

Pitching IPOs

Exaggeration and the Marketing of Financial Securities



Introduction

This is a study of the marketing of financial securities in general, and IPOs in particular, looking at the initial wave of internet firm stock offerings from 1990 -2006.



Introduction

- Many ways to market an IPO (Simon, et al 2002)
 - Book Building / Road Shows
 - Prospectus
 - Media / Advertising
 - Internet / Blogs
 - Company Branding Efforts
 - Company PR Efforts
 - Communication from Corporate Officers
 - Press Releases
 - Special Offers on the Company's Products
 - etc...

...all for the purpose of generating buzz and influencing investor behavior.



Introduction

- We focus on the Prospectus
 - Specifically, the Introductory Summary and the MD&A Summary

- Content Analysis techniques relatively new to the world of finance
 - Widely used in literature for other disciplines
 - Psychology
 - Communication
 - Journalism
 - Other Social Sciences

 - Finance Literature
 - Tetlock (2007)
 - Tetlock, et al (2008)
 - Li (2006)
 - Davis, et al (2006)
 - Antweiler and Frank (2004)
 - Loughran, et al (2007)
 - Sadique, et al (2008)
 - Das and Chen (2006)
 - Mohan (2006)



Introduction

- We look at the Sentiment/Tone of the prospectus and its relation to:
 - Firm characteristics
 - Contemporaneous market conditions
 - Third party participants
 - Sophistication of the target investors
- Analyze the content of the language used by the document authors
 - Capture their conscious effort to put the offering's best foot forward.
- This is the first study to analyze IPOs using measures of sentiment.



Summary Results Slide

- Prospectus tone affects initial price changes as measured by a combination of offer price adjustment and first day returns.
- Companies do try to put their best foot forward and make a conscientious effort to paint a rosy picture in the wording of the prospectus.
- Added promotional emphasis is placed on that portion of the prospectus that is expected to be read more.
- Small firms are significantly more expressive than large firms.
- Firm characteristics, underwriters, and market conditions all matter.
- The importance/impact of the effort depends on the availability of other means of promotion.



Sample / Data

- Loughran and Ritter (2004) identified internet IPOs
 - Jay Ritter has maintained an updated list of these companies, and all IPOs, on his website.
 - 589 firms (1990 – 2006)
- Prospectus Text
 - 532 firms have electronic copies of the prospectus available on Edgar.
 - 37 hard copies were obtained from the Graeme Howard-Todd Huxster collection of IPO prospectuses maintained by Jay Ritter.
- SDC
 - Offering specific data
 - 556 firms
- Compustat
 - Accounting data
 - 575 firms
- Yahoo! Finance
 - NASDAQ index level



Quantifying Tone

- The term *Content Analysis* has been around, in a formal sense, for roughly half a century.
- It appeared in the 1961 edition of Webster's Dictionary of the English Language defined as,

“analysis of the manifest and latent content of a body of communicated material through classification, tabulation, and evaluation of its key symbols and themes in order to ascertain its meaning and probable effect”.



Quantifying Tone

- General Inquirer (“GI”)
 - Content Analysis Software
 - Developed by Harvard researcher Philip J. Stone
 - Stone, et al 1966
 - Identifies about 13,000 root words
 - In excess of 6,300 disambiguation rules applied to each word
- Harvard IV-4 Psychosocial Dictionary
 - Contains 77 separate categories
 - Classifies identified words by category
 - A word may be more than one dimension and, thus, fit within several categories.



Quantifying Tone

GI Category	Number of words and Description
Positive:	1,915 words of positive outlook.
Negative:	2,291 words of negative outlook.
Strong:	1902 words implying strength.
Weak:	755 words implying weakness.
Active:	2045 words implying an active orientation.
Passive:	911 words indicating a passive orientation.
Overstated:	696 words indicating emphasis in realms of speed, frequency, causality, inclusiveness, quantity or quasi-quantity, accuracy, validity, scope, size, clarity, exceptionalism, intensity, likelihood, certainty and extremity.
Understated:	319 words indicating de-emphasis and caution in these realms.



Quantifying Tone

Lead #4: Pos, Strong, Ovrst

- Example Text

THE COMPANY Amazon.com is the leading online retailer of books. Since opening for business as "Earth's Biggest Bookstore" in July 1995, the Amazon.com bookstore has quickly become one of the most widely known, used and cited commerce sites on the World Wide Web (the "Web").

