Underwriters' Stock Price Performance at IPO

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Abstract

In this study, we examine the litigation risk hypothesis of IPO underpricing. The contribution of this study is in expanding of both underwriters and issuing companies' managers' knowledge in the area of litigation risk and costs in the IPO process. To the best of our knowledge, this has not been done in the literature so far and our study fills an important void in the existing literature. We document that excess issuing company first day return has statistically significant positive impact on the underwriters' excess first day returns in several model specifications. This finding suggests that the larger the underpricing the higher the reward to the underwriter. From the perspective of the underwriters, our study provides evidence supporting the idea that in order to maximize shareholder wealth, underwriters would be highly motivated to underprice the IPO as much as possible.

1. Introduction

In this paper, we study the performance of lead underwriters' stock price after an Initial Public Offering (IPO). An IPO with a jump, positive return, on the first day of trading is considered to be a successful IPO for the underwriters whereas an IPO without a jump is considered a failure and very often is followed by lawsuits for the company and underwriters.

Stempel and Levine (2012) wrote:

"(Reuters) - Facebook Inc and lead underwriter Morgan Stanley were sued by shareholders who claimed they hid the social networking company's weakened growth forecasts ahead of its $16 billion initial public offering.

The lawsuit came as Facebook and the banks that took it public face questions about the IPO, which culminated in a May 18 stock market debut plagued by technical glitches.

Facebook shares fell 18.4 percent from their $38 IPO price in their first three trading days. They were up $1.08, or 3.5 percent, at $32.08 in Wednesday afternoon trading.

The lawsuit claimed that the defendants, including Facebook Chief Executive Mark Zuckerberg, Goldman Sachs Group Inc and JPMorgan Chase & Co, concealed "a severe and pronounced reduction" in revenue growth forecasts resulting from greater use of Facebook's app or website through mobile devices."

Therefore, in this study we explore and elaborate on the litigation risk hypothesis of IPO underpricing. The contribution of this study is in expanding of both underwriters and issuing companies' managers' knowledge in the area of litigation risk and costs in the IPO process. To the best of our knowledge, this has not been done in the literature so far.

We document that excess issuing company first day return has statistically significant positive impact on the underwriters' excess first day returns in several model specifications. These results suggest support for rejection of our null hypothesis of negative relation between IPO firm stock return and underwriter return. This finding suggests that the larger the underpricing the higher the reward to the underwriter. This study is of interest to both underwriters and issuing companies managers. From the perspective of the underwriters' financial managers, our findings suggest that in order to maximize shareholder wealth they would be highly motivated to underprice the IPO as much as possible.

2. Literature Review & Methodology

As pointed out by Ibbotson, Sindelar and Ritter (194) there are three hypotheses for IPO underpricing – signaling hypothesis, information asymmetry hypothesis and litigation risk hypothesis. Lawsuit avoidance hypothesis of IPO underpricing has been developed and discussed by Tinic (1988), Drake and Vetsuypens (1993), Lowry and Shu (2002), Gande and Lewis (2009) and Lin, Pukthuanthong and Walker (2013). Tinic (1988) examines on weekly basis IPO underpricing based on the implementation of the Securities Act of 1933 and finds some evidence

in support of the idea that the underpricing serves as a form of insurance against liability. Drake and Vetsuypens (1993) test directly the lawsuit avoidance hypothesis by focusing on IPOs followed by lawsuits only and document that the underpricing is a very costly way of insuring against lawsuits. They focus on first day returns and argue that the IPO underpricing might not be related to lawsuit avoidance because the subsequent lawsuits occur in the undetermined future, which the hypothesis cannot address. Lowry and Shu (2002) expand on the examination of the lawsuit avoidance hypothesis by addressing some of the endogeneity issues present in prior studies. They also focus on first day returns. Gande and Lewis (2009) examine, on daily basis, shareholder wealth effects around the filing of lawsuits. Lin, Pukthuanthong and Walker (2013) examine the lawsuit avoidance hypothesis of IPO underpricing in international setting and use 15 and 30 day returns.

In this study, we focus and examine the role that litigation risk and costs play in IPOs. As discussed by Lowry and Shu (2002) – "For a firm planning to go public, the potential costs of litigation are substantial." (p. 310). What that means is that an increase in future litigation costs results in a reduction in future underwriter cash flows. The reduction in future underwriter cash flows thus would result in a decrease in the present value of those cash flows, ceteris paribus. This would result in a lower end of IPO day price relative to the start of IPO day price for the underwriter and a negative return for the day. Therefore, if an IPO goes wrong, i.e. there is no price jump during the IPO day for the IPO firm, the return for the underwriter should be lower too. Thus, our null hypothesis is:

H0: The lower the IPO firm return on IPO day, the higher the underwriter return that day.

