

Chapter 5

RISK AND RETURN DETERMINANTS OF IPOS IN THE LONG RUN AT BORSA ISTANBUL

Orhan Emre ELMA¹

INTRODUCTION

The positive difference between final public offering price and first day closing price is called underpricing in the finance literature (Ritter, 1984). This could be caused by various external and internal factors, and there are several studies around the world to address underpricing phenomenon. The severity of underpricing is directly related to both the information adequacy on the public offering process, and the content and quality of the disclosed information. When current literature is analyzed, it was observed that underpricing increased in cases where uncertainty on knowledge and value increased (Ritter, 1984). From this basic principle, most researches focused on the argument that the initial public offering process should be used correctly in terms of disclosing high quality information to reduce the impact of underpricing (Ross, 1977; Allen & Faulhaber, 1989). Studies show that it would be correct and appropriate to support IPOs with venture capitals and more prestigious underwriters, in order to transmit the higher quality information to the investors (Booth & Smith, 1986; Lee & Wahal, 2004).

Early researches on underpricing suggest that, firms try to attract more customers by making deliberate discounts on their first offer prices, and consequently make the first day closing prices to rise (Reilly & Hatfield, 1969; Ibbotson & Jaffe, 1975). Signaling effect is used to leave a good taste in investors' mouths (Allen & Faulhaber, 1989; Welch, 1989). Information asymmetry between firms, underwriters and investors are also expressed as the main reason of underpricing (Rock, 1986). Agency theory; the different expectations of insiders, outsiders and managers in the IPO process is also studied in this regard (Chemmanur, 1993; Aggarwal et al., 2002). Underwriters have a vital position during the IPO process and fill an intermediary role between the investors and the company. In connection with that, some studies focused on how underwriters effect underpricing (Aggarwal, 2000; Lougran & Ritter, 2002; Lowry & Schwert, 2004; Corwin & Schultz, 2005).

¹ Assist. Prof., Necmettin Erbakan University, oelma@erbakan.edu.tr

While some researches concentrated on factors after issuance (Field & Hanka, 2001; Aggarwal, 2003), others draw attention to behavioral reasonings behind underpricing (Welch, 1992; Kaustia & Knupfer, 2008).

As aforementioned studies show us, the cause of underpricing cannot be described with single model. Rather, this topic should be studied with different approaches at different countries, because legal backgrounds, company traditions, investor types and behavioral expectations severely changes. This study contributes to the previous studies on underpricing in Borsa Istanbul. The aim of this study is to analyze the relationship of variables at the initial public offering process in the long term at Borsa Istanbul with the scope of risk and return, in order to take a broader picture of capital markets in Turkey, from newbie firms perspectives.

UNDERPRICING AND LONG TERM PERFORMANCE

Understanding the potential relationship between underpricing and performance in the long run is vital in resolving investor profiles and capital markets at different countries. Generally, long-term performance studies examine the period between 3 and 5 years after the issuance (Ritter, 1991). In a study, to show the reason of underperformance in the long run, it was observed that investors have positive emotions at the time of hot IPO seasons, that triggers IPO price increases at the first day. This type of hot IPO markets also hint underperformance in the long run (Aggarwal & Rivoli, 1990).

Studies conducted in most countries indicate the underperformance of initial public offerings in the long run (Espenlaub et al., 2000; Durukan, 2002; Cai et al., 2008). This long-term underperformance has several reasons, according to the literature. Firstly, optimistic investors enhance first day closing prices to higher levels than they should be. Secondly, companies and underwriters set IPO prices lower than they should, in order to attract more investors at issuance. Over time, market normalizes and corrects prices. Many studies have revealed that shares with lower IPO revenue will be more risky in the long run (Ritter, 1984; Guo et al., 2006; Carter et al., 2010). There are also studies focusing on the negative relationship between company and public offering size and underpricing (Page, 1997; Jones & Ligon, 2009).

According to some scientists, underperformance is a characteristic feature of the sector that the company listed in. Varying to the IPO setting, some researchers find internet companies outperforming alternative firms from different sectors (Johnston & Madura, 2002), while others clarified that finance sector has an advantage over the long run (Kooli & Suret, 2005). Another important factor to

consider is firm age. Miscallenous studies about underperformance demonstrated that, firm age has a positive effect on public offerings in the long term. Investors want to keep these shares in their portfolios in the long run, as they trust these stocks when compared to others (Ritter, 1991).