Become: Passive

Quick: Active, Ovrst

- Example GI Output

Word Count	Pos	Neg	Strong	Weak	Active	Passive	Ovrst	Undrst
53	1	0	5	0	3	1	3	0



Hypotheses

- H1: IPO issuers and their underwriters attempt to influence investors in their presentation of required disclosures in the prospectus.
- H2: Evidence is stronger in the area of the prospectus that is expected to receive more attention.
- H3: Firms with a more desperate need for equity funds will exert a greater marketing effort in the language of the prospectus.
- H4: Favorable market conditions will result in a decrease in the marketing effort of the prospectus.
- H5: The importance of the wording in the prospectus should decrease as other marketing avenues become available.



Figure 1

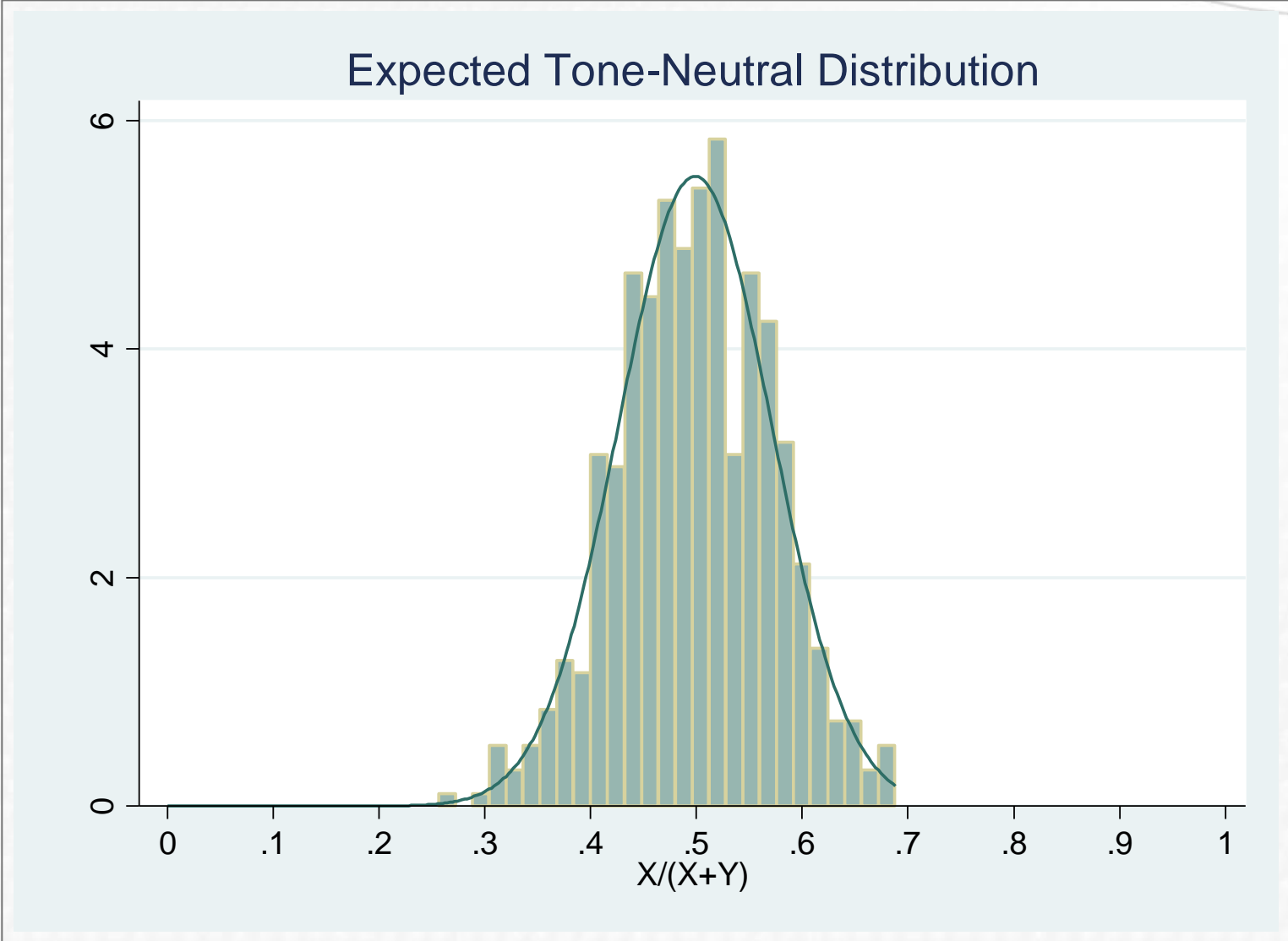


Figure 2

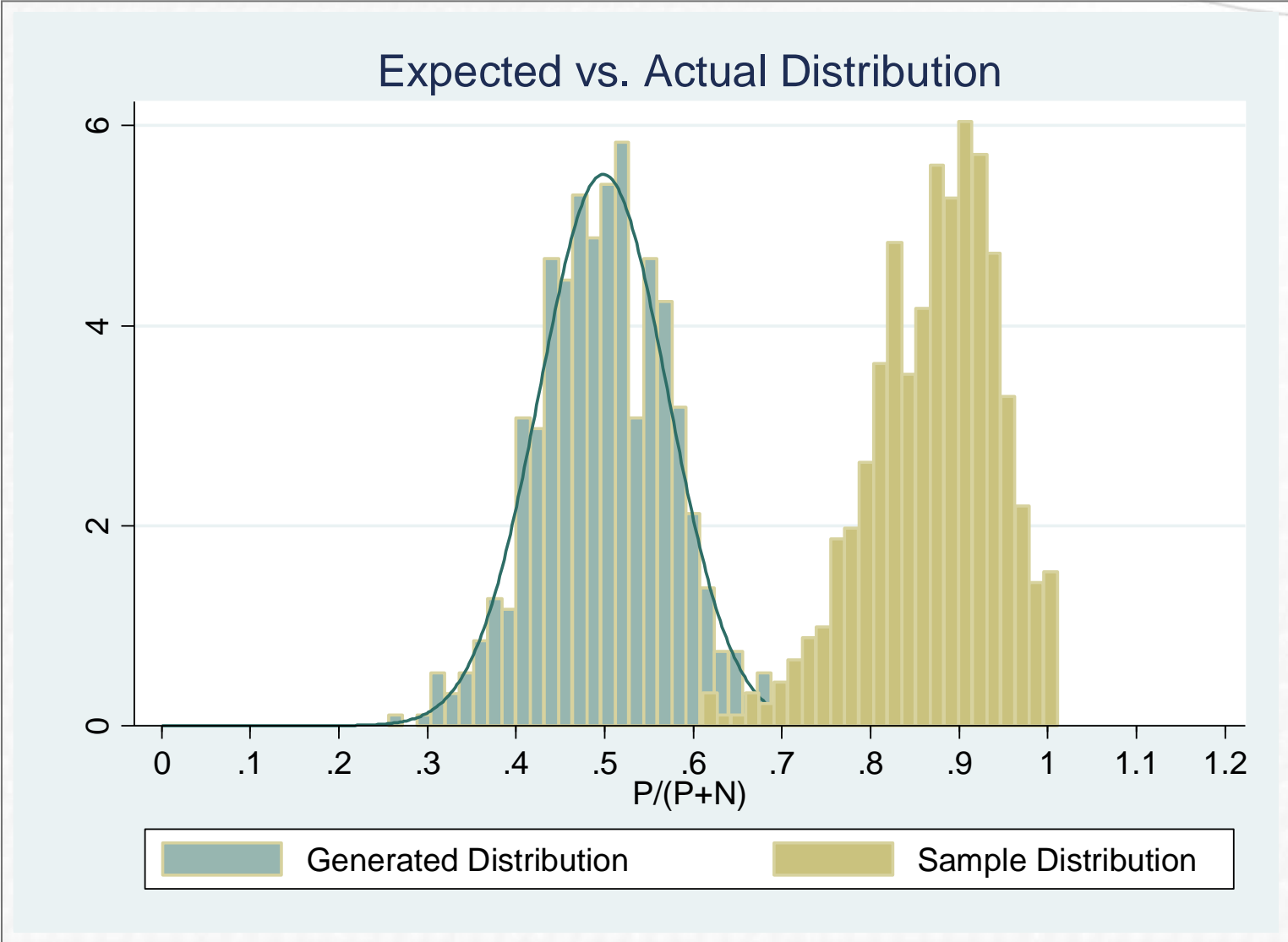


