Advertising and the IPO Price Revision Process

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Abstract

We investigate how the intensity of product advertising just before an Initial Public Offering (IPO) impacts the change in the offer price between the initial price stated in the prospectus and the final price. An IPO is a crucial event for firms to raise substantial funds, so the proceeds determined by the offer price are extremely important. The offer price gets set through negotiations among the issuing firm, underwriters, and institutional investors, reflecting the firm's valuation and expected aftermarket share price. Analyzing data on 2,038 IPOs while mitigating endogeneity concerns, we find that an increase in advertising spending in the months leading up to the IPO is associated with an upward revision in the offer price. This effect is more pronounced for business-to-business issuers with lower consumer awareness. The proposed mechanism is that increased advertising drives higher retail investor participation on the first trading day, signaling greater awareness and demand that underwriters account for by negotiating higher offer prices. Lastly, we discuss factors that discourage issuers from taking undue advantage of this positive relationship.

Keywords: Advertising, Initial Public Offering (IPO), Price Revision

Track: Advertising & Marketing Communications

1. Introduction

1.1 Background and motivation

An Initial Public Offering (IPO) represents a pivotal event for firms seeking to raise substantial capital to fuel growth and expansion. The IPO proceeds, determined by the offer price and number of shares sold, are of utmost importance for managers as they directly impact the amount of funds raised. The offer price is set through a complex negotiation process involving the issuing firm, its underwriters, and institutional investors. This price reflects the issuer's valuation and the market's expectation of the share price to be realized on the first day of trading in the aftermarket. While prior research has examined the impact of advertising on financial markets and fundraising activities, its specific effect on the change in the offer price between the initial price stated in the prospectus and the final offer price (i.e., price revision) remains an understudied area. Our study suggests that advertising can play a strategic role in increasing the capital raised during an IPO by influencing price negotiations with institutional investors and underwriters.

1.2 Research question and contribution

This study addresses the central question: “Does pre-IPO product advertising influence the revision of an IPO's offer price?” Answering this question represents a significant contribution to both theory and practice. From a theoretical perspective, we highlight the strategic importance of marketing activities in the context of corporate finance and capital raising by shaping investor demand and valuations. Furthermore, the study provides insights into the underlying mechanisms through which advertising influences IPO price revision, offering a theoretical framework for understanding the interplay between marketing, investor behavior, and financial market outcomes. The key difference between our study and earlier studies that examined the effects of advertising on stock market outcomes in the context of IPOs (e.g., Luo, 2008; Chemmanur and Yan, 2009) is that we focus on the “behind the scenes” price revision process, while the literature focused on the effects of advertising on the underpricing anomaly. From the practitioners’ standpoint, we show that by leveraging advertising to increase awareness and attract retail investor demand in the aftermarket, firms may be able to negotiate higher valuations through the IPO process. However, various legal, reputational, and regulatory factors discourage issuers from

exploiting the positive link between advertising and price revisions in an undue or excessive manner.

2. Theoretical Framework

Advertising campaigns are known to build brand awareness and equity, which can attract more individual investors to participate in the stock after the IPO. We propose a mechanism linking advertising to higher IPO price revisions through increased retail investor demand post-IPO. This mechanism is consistent with the finance and marketing literature, in which product advertising increases consumers' awareness of the firm (Barber and Odean, 2008; Liaukonytė and Žaldokas, 2022). If awareness is heightened, more individuals will learn about the issuers (Da, Engelberg, and Gao, 2011) and increase the likelihood of buying the issuer's stock on the first day of trading. Therefore, strong anticipated participation by retail investors in the aftermarket is likely to increase profit expectations among institutional investors, which, in turn, could increase their willingness to participate in the IPO, as well as pay a higher offer price. This hypothesized effect of advertising on price revisions is expected to be stronger for firms whose familiarity among retail investors is lower, such as those operating in business-to-business (B2B) industries.

