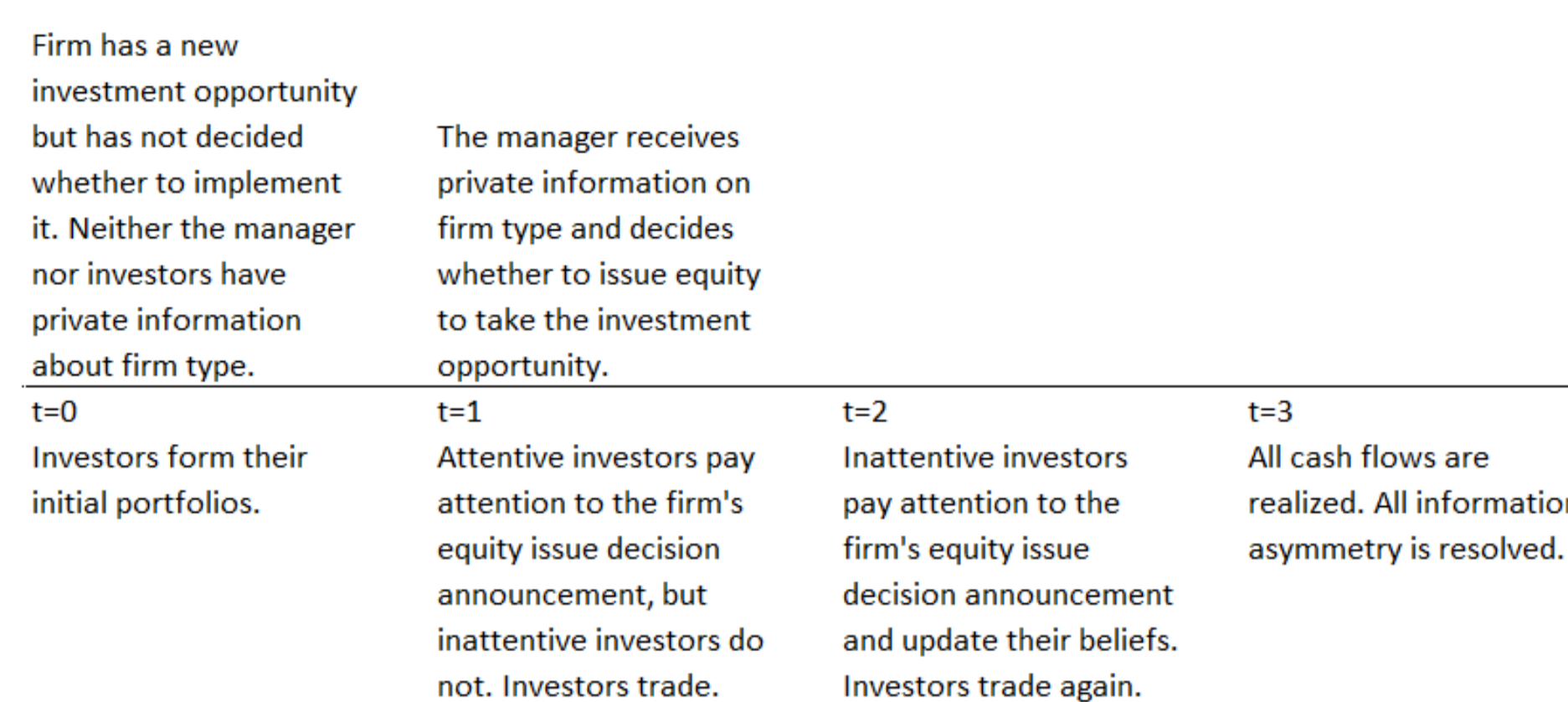

Figure 1: Timeline of the Model

Propositions

1. When the *NPV of the new project* is high enough to compensate the current shareholders for the dilution effect of an equity issue in a *type-H firm*, a **pooling equilibrium** exists where both type-L and type-H firms would issue new equity to implement the new project.
   When the *NPV of the new project* is only high enough to compensate the current shareholders for the dilution effect of an equity issue in a *type-H firm* but too low for a type-H firm, a **separating equilibrium** exists where only type-L firms issue new equity and implement the new project.
   (Propositions below focus on separating equilibrium.)

2. When the *difference in the expected cash flow* from assets in place between the two types of firms is *sufficiently large*, a firm's stock price at $t = 2$ if it does not issue equity is expected to be **higher** than its stock price if it does issue.

3. When there are *sufficiently many investors in the market paying attention* to the equity issue announcement at $t = 1$ and the difference between the two types of firms' expected cash flows from assets in place is sufficiently large, a firm's stock price at $t = 1$ if it does not issue equity is expected to be **higher** than its price if it does issue.

4. When there are *sufficiently many investors in the market inattentive* to the equity issue announcement on date $t = 1$, and the expected cash flow from the assets in place of a type-H firm is sufficiently higher than the expected cash flow from the assets in place of a type-L firm, the post-announcement drift subsequent to the equity issue decision is expected to be **negative**.