Public offerings of large companies are more attractive and popular than others. To this end, some researchers have conducted researchs on the long-term performance of this type of stocks. Belghitar and Dixon (2012) and Minardi et al. (2013) found that investors had better long-term performance on larger companies shares. The positive sentiment among investors makes these types of stocks more attractive, and ultimately have a positive effect on the long-term performance.

At the time of hot markets, the volume and the the frequency of public offerings rise to a degree, because of this market shifts another curiosity takes place around how the timing of issuance effects the performance and risks of the shares in the long term. In the study carried out for this purpose, it was revealed that the long-term performances of issuances decreases, if the offering took place at times when average volatility of the market has increased (Thomadakis et al., 2012).

The underwriters have a mediating role at issuance processes and they stand between the company and the potential investors. Because of this pivotal position, the possible effect of them on underpricing and long term performance maintains its importance. Underwriters also influence the quality of IPO pricing. According to studies, increase in the number and prestige of underwriters decreases underpricing in the short term, in addition enhances performance in the long run (Carter et al., 2010).

Lock-up periods are initiated by insiders to decrease the volatility of the shares by not selling their stocks for a certain period after issuance. The first partners of the company guarantee not to sell their shares for a certain period of time during the first periods of the issuance. For instance in Europe, while locking times vary between 85 days and 1650 days in the UK, it is mandatory for minimum 365 days in the Netherlands and 180 days in Germany and France. When looked at the public offerings in US, it is seen that 180 days are generally preferred by most of the companies, even though it is not mandatory to use lock-ups there (Hoque, 2011). Turkish companies mostly prefer 180 or 360 days for lock-up agreements at Borsa Istanbul. Previous literature shows that, increase in the time of lock-up agreement effects performance positively in the long run (Achmadsyah, 2016).

Investors will be able to create more appropriate portfolios if they can take a good picture of the capital markets they will invest in. Also companies want to manage the variables that will positively affect the performance of their issuances,

with the strategy best suits to their size, prestige, value and competitive positions in their sectors. In this study, the relationship between underpricing and long term performance of IPOs in Borsa Istanbul was analyzed from risk and return perspective.

METHODOLOGY

51 IPOs from food, energy, retailing, sports, health, IT, logistics, clothing, and construction sectors listed at Borsa Istanbul between 2005 and 2015 are analyzed in order to see how underpricing, risk and return have effected initial public offerings in the long term. The closing prices of IPOs are provided from Bloomberg Terminal; expected returns, alphas, betas, sharpe ratios are taken from FINNET BIST Terminal; lock-up periods, tangible assets, total liabilities and net sales are taken from companies' prospectuses at Public Disclosure Platform of Turkey. The mean IPO underpricing is at the level of 5.13% for the period. The average discount rate that applied by firms at the initial public offering process is found to be 24%. Also the average firm age at the time of issuance is 17.51. The data period is between 2005 and 2020 in order to observe long term performance of IPOs at Borsa Istanbul.

The correlations between first through fifth year share risk and the number of underwriters that a company has used during issuance are -47.50%, -50.5%, -51.7%, -50% and -56.1% respectively, which are significant at 0.01 level. Considering a company has used more underwriters while public offering, that share's risk has a tendency of dropping at the end of aforementioned years respectively, at Borsa Istanbul, as seen on Table 1. This dramatic decrease in risk can be interpreted as more underwriters during IPO process gives investors more confidence in their investments.

Also, issuance revenue and first, third, and fifth trading year risk have a -33.2%, -30.1% and -33.1% correlations respectively, which are significant at 0.05 level. Results show that, if a company's IPO revenue is bigger, that share's risk has a tendency of falling down at the end of aforementioned years respectively, at Borsa Istanbul.

The lock-up period that a company has preferred at the initial public offering process and its first through fifth year risks have correlations of -35.3%, -44.3%, -48.6%, -50.3% and -43.7% respectively, which are significant at 0.01 level. To illustrate if a company has accepted longer lock-up periods during issuance, that share's risk has a tendency of dropping at at the end of aforementioned years. This remarkable decrease in risk demonstrates that lock-up periods are effective for the

first trading years of IPOs in reducing risks of company's shares at Borsa Istanbul. Also results show that increase in the lock-up period gives investors more confidence on their long term investments.

Total liabilities of a company just before issuance and company's fifth year risk have a -35.6% relationship, which is significant at 0.01 level. Given the fact that a company has more total liabilities a year before entering to Borsa Istanbul, that company's risk has a possibility of decreasing at the end of fifth trading year.