Figure 3

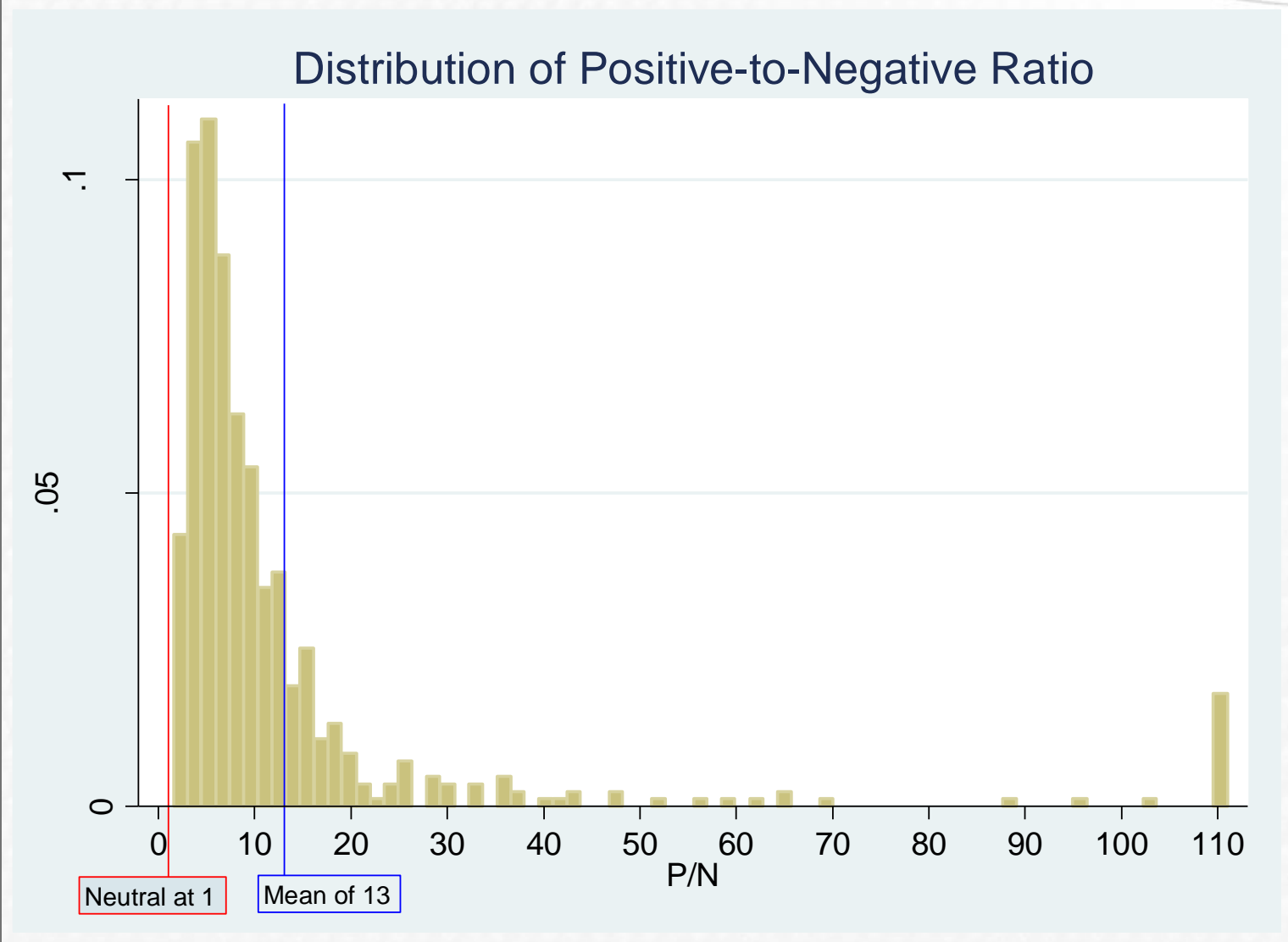


Table 2: Univariate Analysis, Full Sample

$$\begin{cases} H_o: \mu = 1 \\ H_a: \mu \neq 1 \end{cases}$$

$$\begin{cases} H_o: \mu = .5 \\ H_a: \mu \neq .5 \end{cases}$$

Intro Section

	P/N	S/W	A/P	O/U	P/ (P+N)	S/ (S+W)	A/ (A+P)	O/ (O+U)
μ	13.08***	27.08***	4.08***	8.49***	0.87***	0.94***	0.79***	0.83***
σ	19.58	24.78	1.77	9.13	0.07	0.04	0.06	0.10