5. When there are sufficiently many investors in the market inattentive to the equity issue announcement on date $t = 1$, and the expected cash flow from the assets in place of a type-H firm is sufficiently greater than the expected cash flow from the assets in place of a type-L firm, the *more investors are inattentive* to the equity issue announcement, the **larger the magnitude** of the subsequent post-announcement drift (i.e., more negative).

6. Suppose the difference between the two types of firms' expected cash flows from assets in place is sufficiently large, then the announcement effect is **negative** when the *risk aversion* parameter of investors is *sufficiently small*.

Testable Hypotheses

H1: We expect a **more negative** SEO announcement effect when more investor attention is paid to the SEO announcement.

H2: We expect a **less negative drift** when more investor attention is paid to the SEO announcement.

H3: We expect both both the abnormal stock return upon the SEO announcement and the subsequent post-announcement drift to be **positively correlated** with the post-SEO operating performance of the firm.

Data

- **SEO data**: the Securities Data Company (SDC)/Platinum Global New Issues database
  - All US SEOs from 2000 to 2018, offerings of common shares
- **Investor attention data**: RavenPack News Analytics, EDGAR Filings
- **Accounting and Stock return data**: Compustat and CRSP

Empirical Results

Announcement Effect & Post-announcement Drift

Dependent Variable	CAR [0:0]			CAR [1:21]		
	(1)	(2)	(3)	(4)	(25)	(6)
NumNews [-7:-1]	-0.048***			0.239***		
	(-3.17)			(3.80)		
NumNews [-14:-1]		-0.032***			0.149***	
		(-3.74)			(4.22)	
NumNews [-30:-1]			-0.017***			0.060***
			(-3.94)			(3.40)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry×Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.014	0.015	0.015	0.011	0.012	0.010
Observations	4465	4465	4465	4471	4471	4471

- *NumNews [-7:-1]*: the number of news items mentioning the firm over a 1 week prior to the SEO announcement date.

- *Controls*: UndwrtReputation, FirmSize, PriorQtrEarnSurp, PriorMktRet, MidFilePrice.

- 1 S.D. increase in *NumNews [-7:-1]* ⇒
  - decreases announcement-day abnormal returns by 24 basis points: supporting **H1**
  - increases post-announcement one-month CARs by 120 basis points: supporting **H2**

Market Reaction upon SEO and Operating Performance

Dependent Variable	ROA$_1$	ROA$_2$	ROA$_3$	ROA$_4$
	(1)	(2)	(3)	(4)
Standardized CAR [0:0]	0.083	0.210**	0.140	0.004
	(0.81)	(2.11)	(1.27)	(0.04)
Standardized CAR [1:21]	0.160	0.190*	0.311***	0.375***
	(1.56)	(1.90)	(2.81)	(3.41)
Controls	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes
Adjusted R^2	0.435	0.455	0.402	0.414
Observations	4451	4421	4305	4193

- 1 S.D. increase in *Standardized CAR [1:21]* ⇒ increase in *ROA* computed over the subsequently four fiscal quarters after SEOs by 37.5 basis points: supporting **H3**

Identification 1: Abnormal Investor Attention

- To control for unobserved firm characteristics, we construct the "abnormal" investor attention measures as the difference between the media coverage of an SEO firm immediately prior to its SEO and the media coverage of the same firm exactly one year before its SEO announcement date.

Dependent Variable	CAR [0:0]			CAR [1:21]		
	(1)	(2)	(3)	(4)	(25)	(6)
AbnNumNews [-7:-1]	-0.046***			0.079		
	(-2.86)			(1.17)		
AbnNumNews [-14:-1]		-0.043***			0.082*	
		(-3.76)			(1.72)	
AbnNumNews [-30:-1]			-0.020***			0.021
			(-3.09)			(0.79)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry×Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.013	0.015	0.014	0.008	0.008	0.008
Observations	4465	4465	4465	4471	4471	4471

- The results are consistent with our baseline results.

Identification 2: Instrumental Variable Analysis

- To control for any informational or other confounding event occurring right before the SEO announcement, we use the media coverage received by the industry peer firms over the same period as an instrumental variable.

Dependent Variable	1st-stage	CAR [0:0]	CAR [1:21]
	(1)	(2)	(3)
SIC2AvgNumNews [-14:-1]	0.437***		
	(5.46)		
NumNewsHat [-14:-1]		-0.220**	1.225***
		(-2.10)	(2.69)
Controls	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes
Observations	4458	4458	4464
Cragg-Donald F-test	29.84		

- The results are consistent with our baseline results: supporting **H1** and **H2**.

Robustness Check: Alternative Investor Attention Measure

- We also measure investor attention using the number of SEC EDGAR filing searches prior to the SEO announcement date.

Dependent Variable	CAR [0:0]			CAR [1:21]		
	(1)	(2)	(3)	(4)	(25)	(6)
AbnNumEdgar [-7:-1]	-0.004**			0.023***		
	(-2.00)			(2.77)		
AbnNumEdgar [-14:-1]		-0.003**			0.019***	
		(-2.01)			(3.43)	
AbnNumEdgar [-30:-1]			-0.002**			0.009***
			(-2.30)			(2.68)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry×Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.024	0.024	0.025	0.012	0.013	0.012
Observations	3176	3181	3183	3180	3185	3187

- The results are consistent with our baseline results.