Net sales of a company just before issuance and its second, third, fourth, fifth year risk have correlations of -33.9%, -35.6%, -33.2% and -45.5% respectively, which are significant at 0.05 level for 2nd through 4th years and 0.01 level for 5th year. If a company has done more net sales a year before issuance, that company's risk has an inclination of decreasing at the end of aforementioned years, at Borsa Istanbul.

Total assets of a company just before issuance and its first through fifth year risk have correlations of -31.2%, -30.9%, -33.1%, -32.7% and -43.1% respectively, which are significant at 0.01 level. Provided that a company has more total assets a year before entering to Borsa Istanbul, that company's risk has a possibility of decreasing at the end of 1st through 5th trading years, at Borsa Istanbul. Net sales, total liabilities and assets of bigger companies' are generally outweighs compared to smaller firms, and investors react to these balance sheet items in a positive way, when they are spreading risk and making their portfolios.

A company's fair value at issuance and its first, third, fourth and fifth year risks have correlations of -37.6%, -33.5%, -31.7% and -38.4% respectively, which are significant at 0.01 level. If a company has more value while entering Borsa Istanbul, that company's risk has a possibility of decreasing at the end of aforementioned years respectively, at Borsa Istanbul.

Table 1: The Relationship Between Initial Public Offering Variables and Risk by Year

	1 Year Risk (%)	2 Year Risk (%)	3 Year Risk (%)	4 Year Risk (%)	5 Year Risk (%)
Underwriter Number	-0.475 0.000**	-0.505 0.000**	-0.517 0.000**	-0.500 0.000**	-0.561 0.000**
IPO Revenue	-0.332 0.017*	-0.263 0.062	-0.301 0.032*	-0.261 0.065	-0.331 0.018*
Lock-Up Period (Log)	-0.353 0.011*	-0.443 0.001**	-0.486 0.000**	-0.503 0.000**	-0.437 0.001**
Total Liabilities (Log)	-0.222 0.118	-0.225 0.112	-0.229 0.105	-0.237 0.093	-0.356 0.010**
Net Sales (Log)	-0.264 0.064	-0.339 0.016*	-0.356 0.011*	-0.332 0.019*	-0.455 0.001**
Total Assets (Log)	-0.312 0.026*	-0.309 0.027*	-0.331 0.018*	-0.327 0.019*	-0.431 0.002**
Fair Value	-0.376 0.007**	-0.262 0.063	-0.335 0.016*	-0.317 0.023*	-0.384 0.005**

Underwriter number that a company has used during initial public offering process and its first, fourth, fifth year beta's have a positive 40.80%, 36.1% and 36.50% correlations respectively, which are significant at 0.01 level. Considering a company has used more underwriters while entering Borsa Istanbul, that firm's beta has a tendency of rising at the end of aforementioned years respectively, at Borsa Istanbul, according to Table 2.

Table 2: The Relationship Between Initial Public Offering Variables and Beta by Year

	1 Year Beta	2 Year Beta	3 Year Beta	4 Year Beta	5 Year Beta
Underwriter Number	0.408 0.003**	0.313 0.025*	0.270 0.055	0.361 0.009**	0.365 0.008**
Average BIST100 Volatility	-0.072 0.617	-0.181 0.203	-0.293 0.037*	-0.291 0.038*	-0.296 0.035*
Average Market Return	0.142 0.319	0.255 0.071	0.328 0.019*	0.286 0.042*	0.299 0.033*
Discount Rate	0.343 0.014*	0.207 0.145	0.184 0.197	0.124 0.388	0.156 0.275
IPO Revenue	0.237 0.094	0.209 0.142	0.199 0.162	0.294 0.036*	0.241 0.089

The volatility during 100 days before issuance of a company has taken place, and that company's third, fourth, and fifth year betas have correlations of -29.3%, -29.1% and -29.6% respectively, which are significant at 0.05 level. Results show that, if the volatility rises before issuance, then company's beta has a possibility of decreasing at the end of aforementioned years, at Borsa Istanbul.

Average BIST100 Index return during 100 days before public offering of a company, and its third, fourth, fifth year betas have positive relationships of 32.8%, 28.6% and 29.9% respectively, which are significant at 0.05 level. Provided that when average BIST100 return rises, then company's beta has a tendency of increasing at the end of aforementioned years, at Borsa Istanbul. Results show that, increasing average market volatility and decreasing average market return before issuances indicates escalating systematic risk in the long run at Borsa Istanbul.