If the null hypothesis is rejected, that would suggest support for the litigation risk hypothesis for IPO underpricing, i.e. underwriters would be underpricing IPOs more to minimize litigation risk.

We test the null hypothesis using the following regression model:

$$IBreturn = \alpha_0 + \beta_1 IPOfirmFirstDayReturn + \sum_{i=2}^{N} \beta_i Controls_i + \varepsilon_0, \qquad (1)$$

Where IBreturn is the first day of IPO underwriter return, IPOfirmFirstDayReturn is the return of IPO firm computed relative to the IPO offer price, control variables are as per the prior literature control variables and ε_0 is the error term. A statistically significant and positive regression coefficient β_1 would be an indication of rejection of the null hypothesis. We focus on first day returns similar to Drake and Vetsuypens (1993) and Lowry and Shu (2002). We choose to focus on first day returns and not on weekly returns, like Tinic (1988), or 15 and 30 day returns, like Lin, Pukthuanthong and Walker (2013), because the major investment banks have main line of business the issuance of securities and are very likely to be involved with many different issues over a week, 15 days or 30 days. Since we attempt to capture the impact of a specific unique IPO on the investment bank focusing on one day returns is much less noisy than the week, 15 day or 30 day returns.

Logue (1973) studies on monthly basis the role of investment bankers in the issuance of securities and examines the factors influencing their pricing decisions and documents that the primary driver in the decision making process is the prestige and reputation of the underwriter. Tinic (1988),

Carter and Manaster (1990) and Carter, Dark and Singh (1998) also examine underwriter reputation and IPO returns. Thus, with regards to control variables in the equation, we use investment bank's market capitalization as a proxy for underwriter reputation. The idea is that the larger the investment bank the better it is at providing investment banking services. Mamatzakis and Bermpei (2014) examine investment bank performance and find that fee income is positively related to investment bank performance. Therefore, to control for fees from the IPO issue we include as control variable the market capitalization of the IPO.

3. Data

Public initial public offering filings pursuant to Rule 424(b)(4) (also known as 424B4 filings) are available on SEC EDGAR in the period 1994 through 2020. We use Center for Research in Security Prices at the University of Chicago (CRSP) to identify IPOs, where the data are available until 2019. There are about 9,300 firm IPOs in this time period. The majority of these IPOs are similar to the December 2019 GreenVision Acquisition Corp:

"GreenVision Acquisition Corp. is a newly organized blank check company incorporated in the State of Delaware as a business company pursuant to the Delaware General Business Corporation Law and formed for the purpose of engaging in a merger, share exchange, asset acquisition, stock purchase, recapitalization, reorganization or other similar business combination, which we refer to throughout this prospectus as our initial business combination, with one or more businesses or entities, which we refer to as a "target business." "

As such these filings regardless of their success or not will have little impact on the stock price behavior of the underwriters. The reason is that the majority of the IPOs are underwritten by the large public investment banks. Therefore, we focus on IPOs, which have sufficiently large capitalization size to have a potential impact on the underwriters and thus focus on IPOs with IPO day market cap of at least $3 billion. We exclude ADRs, sole book-running manager issues, blank check companies and finance, insurance, and real estate firms (i.e. firms with SIC codes 60-69). The data are winsorized at the 1% level, which leaves 105 unique IPO issue firms with more than $3 billion of IPO day market capitalizations. We select only the lead underwriters (underwriters specified as lead underwriters in the early 424B4 filings or largest font, top line underwriters in the later filings) for those issues, which provides us with 320 investment bank observation points, or 21 distinct investment banks with CRSP available prices and returns.

Table 1. Summary Statistics

This table provides summary statistics for variables - xibretv is the excess investment bank return on the day of the IPO relative to the CRSP value-weighted return, xibrets is the excess investment bank return on the day of the IPO relative to the S&P 500 Index return, xinretv is the excess first day IPO return (first day last price relative to the IPO offer price) relative to the CRSP value-weighted return, xinrets is the excess first day IPO return (first day last price relative to the IPO offer price) relative to the S&P 500 Index return, libmc is the natural log of the investment bank's IPO day market capitalization, lmc is the natural log of the IPO firms IPO day market capitalization, ibmc is the investment bank's IPO day market capitalization, mc is the IPO firms IPO day market capitalization.