3. Data and Methodology

3.1 Data sources

We extracted information about all IPOs from the Securities Data Corporation (SDC) in 1996-2008, as 1996 was the first year that records on the documentation of the offer price changes were available, and 2008 was avoided due to the recession. We followed Chemmanur and Yan (2009)'s rationale for exclusions, resulting in a sample of 2,038 IPOs. Weekly advertising expenses for each issuer are acquired from Kantar Media. We added sales and other accounting information from COMPUSTAT and various stock market metrics from SDC and the Center for Research in Securities Price (CRSP). First day trading information on

prices and shares was collected from the Trade and Quote (TAQ) dataset provided by the New York Stock Exchange. All datasets were carefully merged based on issuer's name and ticker. Our main dependent variable is the price revision, calculated as follows: (final offer price – middle of the initial offer price range) / middle of the initial offer price range, presented in percentage form. In our raw dataset, the average revision is roughly 3%, SD = 0.289, and 85% of the issuers experienced some form of revision (positive or negative).

3.2. Model-free evidence

We first show that the issuers advertise strategically before the IPO. The average advertising expense significantly increases before the IPO and shows a clear decrease after the IPO (Figure 1; p-values for the slopes < 0.001). Furthermore, we show that this pattern in ad expense is positively associated with price revision (Figure 2). Those issuers with higher-than-median price revisions significantly increased advertising 6 months before the IPO more than those with lower-than-median price revisions (p-value = 0.034).

Figure 1. Average Advertising before and after the IPO

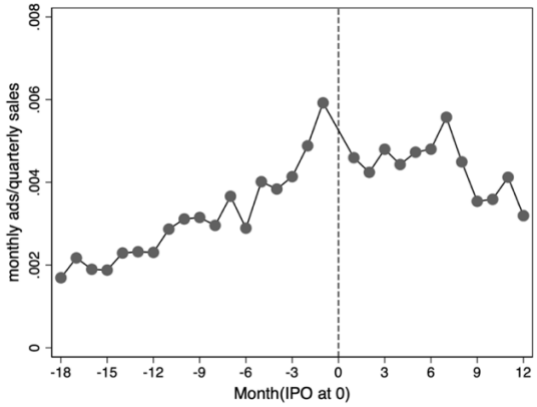
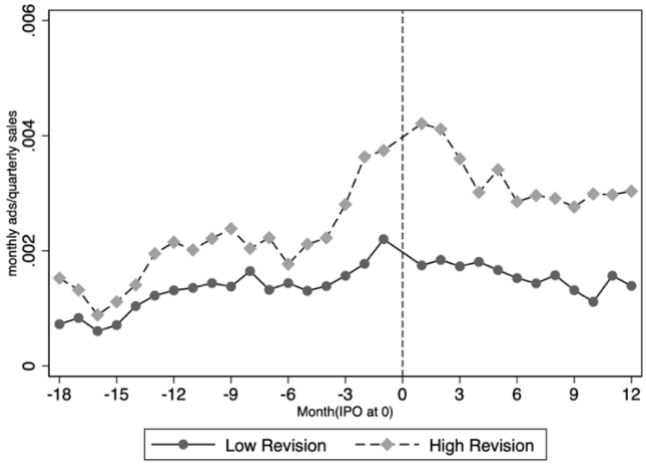


Figure 2. Advertising before and after the IPO for firms with low and high price revisions



Notes. This plot presents a time series of normalized advertising spending in the months before and after the IPO as a function of IPO price revision (median split on raw data). We construct a binary indicator variable that takes the value 1 for months (-3) to (-1) and the value 0 for months (-6) to (-4). We regressed advertising spending on the interaction of the aforementioned indicator and an indicator for the median split of the price revision (1=high price revision), controlling for issuer and month fixed effects. In this analysis, the interaction coefficient captures how much more an average issuer with a high price revision spent on advertising compared to an average issuer with a low price revision. Results show a significant coefficient for the interaction term (β = 0.0008, SE = 0.0004, p = 0.034).

3.2 Empirical strategy

To formally test the causal relationship between the advertising intensity in the months leading to the IPO and the price revisions, we need to overcome three types of empirical challenges. The first challenge is omitted variable bias, such as time trends at the macro- or industry-level and unobserved heterogeneity across industries and deals. The second challenge is selection, which is caused by issuers' strategic (non-random) decisions to advertise. The third challenge is reverse causality, given how the price revision variable is constructed.