First year beta coefficient and discount rate have a positive 34.3% relationship, which is significant at 0.05 level. If a discount ratio that a company has preferred during issuance is bigger, that share's beta has a trend of rising at the end of first trading year. This result demonstrates that, there is a positive relationship between discount rate and systematic risk for IPOs in the short term at Borsa Istanbul.

There is a positive 29.4% correlation between fourth year beta and IPO revenue, which is significant at 0.05 level. This result shows that, if a company's issuance revenue is bigger, that share's beta has a trend of rising at the end of fourth trading year at Borsa Istanbul.

According to Table 3, IPO ratio of a company and its first year average return have a positive 30.1% relationship, which is significant at 0.05 level. Considering a company's ratio of assets offered to public is bigger during public offering, its shares average return have a tendency of increasing at the end of IPO's first trading year at Borsa Istanbul.

More importantly, there is a negative 39.3% correlation between 3 year average return and underpricing, which is significant at 0.01 level. If a share is underpriced more at issuance, that share's average return has a tendency of going down at the end of IPO's third trading year at Borsa Istanbul. The shares which are underpriced have a inclination to underperform at the long run, as seen on the previous literature (Ritter, 1991; Loughran & Ritter, 1995).

Table 3: The Relationship Between Initial Public Offering Variables and Average Return by Year

	1 Year Avg. Return	2 Year Avg. Return	3 Year Avg. Return	4 Year Avg. Return	5 Year Avg. Return
IPO Ratio	0.301	0.246	0.100	0.158	0.201
	0.032*	0.082	0.484	0.268	0.157
Underpricing	-0.098	-0.248	-0.393	-0.238	-0.245
	0.493	0.080	0.004**	0.093	0.083

Underwriter number that a company has used during offering and that firm's third, fourth year alpha's have a positive 30.60% and 33.4% relationships respectively, which are significant at 0.05 level, according to Table 4. This means, if a company has used more underwriters at public offering, that share's alpha has a increasing trend at the end of aforementioned years respectively, at Borsa Istanbul.

3 year alpha and underpricing has a negative 35.6% relationship, which is significant at 0.01 level. It can be derived that, if share is underpriced more at the issuance, that shares' alpha coefficient has a tendency of falling at the end of IPO's third trading year. This result shows that, there is a negative correlation between underpricing and non-systematic risk in the long term at Borsa Istanbul.

Table 4: The Relationship Between Initial Public Offering Variables and Alpha by Year

	1 Year Alpha (%)	2 Year Alpha (%)	3 Year Alpha (%)	4 Year Alpha (%)	5 Year Alpha (%)
Underwriter Number	0.020	0.261	0.306	0.334	0.201
	0.887	0.064	0.029*	0.017*	0.157
Underpricing	-0.089	-0.214	-0.356	-0.234	-0.264
	0.534	0.132	0.010**	0.099	0.061

The number of underwriters of a firm and its third, fourth, fifth year expected return have a positive 28.0%, 36.8%, and 28.4% correlation, which are significant at 0.05, 0.01 and 0.05 respectively, according to Table 5. Provided that a company has used more underwriters, then its expected return has a increasing trend at the end of aforementioned years respectively. Results show that the increase in underwriter number of an issuance can create a signalling effect and increase expected returns in the long run at Borsa Istanbul.

Also, there is a positive 27.9% correlation between lock-up period of a company and its fourth year expected return, which is significant at 0.05 level. Given the

fact that a company has preferred a bigger lock-up period during issuance, then its expected return has a possibility of increasing at the end of fourth trading year at Borsa Istanbul. This result indicates that lock-up periods are also effective in increasing expected returns at Borsa Istanbul in the long term.

IPO ratio of a company at issuance and its first year expected return have a positive 27.8% relationship, which is significant at 0.05 level. If a company's ratio of assets offered to public is bigger during public offering, its shares expected return have an increasing trend at the end of first trading year at Borsa Istanbul. Results clarify that when the ratio of public offering increases, it creates a positive signal for first year investors of IPOs at Borsa Istanbul.

Exactly like average return, there is also a -41.6% relationship between 3 year expected return and underpricing, which is significant at 0.01 level. This can be clarified as, if a share is underpriced more at public offering day, that shares' expected return has a tendency of dropping at the end of IPO's third trading year at Borsa Istanbul. Results show that, third year after issuance remains significant for initial public offerings in Turkey.