MD&A Section

	P/N	S/W	A/P	O/U	P/ (P+N)	S/ (S+W)	A/ (A+P)	O/ (O+U)
μ	3.54***	12.97***	2.66***	5.99***	0.72***	0.91***	0.71***	0.81***
σ	4.49	8.60	0.97	6.66	0.10	0.04	0.06	0.07

*** p<0.01, ** p<0.05, * p<0.1



Table 3: Univariate Analysis, by Section

$$\left\{ \begin{array}{l} H_o: \mu_{Intro} = \mu_{MD\&A} \\ H_a: \mu_{Intro} \neq \mu_{MD\&A} \end{array} \right\}$$

	P/N	S/W	A/P	O/U
μ_{Intro}	13.08	27.08	4.08	8.49
$\mu_{MD\&A}$	3.54	12.97	2.66	5.99
p value	0.0000***	0.0000***	0.0000***	0.0000***

	P/ (P+N)	S/ (S+W)	A/ (A+P)	O/ (O+U)
μ_{Intro}	0.87	0.94	0.79	0.83
$\mu_{MD\&A}$	0.72	0.91	0.71	0.81
p value	0.0000***	0.0000***	0.0000***	0.0003***



Table 4: Univariate Analysis, by Size

$$\left\{ \begin{array}{l} H_0: \mu_S = \mu_L \\ H_a: \mu_S \neq \mu_L \end{array} \right\}$$

Small Offering < \$100M

Large Offering \geq \$100M

Intro Section

	P/N	S/W	A/P	O/U	pc ratio
μ_S	13.99	28.19	4.13	8.97	0.09
μ_L	8.50	22.83	3.99	7.07	-0.32
p value	0.0079***	0.0473**	0.4771	0.0580*	0.0059***

	P/ (P+N)	S/ (S+W)	A/ (A+P)	O/ (O+U)	pc percent
μ_S	0.87	0.94	0.79	0.83	0.06
μ_L	0.86	0.94	0.79	0.82	-0.27
p value	0.0219**	0.1593	0.8837	0.0780*	0.0200**

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$



Table 5: Univariate Analysis, by Size

$$\left\{ \begin{array}{l} H_0: \mu_S = \mu_L \\ H_a: \mu_S \neq \mu_L \end{array} \right\}$$

Small Offering < \$100M

Large Offering \geq \$100M

MD&A Section

	P/N	S/W	A/P	O/U	pc ratio
μ_S	3.73	13.12	2.66	6.23	0.05
μ_L	3.05	12.81	2.72	5.31	-0.09
p value	0.1678	0.7407	0.5815	0.2133	0.3042

	P/ (P+N)	S/ (S+W)	A/ (A+P)	O/ (O+U)	pc percent
μ_S	0.73	0.91	0.71	0.82	0.07
μ_L	0.70	0.91	0.72	0.81	-0.13
p value	0.0030***	0.6403	0.1476	0.3079	0.1233

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$



Multivariate Analysis:

$$\text{Tone}_i = \alpha + \beta_1 \text{Ln Assets} + \beta_2 \text{Desperate} + \beta_3 \text{Leverage} + \beta_4 \text{Ln Age} \\ + \beta_5 \text{Underwriter Rank} + \beta_6 \text{Hotness} + \beta_7 \text{NASDAQ} + \beta_8 \text{VC} + \varepsilon \quad (1)$$

Ln Assets:	Log of Compustat data6
Desperate:	0/1 dummy based on acid test ratio, if <1 then =1, if >1 then = 0
Leverage:	Debt / (Debt + Equity)
Ln Age:	Log of offer year minus founding year
Underwriter Rank:	8.0 – 9.0 indicates prestigious national underwriter 5.0 – 7.9 denote quality regional or niche underwriter 0 – 4.9 are generally associated with penny stocks
Hotness:	Percent of IPOs that priced above the midpoint of the original file price range 3 months prior to issue
NASDAQ:	Index level average from 90 to 30 days prior to issue
VC:	0/1 dummy, 1 if venture backed, 0 if not



Prior Expectations

Ln Assets: Negative sign. As firms become more visible they may not need to try as hard to hype the offering.