Panel A. Excess Return Relative to CRSP Value-Weighted Return

Variable	N	Mean	Median	Standard Deviation	Skewness	Kurtosis	Minimum	Maximum
xibretv	320	0.0002	-0.0002	0.0138	0.3784	2.8493	-0.0469	0.0626
xinretv	320	0.3656	0.1850	0.6080	3.9714	19.7320	-0.0803	5.0923
libmc	320	17.6885	18.1084	1.6330	-1.3181	0.8646	12.0214	19.8037
lmc	320	15.5406	15.3090	0.6647	1.7415	2.6209	14.9167	17.9494
IBmc	320	99,449,490	73,173,944	92,168,381	1.39	1.61	166,276	398,701,660
mc	320	7,725,153	4,452,524	9,528,629	3.82	16.17	3,007,821	62,421,563

Panel B. Excess Return Relative to Return on the S&P 500 Index

Variable	N	Mean	Median	Standard Deviation	Skewness	Kurtosis	Minimum	Maximum
xibrets	320	0.0003	-0.0003	0.0139	0.3519	2.8024	-0.0452	0.0629
xinrets	320	0.3657	0.1854	0.6080	3.9732	19.7572	-0.0799	5.0960
libmc	320	17.6885	18.1084	1.6330	-1.3181	0.8646	12.0214	19.8037
lmc	320	15.5406	15.3090	0.6647	1.7415	2.6209	14.9167	17.9494
IBmc	320	99,449,490	73,173,944	92,168,381	1.39	1.61	166,276	398,701,660
mc	320	7,725,153	4,452,524	9,528,629	3.82	16.17	3,007,821	62,421,563

Panel C. Number of Large IPOs per Year

Year	Number of IPOs	Year	Number of IPOs	Year	Number of IPOs
1996	2	2006	8	2013	56
1997	1	2007	9	2014	38
1999	10	2008	10	2015	11
2000	15	2009	12	2016	12
2002	1	2010	16	2017	15
2004	6	2011	20	2018	31
2005	6	2012	14	2019	27

Panel D. Investment Banks

Investment Bank	N	Investment Bank	N	Investment Bank	N
KKR	2	Merrill Lynch (before BofA)	9	Barclays	20
UBS	3	BofA	23	Citigroup	27
Jefferies	4	Bear Stearns	1	Lehman Brothers	5
Wells Fargo	5	Morgan Stanley	58	BMO Bank of Montreal	2
J.P. Morgan	53	Raymond James	2	RBC	2
Deutsche Bank	14	HSBC	1	SVB	1
Nomura	1	Credit Suisse	22	Goldman Sachs & Co	66

Summary statistics are provided in Table 1. Only eight of the 105 issues experienced negative initial returns, i.e. were overpriced at IPO. To compensate for the impact of market forces and in attempt to focus on the impact of the IPO only on the underwriter return, similar to Tinic (1988), we examine excess underwriter and issuing company stock return relative to the CRSP Value-Weighted Return. Additionally, as robustness we examine the returns relative to the S&P 500 index return also. The average excess investment bank return relative to the CRSP value-weighted return on the day of the IPO is 0.0002, whereas the respective issuing company return is 0.3656, much higher than the underwriter return. In contrast, Tinic (1988) examines weekly IPO excess issuing firms' returns. The average investment bank market capitalization, at time of IPO, is $99,449,490, whereas the average issuing company market cap at IPO is $7,725,153. This is why we focus on the largest IPOs since the size of the offering needs to be sufficiently large to have an impact on the much larger underwriters.

The summary table shows that the sample of large IPOs is primarily concentrated in the after the Great Recession period with 262 IPOs. In the prior to the Great Recession period, there are 58 IPOs. This is due both to inflation and also to shift in start-up culture where start-ups and VC shifted their focus towards building 'unicorns', i.e. billion dollar valuation start-ups prior to IPO, which naturally resulted in larger companies doing IPO rather than smaller scale start-ups going for an IPO in the earlier sample period.

4. Analysis and Results

Before we proceed with the regression analysis, we examine the correlation coefficients among the variables used in this study. Correlations are provided in Table 2. The correlations seem small, which helps us rule out the possibility of multicollinearity problems in the regression analysis that follows.

Table 2. Correlation Table

This table provides correlations for variables - xibretv is the excess investment bank return on the day of the IPO relative to the CRSP value-weighted return, xibrets is the excess investment bank return on the day of the IPO relative to the S&P 500 Index return, xinretv is the excess first day IPO return (first day last price relative to the IPO offer price) relative to the CRSP value-weighted return, xinrets is the excess first day IPO return (first day last price relative to the IPO offer price) relative to the S&P 500 Index return, and libmc is the natural log of the investment bank's IPO day market capitalization.