	1 Year Exp. Return	2 Year Exp. Return	3 Year Exp. Return	4 Year Exp. Return	5 Year Exp. Return
Underwriter Number	0.055 0.702	0.262 0.063	0.280 0.047*	0.368 0.008**	0.284 0.043*
Lock-Up Period (Log)	0.214 0.132	0.187 0.189	0.195 0.169	0.279 0.047*	0.190 0.182
IPO Ratio	0.278 0.048*	0.187 0.188	0.048 0.74	0.085 0.554	0.128 0.369
Underpricing	-0.119 0.404	-0.246 0.082	-0.416 0.002**	-0.252 0.075	-0.264 0.061

The number of underwriters during the issuance of a firm and its third and fourth year sharpe ratios have a positive 30.26% and 33.9% correlations respectively, which are significant at 0.05 level, Assuming a company has used more underwriters while entering Borsa Istanbul, that share's return per risk has a trend of rising at the end of aforementioned years respectively, at Borsa Istanbul, according to Table 6.

Also, fifth year sharpe ratio and the revenue of issuance have a positive 28.2% relationship, which is significant at 0.05 level. If a company's IPO revenue is bigger, that share's return per risk has an inclination of increasing at the end of fifth trading year at Borsa Istanbul.

In addition, there is a negative 38.8% correlation between 3 year sharp ratio and underpricing, which is significant at 0.01 level. This could be explained as, if share price risen at the end of initial public offering day, that company's share return per risk has a tendency of dropping at the end of IPO's third trading year at Borsa Istanbul.

Table 6: The Relationship Between Initial Public Offering Variables and Sharpe Ratio by Year

	1 Year Sharpe Ratio	2 Year Sharpe Ratio	3 Year Sharpe Ratio	4 Year Sharpe Ratio	5 Year Sharpe Ratio
Underwriter Number	0.006	0.228	0.306	0.339	0.272
	0.969	0.108	0.029*	0.015*	0.054
IPO Revenue	0.069	0.196	0.261	0.209	0.282
	0.631	0.167	0.064	0.142	0.045*
Underpricing	-0.115	-0.207	-0.388	-0.209	-0.215
	0.420	0.146	0.005**	0.142	0.130

Significant relationships between variables were observed by applying correlation analysis in the study. According to the results of the analysis, increase in underpricing negatively effects three year expected return of IPOs by 41% at Borsa Istanbul. More IPO return effects the return per risk of the fifth year after issuance positively by 28%, and the risk negatively by -33% as the confidence in the share increases. Involvement of more underwriters in the process of the issuance effects risk negatively up to -56%, and expected return positively up to 36.8% in the long run. Longer lock-up periods effects risk negatively up to -50.6%, and expected return positively up to 27.9% in the long run. Increase in the IPO ratio improves average return and expected return, with the correlations of 30.1% and 27.8% respectively, at the end of first issuance year. In addition, increase in net sales, total assets and liabilities of firms have a negative relationship with risk in the long term.

The prestigious companies with higher pre-issuance net sales, total assets and fair values have become the indispensable choice of investors in Borsa Istanbul. Since many speculators prefer to hold these shares in the long term, the risk of

these large company shares has decreased compared to other companies' stocks in the five years after the public offering. On the other hand; increase in the underwriter number, IPO rate, issuance revenue, and lock-up period time positively effected share returns in the long run, by ensuring investors confidence on the stock.

CONCLUSION, DISCUSSION AND RECOMMENDATIONS

Initial public offerings are used by companies as a way to enter the capital markets for reasons such as increasing their prestige and their credibility, becoming a leader in their sector, and increasing their exports. In this milestone, underpricing phenomenon happens by higher first day closing price compared to issuance price. However, companies which have stepped into the capital markets positively, often experience underperformance in the long run. In this study, 51 initial public offerings from food, energy, retailing, sports, health, information technology, logistics, clothing, and construction sectors listed at Borsa Istanbul between 2005 and 2015 are analyzed.

Underperformance is especially evident at third year after issuance at Borsa Istanbul. The underpricing of IPOs has negative relationships with sharpe ratios, average and expected returns. More initial return at issuance is connected with longer term underperformance of IPOs at Borsa Istanbul. These results are in line with the literature (Espenlaub et al., 2000; Durukan, 2002; Cai et al., 2008). Increase in underpricing have a -41% correlation with three year expected return of IPOs at Borsa Istanbul.