Desperate: Positive sign. If firm is desperate for cash then they will try harder.

Leverage: Positive sign. As debt goes up firms will need to turn to equity.

Ln Age: Negative sign. Longer track record should speak for itself.

Underwriter Rank: Negative sign. Firms can rely on the certification value of the prestigious banks. The lower tier banks will need to be more persuasive.

Hotness: Negative sign. The hotter the IPO market the less effort needed.

NASDAQ: Negative sign. The hotter the market overall, the less effort needed to sell.

VC: Positive sign. Venture capital pressure to cash out.



Table 6: Intro Section

	P/(P+N)	S/(S+W)	A/(A+P)	O/(O+U)	PC
Ln Assets	-0.00275**	0.000164	-0.000863	-0.00254	-0.0310
Desperate	-0.00170	-0.00215**	-0.00251	0.00226	-0.0409
Leverage	-0.00000301***	-0.00000437***	-0.00000569***	-0.00000754***	-0.000157***
Ln Age	-0.00365	0.000826	0.00489*	0.00760**	0.0431
Underwriter Rank	-0.00527***	-0.000305	0.00545**	0.00110	-0.0154
Hotness	0.000315**	0.0000803	0.000109*	0.0000181	0.00400
NASDAQ	-0.0000104***	-0.00000905***	-0.00000415**	-0.00000994***	-0.000288***
VC	-0.00228	-0.00360	0.00780**	0.0210***	0.0368
Constant	0.939***	0.967***	0.738***	0.832***	0.680***
Observations	511	511	511	511	511

*** p<0.01, ** p<0.05, * p<0.1



Table 7: MD&A Section

	P/(P+N)	S/(S+W)	A/(A+P)	O/(O+U)	PC
Ln Assets	-0.00447***	0.00149*	0.00230	0.00223	0.0292
Desperate	0.00691	0.00627***	0.00548	0.000946	0.181
Leverage	-0.0000178***	-0.00000446***	-0.00000455***	0.0000137***	-0.0000991***
Ln Age	0.0122***	0.000843	0.000235	0.00636***	0.118***
Underwriter Rank	-0.00461***	-0.000555	-0.00316	0.0000227	-0.0456
Hotness	0.0000962	0.00000108	-0.000120	0.0000543	0.000217
NASDAQ	-0.0000131***	-0.00000285	0.00000163	0.00000264	-0.0000875*
VC	0.0243*	-0.00468	-0.000317	0.00492	0.0737
Constant	0.763***	0.920***	0.732***	0.785***	0.249
Observations	511	511	511	511	511

*** p<0.01, ** p<0.05, * p<0.1



Multivariate Analysis: Uncertainty and Tone

$$\begin{aligned} \text{Tone}_i = & \alpha + \beta_1 \text{Ln Assets} + \beta_2 \text{Desperate} + \beta_3 \text{Leverage} + \beta_4 \text{Ln Age} \\ & + \beta_5 \text{Underwriter Rank} + \beta_6 \text{Hotness} + \beta_7 \text{NASDAQ} + \beta_8 \text{VC} + \varepsilon_i \end{aligned} \quad (1)$$

$$\varepsilon_i = \alpha_i + \gamma_i \text{HLM}_i + u_i \quad (2)$$

ε_i : The residuals from the first equation

HLM: (High File Price – Low File Price) / Mid File Price



Table 8: Uncertainty and Tone

HLM = (High File Price – Low File Price) / Mid File Price

HLM	Residual P/(P+N)	Residual S/(S+W)	Residual A/(A+P)	Residual O/(O+U)	Residual PC
Intro – Full	0.1019899	0.0109455	0.0216477	-0.1409409*	0.3940453
Intro – Large	0.3847622***	0.0839565**	0.0970758	-0.1706843	4.005152***
Intro – Small	0.0656918	-0.0041075	0.0131187	-0.1494497*	-0.2365804
Intro – Worst	0.1121003	0.0248411	0.0428688	-0.0222596	0.7656384
MD&A – Full	0.033189	-0.0090307	-0.0401798	0.0775795**	0.3180392
MD&A - Large	0.5188203***	-0.0634608	0.1571918***	-0.1323312	1.322144
MD&A - Small	-0.0382788	-0.0102628	-0.0668795	0.0980959***	-0.0519438
MD&A - Worst	-0.2055336	0.0276806	-0.1584417**	0.0966673	-0.5807848