We use the following empirical strategies to mitigate these challenges: (1) Omitted variable bias: We include three sets of fixed effects: quarterly-, industry-, and lead-underwriter-fixed effects to capture market sentiment and heterogeneity across industries, lead underwriters, and time. We include a comprehensive set of control variables at the deal level to control for the issuer-level characteristics and proxy for some critical pricing-related events, such as road shows. (2) Selection: We reweigh the issuers based on covariate balancing generalized propensity score (CBPS) to address the potential selection bias. Specifically, we used a nonparametric covariate balancing generalized propensity score (npCBGPS) approach (Fong, Hazlett, and Imai 2018) to generate sample weights that ensure covariates' balance while maximizing the empirical likelihood of observing the data. This approach is suitable for continuous treatments and less sensitive to the distribution assumption of the propensity score. The covariates we balanced are the issuer's age in years, size (book value), EbIT (lagged earnings before interest, taxes, depreciation, and amortization), LDR (leverage ratio), whether the issuer was backed by a venture capital firm, whether the underwriting team is a syndication of underwriters, whether the issuer is a technology firm, and the issuer's industry classification coded as binary indicators. (3) Reverse causality: To mitigate reverse causality, we carefully construct the advertising spending at the weekly level before the week of IPO instead of relying on the calendar time (e.g., Chemmanur and Yan, 2017). Every 4 weekly observations are then grouped into one

monthly observation, and every 12 weeks are grouped into one quarterly observation. This operation ensures that the ad measure takes place entirely before the IPO. Moreover, we use a two-stage Gaussian Copula (Yang, Qian, and Xie, 2023) to address the remaining concerns about reverse causality by explicitly modeling the joint distribution between the advertising change (endogenous regressor) and the structural error term. We further control for the lagged moments of price revisions at the industry level.

The econometric model for the price revision of issuer *i* (PR_i) can be written as:

$$PR_i = \beta AC_i + \alpha^T issuer_i + \gamma^T market_i + \delta_{ind(i)} + \delta_{uw(i)} + \delta_{qtr(i)} + \varepsilon_i, \quad (1)$$

where AC_i captures the quarterly change in normalized advertising spending in two quarters before the IPO, i.e., $AC_i = \log(1 + A_{i,qtr(i)-1}/S_{i,qtr(i)-2}) - \log(1 + A_{i,qtr(i)-2}/S_{i,qtr(i)-3})$, where *A* is advertising spending and *S* is sales. β is the coefficient of interest. Advertising spending was normalized by lagged quarterly sales and log-transformed to denote the diminishing effect of advertising. $issuer_i$ refers to a vector of issuer-specific characteristics and $market_i$ is a vector of market-level characteristics around the time of the IPO; α and γ represent the corresponding coefficients. We include three sets of fixed effects: $\delta_{ind(i)}$ captures the time-invariant difference across industries (the 12 industry categories based on Fama and French, 1996); $\delta_{uw(i)}$ summarizes difference across lead underwriters; $\delta_{qtr(i)}$ abstracts away the (calendar) quarterly time trend (Pástor and Veronesi, 2005) and the technology bubble years 1999–2001. For robustness, we added two fixed effects interactions to capture time-varying heterogeneity in industry and lead underwriters. The error term, ε_i, follows a normal distribution. We highlight several issuer-level control variables that were overlooked in the empirical literature: (1) *Registration Period,* the length of time from the date the prospectus was filed to the IPO date (Lowry, Michaely, and Volkova, 2020); (2) *Number of offer price amendments* during the bookbuilding (BB) period that partially accounts for the outcome of the roadshows (Ritter and Welch, 2002). (3) *Registration fee calculation method* based on the Securities Act Rule 457 section (Corrigan 2022).

4. Findings

4.1 There is a positive association between advertising change and price revision

The main results (Table 1) indicate a positive and statistically significant relationship between increases in pre-IPO advertising spending and upward revisions in the offer price. Specifically, a one standard deviation increase in advertising expenditure is associated with a 3-4% increase in the offer price relative to the initial mid-point stated in the prospectus (Column 4, Table 1). The results are robust to different specifications (e.g., unweighted, more/fewer fixed effects, and price revision calculations). We also find that reverse causality is not the main source of the endogeneity in our specification since the coefficients of the Gaussian Copula control function is insignificant (Columns 5 and 6, Table 1).