The initial public offering revenues of large companies, which have goals such as becoming a leader in their sector or opening abroad, are often high. In Borsa Istanbul, the IPO return has a positive relationship with the sharpe ratio. More IPO return positively effects the return per risk of the fifth year after issuance by 28%. In addition, the increase in IPO returns decreases the risk in the long run. More revenue gives a positive signal to the investors and the risk negatively effected by 33%, as the confidence in the share increases. These results are compatible with previous studies (Ritter, 1984; Guo et al., 2006; Carter et al., 2010).

A company's luxury of having more underwriters in the public offering process enhances confidence of investors and consequently increases return per risk in the long term. In addition, more underwriters during issuance instil confidence to investors on their choice of shares both at short and long term. Thus, it is vital for companies to seek more underwriters during initial public offerings at Borsa Istanbul. Also, investors expect more returns from IPOs with more underwriters

in the long run. More underwriters negatively effects risk up to -56%, and positively effects expected return up to 36.8% in the long run. This is in line with the previous researches (Carter et al., 2010).

At Borsa Istanbul, longer lock-up periods effect risk negatively by -50.6%, and expected return positively by 27.9% in the long run. Results show that, lock-up periods are used effectively by companies to decrease risks and enhance expected returns in the long term at Borsa Istanbul, just in line with the previous work (Achmadsyah, 2016).

IPO ratios demonstrates the degree to which assets of companies are planned to open to public. When this ratio prospers, average and expected returns for the shares increases in the short run at Borsa Istanbul. This is in line with the previous researches (Page, 1997; Jones and Ligon, 2009). Results show that, increase in the IPO ratio positively effects average return by 30.1% and expected return by 27.8%, at the end of first issuance year.

Total liabilities, net sales and total assets have effected risk negatively in the long run at Borsa Istanbul. Older, prestigious, more credible and valuable companies' risk tend to decrease in the long run. Investors opt for this type of shares, when they are making their portfolios. This results are in line with the previous findings (Levis, 1993; Khurshed, 1999).

For further research, a bigger selection of IPOs could be chosen in order to see the bigger picture in Borsa Istanbul. IPOs in finance sector is not included in this study. Studies incorporating companies from all sectors can give a better understanding of capital markets. The variables from this study could be used in following studies to explain long term underperformance at Borsa Istanbul. Cross-country analysis could also be done in order to compare each capital market's different characteristics in terms of risk, return behaviour and underperformance in the long run.

REFERENCES

- Achmadsyah, VA. (2016). *IPO Lockup Length and its Implication for Post-IPO Performance*, MSc Thesis: University of Rotterdam.
- Aggarwal, R. & Rivoli P. (1990). Fads in the Initial Public Offering Market?, *Financial Management*, 19, 45-57.
- Aggarwal, R. (2000). Stabilization Activities by Underwriters after Initial Public Offerings, *Journal of Finance*, 55, 1075-1103.
- Aggarwal, R., Krigman, L., & Womack. K. (2002). Strategic IPO Underpricing, Information Momentum, and Lockup Expiration Selling, *Journal of Financial Economics*, 66, 105-137.
- Aggarwal, R. (2003). Allocation of Initial Public Offerings and Flipping Activity, *Journal of Financial Economics*, 68, 111-135.
- Allen, F., & Faulhaber G. (1989). Signalling by Underpricing in the IPO Market, *Journal of Financial*

Economics, 23 (2), 303-323.