Panel A. Excess Return Relative to CRSP Value-Weighted Return

	xinretv	libmc	lmc
xibretv	0.10	0.01	-0.07
xinretv	1	0.01	-0.07
libmc		1	0.07

Panel B. Excess Return Relative to Return on the S&P 500 Index

	xinrets	libmc	lmc
xibrets	0.10	0.01	-0.08
xinrets	1	0.01	-0.07
libmc		1	0.07

Table 3. Regression Results

This table provides regression results for model based on Equation (1) with dependent variable xibretv or xibrets, which are the excess investment bank return on the day of the IPO relative to the CRSP value-weighted return or the S&P 500 Index return, respectively. The independent variables are xinretv, which is the excess first day IPO return (first day last price relative to the IPO offer price) relative to the CRSP value-weighted return, xinrets, which is the excess first day IPO return (first day last price relative to the IPO offer price) relative to the S&P 500 Index return, and libmc, which is the natural log of the investment bank's IPO day market capitalization. Statistical significance at the 1%, 5% and 10% confidence levels are denoted by ***, ** and *, respectively.

Panel A. Excess Return Relative to CRSP Value-Weighted Return

	Coefficient	Standard Error	P-value	Coefficient	Standard Error	P-value	Coefficient	Standard Error	P-value
Intercept	-0.0006	0.000899	0.5003	-0.00275	0.00842	0.7441	0.01761	0.01951	0.3675
xinretv	0.00217*	0.00127	0.0880	0.00217*	0.00127	0.0888	0.00206	0.00127	0.1062
libmc				0.000121	0.00047	0.7981	0.000158	0.000474	0.7385
lmc							-0.00135	0.00117	0.2485
N			320			320			320
R-squared			0.0091			0.0093			0.0135

Panel B. Excess Return Relative to Return on the S&P 500 Index

	Coefficient	Standard Error	P-value	Coefficient	Standard Error	P-value	Coefficient	Standard Error	P-value
Intercept	-0.0005	0.00091	0.5534	-0.00243	0.00845	0.7742	0.02038	0.01958	0.2987
xinrets	0.00227*	0.00127	0.0757	0.00227*	0.00128	0.0763	0.00215*	0.00128	0.0936
libmc				0.000107	0.00048	0.8221	0.0001486	0.000476	0.755
lmc							-0.00151	0.00117	0.1977
N			320			320			320
R-squared			0.0099			0.0100			0.0152

Table 3 presents regression results based on models developed in equation (1). The excess issuing company first day return has statistically significant positive regression coefficient in several model specifications and using, for robustness, the S&P 500 index rather than the CRSP Value-weighted return in the computation of the excess returns. These results suggest support for rejection of the null hypothesis of negative relation between IPO firm stock return and underwriter return. This finding suggests that the larger the underpricing the higher the reward to the underwriter. We can interpret these results as supporting somewhat the litigation risk hypothesis in that investors view the larger underpricing is benefiting the underwriter. From the perspective of the underwriters' financial managers that would suggest that in order to maximize shareholder wealth, they would be highly motivated to underprice the IPO as much as possible. This is somewhat related to the motivation of the issuing company financial managers in that they want to avoid costly and reputation destroying lawsuits.

5. Conclusion

In this study, we examine the litigation risk hypothesis of IPO underpricing. The contribution of this study is in expanding of both underwriters and issuing companies' managers' knowledge in the area of litigation risk and costs in the IPO process. To the best of our knowledge, this has not been done in the literature so far and our study fills an important void in the existing literature.

We document that excess issuing company first day return has statistically significant positive impact on the underwriters' excess first day returns in several model specifications. These results suggest rejection of our null hypothesis of negative relation between IPO firm first day stock return and underwriter return. This finding suggests that the larger the underpricing the higher the reward to the underwriter. This study is of interest to both underwriters and issuing companies managers. From the perspective of the underwriters' financial managers, our study provides evidence supporting the idea that in order to maximize shareholder wealth, underwriters would be highly motivated to underprice the IPO as much as possible.

An interesting extension of this study is the study of unsuccessful IPOs, i.e. negative IPO day return issues and the performance of their underwriters. However, in the current sample there are only eight (of 105) issues experiencing negative initial returns, i.e. only eight overpriced IPOs. This additionally reinforces the conclusion of this study that underwriters are much more likely to underprice IPO issues. Once this sample of overpriced IPOs increases in the future the authors plan to extend the current study. Another interesting issue to examine in a future research when such data become available is the difference across the underwriter led IPOs, which are the focus of this study, and the directly placed IPOs. An additional concept to be examined in the future is the impact of the difference between capital needed and day one capital injected into the firm and its impact on underwriter performance. In the current study the assumption was made that the market is efficient and as such this difference is instantaneously incorporated into the stock price and its movement on day one. However, as pointed out by a referee (thank you) this might not occur and as such offers another avenue of exploration and analysis of the different IPO hypotheses.

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