Table 1. The effect of advertising spending change on the issuer's price revision

DV = % Price revision	1	2	3	4	5	6
CBPS weighted	No	No	Yes	Yes	Yes	Yes
Log ad spending change	0.2264*	0.3561**	0.2815***	0.3686***	0.3227*	0.3779**
	[0.1251]	[0.1366]	[0.0741]	[0.0806]	[0.1810]	[0.1915]
Gaussian Copula					-0.0036	-0.0009
					[0.0077]	[0.0104]
Issuer-level controls	Yes	Yes	Yes	Yes	Yes	Yes
Market-level controls	Yes	Yes	Yes	Yes	Yes	Yes
FEs A: IPO quarter	Yes	Yes	Yes	Yes	Yes	Yes
FEs B: Industry (FF12)	Yes	Yes	Yes	Yes	Yes	Yes
FEs C: Lead Underwriter	Yes	Yes	Yes	Yes	Yes	Yes
A×B	No	Yes	No	Yes	No	Yes
B×C	No	Yes	No	Yes	No	Yes
R-squared	0.362	0.477	0.366	0.482	0.366	0.482

Notes. This table presents the results of OLS models with two fixed effects specifications (without fixed effects interactions: models 1, 3, 5). Issuer-level controls include venture, tech, and syndicate indicators, log(LDR), and sales change, registration period, number of price amendments, and Rule457. Market-level controls include the number of IPOs, revision BB, revision SD BB, first-day return BB, first-day return SD BB, market return BB, and market return SD BB. Standard errors are clustered at the industry level displayed in brackets. *** p<0.01, ** p<0.05, * p<0.1.

4.2. Non-consumer-facing issuers show stronger advertising effects

To further test the mechanism, we explored how issuer-level characteristics, including industries, age, and size, moderate the effect of advertising spending change on its price revision. We find that the effect of increased advertising spending is stronger for issuers from non-consumer-facing industries (Column 1 in Table 2), and this model has the highest explanatory power (with the biggest R-square). The moderating effects of age and size are negative but insignificant. These findings provide the first piece of evidence supporting the

awareness mechanism and allow us to refute an alternative explanation that the issuer's value increased because of better sales (due to heightened advertising), as b2b companies generally do not benefit much from consumer advertising.

Table 2. The moderating effects of advertising spending change on the issuer's price revision

DV = % Price revision	1	2	3
CBPS weighted	Yes	Yes	Yes
Log ad spending change	0.2767***	0.2104	0.3697***
	[0.0200]	[0.1268]	[0.0850]
Log ad spending change × I(non-consumer industry)	0.2909***		
	[0.0516]		
Log ad spending change × Log(age) (3-tile)		-0.2305	
		[0.3243]	
Log ad spending change × Size (3-tile)			-0.0462
			[0.3797]
All control variables (Table 1)	Yes	Yes	Yes
Fixed effects including A×B and B×C	Yes	Yes	Yes
R-squared	0.482	0.478	0.477

Notes. This table presents the results of OLS with three types of moderating effects: (1) whether the issuer is a non-consumer facing business-to-business type (FF12: manufacturing, energy, chemicals, telecom, utilities, wholesale, healthcare, finance, and other such as construction). (2) (3) age and size are coded in tertiles as -1, 0, 1, and then interacted with the ad spending variable. Standard errors are clustered in industry displayed in brackets. *** p<0.01, ** p<0.05, * p<0.1

4.2. Retail trading in the aftermarket increased with advertising spending

Using TAQ data on the first day of trading, we find that pre-IPO advertising is positively associated with retail demand in the aftermarket (Table 3), including more retail investor participation (i.e., retail trade dollar volume / total dollar volume) and more retail trade purchases (i.e., buyer-initialed retail trade dollar volume / total dollar volume). These findings further support the awareness mechanism by which advertising affects retail investors.

Table 3. Effect of advertising spending change on retail trades on the first day of trading

	1	2
DV	Retail trade participations	Retail trade purchases
Log ad spending change	0.0543***	0.0329***
	[0.0140]	[0.0061]
All Control Variables	Yes	Yes
Industry (FF12)	Yes	Yes
Lead Underwriter	Yes	Yes
R-squared	0.222	0.211

Notes. This table presents the results of OLS models with two specifications of dependent variables. Results are for the weighted sample. Clustered standard errors in brackets. *** p<0.01, ** p<0.05, * p<0.1.