*** p<0.01, ** p<0.05, * p<0.1



Multivariate Analysis:

$$\begin{aligned} \text{Price} = & \alpha + \delta_1 \text{ Ln Assets} + \delta_2 \text{ Ln Age} + \delta_3 \text{ Underwriter Rank} \\ & + \delta_4 \text{ Hotness} + \delta_5 \text{ NASDAQ} + \delta_6 \text{ 1}^{\text{st}} \text{ Day Ret} \\ & + \delta_7 \text{ VC} + \delta_8 \text{ Tone}_i + \eta \end{aligned} \quad (3)$$

Price: $[(1 + \text{pre offer price adjustment as \% of mid}) (1 + \% \text{ price change first day})] - 1$

Hotness: Percent of IPOs that priced above the midpoint of the original file price range the month of issue

NASDAQ: Index level average from 2 weeks prior to issue

1st Day Ret: Average first day returns for all IPOs the month of issue

Tone_i: $P/(P+N)$, $S/(S+W)$, $A/(A+P)$, $O/(O+U)$, PC



Table 9: Intro, Price Change

	Price	Price	Price	Price	Price
Ln Assets	0.0922	0.103	0.107	0.108*	0.101
Ln Age	-0.321**	-0.310**	-0.315**	-0.303***	-0.309**
Underwriter Rank	0.198***	0.213***	0.213***	0.213***	0.212***
Hotness	0.00771*	0.00796**	0.00836**	0.00907**	0.00778**
NASDAQ	-0.000251***	-0.000242***	-0.000234***	-0.000226***	-0.000243***
1st Day Return	0.0255***	0.0254***	0.0252***	0.0249***	0.0254***
VC	0.201*	0.211	0.210	0.173	0.215

Continued below...



Table 9: Intro, Price Change

	Price	Price	Price	Price	Price
P/(P+N)	-2.664**				
S/(S+W)		-1.020			
A/(A+P)			0.0314**		
O/(O+U)				0.0178***	
PC					-0.0405
Constant	1.108	-0.444	-1.585***	-1.651***	-1.393***
Observations	437	437	437	437	437
R-squared	0.250	0.242	0.243	0.248	0.243

*** p<0.01, ** p<0.05, * p<0.1



Table 10: Price Change & Tone

Price: $[(1 + \text{pre offer price adjustment as \% of mid}) (1 + \% \text{ price change first day})] - 1$

Price	P/(P+N)	S/(S+W)	A/(A+P)	O/(O+U)	PC
Intro – Full	-2.664**	-1.020	0.0314**	0.0178***	-0.0405
Intro – Large	-7.174***	5.014**	0.116	0.0469***	0.0220
Intro – Small	-1.751**	-2.673	0.0368	0.0148***	-0.0414
Intro – Worst	-5.354***	-8.976**	0.00758	-0.0107	-0.442***
MD&A – Full	-1.907*	-6.966**	-0.241***	0.0119**	-0.199*
MD&A - Large	-5.520***	-11.68***	-0.343*	0.102	-0.384**
MD&A - Small	-0.660	-5.837***	-0.243***	0.00534	-0.147
MD&A - Worst	-1.603	6.826**	0.136	0.0307***	0.158*

*** p<0.01, ** p<0.05, * p<0.1



Conclusion

The results imply that entrepreneurs/underwriters are not using boiler plates in the narrative sections of the prospectus that are most likely to be read.

Firms of all sizes paint a rosy picture, with smaller issues doing so in a more significant and emphatic way.

Firm characteristics such as assets, available cash, leverage, and age all contribute to how the language of the prospectus is crafted.

Third party elements, such as underwriters quality and venture capital participation, matters.

Overall market conditions and the number of IPOs shortly preceding the offering make a difference.

The impact of using the prospectus as a marketing tool depends on the availability of other marketing channels.

Prospectus tone affects a combination of price change and first day returns.



Thank You