- Belghitar, Y., & Dixon, R. (2012). Do Venture Capitalists Reduce Underpricing and Under Performance of IPOs?, *Applied Financial Economics*, 22(1), 33–44.
- Booth, J., & Smith R. (1986). Capital Raising, Underwriting and the Certification Hypothesis, *Journal of Financial Economics*, 15(1), 261-281.
- Cai, X., Liu, GS., & Mase, B. (2008). The Long-Run Performance of Initial Public Offerings and its Determinants: The Case of China. *Review of Quantitative Finance and Accounting*, 30, 419-432.
- Carter, RB., Dark, FH., & Sapp, TRA. (2010). Underwriter Reputation and IPO Issuer Alignment 1981-2005. *The Quarterly Review of Economics and Finance*, 50, 443-455.
- Chemmanur, T.J. (1993). The Pricing of Initial Public Offers: A Dynamic Model with Information Production, *Journal of Finance*, 48, 285-304.
- Corwin, S. A., & Schultz, P. (2005). The Role of IPO Underwriting Syndicates: Pricing, Information Production and Underwriter Competition, *The Journal of Finance*, 60, 443-486.
- Durukan, BM. (2002). The Relationship Between IPO Returns and Factors Influencing IPO Performance: Case of Istanbul Stock Exchange. *Managerial Finance*, 28(2), 18-38.
- Espenlaub, S., Gregori, AG., & Tonks, I. (2000). Re-Assesing the Long Term Underperformance of UK Initial Public Offerings. *European Financial Management*, 6(3), 319-342.
- Field, L.C., & Hanka, G. (2001). The Expiration of IPO Share Lockups, *Journal of Finance*, 56, 471-500.
- Guo, R., Lev, B., & Shi, C. (2006). Explaining the Short- and Long-Term IPO Anomalies in the US by R&D. *Journal of Business Finance and Accounting*, 33(3-4), 550-579.
- Ibbotson, R.G., & Jaffe, J. (1975). 'Hot Issue' Markets, *Journal of Finance*, 30, 1027-1042.
- Johnston, J., & Madura, J. (2002). The Performance of Internet Firms Following Their Initial Public Offering, *The Financial Review*, 37(4), 525–550.
- Jones, TL., & Ligon, JA. (2009). The Day of the Week Effect in IPO Initial Returns. *The Quarterly Review of Economics and Finance*, 49, 110-127.
- Kaustia, M., & Knupfer, S. (2008). Do Investors Overweight Personal Experience? Evidence from IPO Subscriptions, *Journal of Finance*, 63, 2679-2702.
- Kooli, M., & Suret, J. (2004). The Aftermarket Performance of Initial Public Offerings in Canada, *Journal of Multinational Financial Management*, 14(1), 47–66.
- Khurshed, A. (1999). *Initial Public Offerings: An Analysis of the Post-IPO Performance of the UK Firms*, Ph.D. Thesis: University of Reading.
- Lee, P., & Wahal S. (2004). Grandstanding, Certification and The Underpricing of Venture Capital Backed IPOs, *Journal of Financial Economics*, 73(2), 375-407.
- Levis, M. (1993). The Long-Run Performance of Initial Public Offerings: The UK Experience 1980-1988, *Financial Management*, 22, 28-41.
- Loughran, T., & Ritter JR. (1995). The New Issues Puzzle, *Journal of Finance*, 50, 23-51.
- Loughran, T., & Ritter, JR. (2002). Why Don't Issuers Get Upset about Leaving Money on the Table in IPOs?, *Review of Financial Studies*, 15, 413-443.
- Lowry, M., & Schwert, G.W. (2004). Is the IPO Pricing Process Efficient?, *Journal of Financial Economics*, 71, 3–26.
- Minardi, A.M., Ferrari, GL., & Tavares, P.C. (2013). Performances of Brazilian IPOs Backed by Private Equity, *Journal of Business Research*, 66(3), 448–455.
- Page, MJ. (1997). The Timing and Subsequent Performance of IPOs on the Johannesburg Stock Exchange. *Journal of Business Finance and Accounting*, 24(9-10), 1401-1420.
- Reilly, F.K., & Hatfield, K. (1969). Investor Experience with New Stock, *Financial Analysts Journal*, 25, 73-80.
- Ritter, J. (1984). The 'Hot Issue' Market of 1980, *The Journal of Business*, 57(2), 215–240.
- Ritter J. (1991). The Long-Run Performance of Initial Public Offerings, *Journal of Finance*, 46, 3-27.
- Rock, K. (1986). Why New Issues are Underpriced, *Journal of Financial Economics*, 15, 187-212.
- Ross, S. (1977). The Determination of Financial Structure: The Incentive-Signalling Approach, *The Bell Journal of Economics*, 8(1), 23–40.

Current Financial Studies

- Thomadakis, S., Nounis, C., & Gounopoulos, D. (2012). Longterm Performance of Greek IPOs, *European Financial Management*, 18(1), 117–141.
- Welch, I. (1989). Seasoned Offerings, Imitation Costs and the Underpricing of Initial Public Offerings, *Journal of Finance*, 44, 421-450.
- Welch, I. (1992). Sequential Sales, Learning and Cascades, *Journal of Finance*, 47, 695-732.