4.3. Factors Discouraging Undue Advantage

What may discourage issuers from taking undue advantage of the relation between advertising and offer price revision? (1) Litigation risk: excessive advertising could potentially be viewed as an attempt to mislead investors, increasing litigation exposure. (2) Underwriter reputation: Reputable underwriters have strong incentives to maintain their credibility (among their peers—other retail investors, and among potential clients—other issuers) and avoid being perceived as complicit in inflating offer prices through advertising. (3) Long-term investor relations: Overly aggressive or misleading advertising tactics around an IPO could damage investor trust and confidence in the firm's management, potentially hindering future capital-raising efforts and negatively impacting the firm's valuation and stock performance.

5. Conclusion

Successful IPOs are crucial for issuing firms because they represent unique opportunities for firms, some of them relatively new and unknown, to raise substantial funds that can ensure their long-run survival and success. While the underwriting team, with the aid of the issuer's management, focuses its efforts on roadshow presentations to financial institutions, the issuer's managers have an additional marketing tool: product market advertising. Our findings show that increasing advertising spending in the quarter before the IPO is associated with a significant boost in the offer price and the proceeds issuers receive. Using TAQ data, we provide evidence that issuers that increased advertising outlays just before their IPO experienced higher retail investor participation on the first day of trading. It is the expectation of such increased participation that leads financial institutions to agree to increase the offer price. Further, we find that non-consumer-facing issuers, who are likely to be less known to retail investors, are the ones who benefit more from increasing their advertising spending. Finally, we discuss why managers, underwriters, and financial institutions are unlikely to take undue advantage of the positive association between the increase in advertising spending before the IPO and the offer price revision. We find directional support for our reasoning in analyzing IPO-related litigation data.

6. Reference

Barber, B. M., & Odean, T. (2008). All that glitters: The effect of attention and news on the buying behavior of individual and institutional investors. *The Review of Financial Studies, 21*(2), 785–818.

Chemmanur, T., & Yan, A. (2009). Product market advertising and new equity issues. *Journal of Financial Economics, 92*(1), 40–65.

Chemmanur, T., & Yan, A. (2017). Product market advertising, heterogeneous beliefs, and the long-run performance of initial public offerings. *Journal of Corporate Finance,* 46, 1–24.

Corrigan, P. M. (2022). Does an initial public offering (IPO) issuer's Securities and Exchange Commission registration fee calculation method predict pricing revisions and IPO underpricing? *Journal of Empirical Legal Studies, 19*(4), 1114–1147.

Da, Z., Engelberg, J., & Gao, P. (2011). In search of attention. *The Journal of Finance, 66*(5), 1461–1499.

Fama, E. F., & French, K. R. (1996). Multifactor explanations of asset pricing anomalies. *The Journal of Finance, 51*(1), 55–84.

Fong, C., Hazlett, C., & Imai, K. (2018). Covariate balancing propensity score for a continuous treatment: Application to the efficacy of political advertisements. *The Annals of Applied Statistics, 12*(1), 156–177.

Liaukonytė, J., & Žaldokas, A. (2022). Background noise? TV advertising affects real-time investor behavior. *Management Science, 68*(4), 2465–2484.

Lowry, M., Michaely, R., & Volkova, E. (2020). Information revealed through the regulatory process: Interactions between the SEC and companies ahead of their IPO. *The Review of Financial Studies, 33*(12), 5510–5554.

Luo, X. (2008). When marketing strategy first meets Wall Street: Marketing spendings and firms' initial public offerings. *Journal of Marketing, 72*(5), 98–109.

Pástor, Ľ., & Veronesi, P. (2005). Rational IPO waves. *The Journal of Finance, 60*(4), 1713–1757.

Ritter, J. R., & Welch, I. (2002). A review of IPO activity, pricing, and allocations. *The Journal of Finance, 57*(4), 1795–1828.

Yang, F., Qian, Y., & Xie, H. (2023). Addressing endogeneity using a two-stage copula-generated regressor approach. *NBER Working Paper No. 29708.* National Bureau of Economic Research.