PARADOKS EKONOMİ, SOSYOLOJİ VE POLİTİKA DERGİSİ

PARADOKS Economics, Sociology and Policy Journal

ISSN: 1305-7979

2020, Cilt/Vol: 16, Sayı/Issue :1, Page: 1-14

PARADOKS
Ekonomi, Sosyoloji ve Politika Dergisi

PARADOKS
Ekonomi, Sosyoloji ve Politika Dergisi

TARANDIĞIMIZ INDEXLER

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HİSSE GETİRİLERİ PERSPEKTİFİNDEN DÜŞÜK FİYATLAMAYA BAKIŞ: BORSA ISTANBUL'DAKİ İLK HALKA ARZLAR ÜZERİNE BİR UYGULAMA

UNDERPRICING PUZZLE AT THE SCOPE OF SHARE RETURN: A CLOSER LOOK AT INITIAL PUBLIC OFFERINGS AT BORSA ISTANBUL

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ÖZET

Düşük fiyatlama, sermaye piyasaları literatüründe en çok araştırılan ve ilgi çeken konulardan birisidir. Şüphesiz, şirketlerin sermaye piyasaları deneyimlerine yeni yatırımcılar vasıtasıyla sağlam bir temelde başlamaları hayati derecede önemlidir. Şirketlerin borsada ilk gün elde ettikleri getiriyi, ilerleyen yıllarda hangi şartlar altında koruyabileceği sorunsalı, araştırmacıların ve yatırımcıların uzun yıllardır merakını cezbetmektedir. Bu çalışmada Borsa İstanbul'da 2005 ile 2015 yılları arasında listelenen 65 ilk halka arz, düşük fiyatlama ve 5 yıla kadarki uzun dönem hisse senedi getirisi performansı açısından analiz edilmiştir. Sonuçlar, düşük fiyatlama ile üç yıllık kümülatif hisse senedi getirisi arasında %29,5 oranında negatif korelasyon olduğunu göstermektedir. Ayrıca, firmaların halka arz oranındaki artışın, hisse senedi getirilerini ihracın özellikle ilk yılında olumlu yönde etkilediği bulunmuştur. Gelişmiş piyasalardaki literatürün aksine, şirket yaşındaki artışın şirketlerde düşük fiyatlamayı artırdığı görülmektedir. Bunlara ek olarak, ihraçtan sonraki üç yıllık dönemde düşük performans gözlemlendiği halde, hisse getirilerinin özellikle dördüncü yılda artış trendine girdiği tespit edilmiştir.

Anahtar Kelimeler: Sermaye Piyasaları, Düşük Fiyatlama, Hisse Getirisi, Düşük Performans.

ABSTRACT

Underpricing is one of the most researched topics in the capital markets literature. It is undoubtedly important for companies to start their capital markets experience on a more solid basis, as well as for their new investors. It is a question researchers and investors have been trying to answer; whether the company can maintain this positive return on the first day in the upcoming years. In this study, 65 initial public offerings listed at Borsa Istanbul were analyzed in terms of underpricing and long-term share returns. Results show that there is a 29.5% negative correlation between underpricing and three-year cumulative return on shares. The increase in public offering rate effects the return on share positively in the first year of issuance. Contrary to the literature, it has been observed that the increase in the company age increases the underpricing in the analysis period. Interestingly, while underperformance was observed in the three-year period after the issuance, it was discovered that the share returns tended to increase especially at fourth year after offering.

Keywords: Capital Markets, Underpricing, Share Return, Underperformance.

INTRODUCTION

Underpricing is defined as the difference between the public offering price and the first day closing price, in the literature. This phenomenon exists in almost all capital markets worldwide. According to a study, underpricing is found 16.90% for USA, 16% for UK, 3.30% for Russia, and 118.40% for China (Ritter, 2003). The occurance of this situation at the entrance to the capital markets, which contains very important opportunities for companies, has attracted the attention of many academics and researchers. Underpricing is accepted as a fact of capital markets, but potential reasons that may constitute this have been investigated in the studies conducted.

Rock (1986) clarified underpricing by information asymmetry, and made a research based on the fact that investors do not have equal levels of information. Results show that investors with incomplete information are unable to correctly assess initial public offerings, and therefore are more likely prone to invest in poor quality IPOs. In line with this situation, Aggarwal (2002) found that individual investors yielded lesser returns than institutional investors. From a theoretical point of view, it is difficult to say that the first day returns of IPOs are solely from conscious investors. Rock's (1986) model states that there are too many unconscious investors who cannot determine which IPO is priced at a low price, while Ritter's (1991) results say that there is no need to have very important information because all variables in the model are already public and transparent at issuance. The rejection of Rock's (1986) theory supports Field and Lowry's (2010) thesis that individuals ignore or misread public information until IPO is released. As a result, it can be said that unconscious individuals are dealing with inefficient IPOs.

Allen and Faulhaber (1989) explained the underpricing with signal theory. Accordingly, companies intentionally discount their companies at issuance in order to appeal to the investment taste of more individuals. As a result, more investors demand for the shares that seem cheaper than they should be. There are also other firm, issue and country specific factors behind underpricing, which are; firm age, public offering type, sector of the company, legal and cultural characteristics of the country.

In developing countries, it can be expected that the relationship between underpricing and share returns in the long run can be different due to the differences in market efficiency. Studies carried out in Greece and Malaysia show that, shares have underpriced in the short term but returns are increased in the long term, contrary to the literature about efficient markets. When viewed from this angle, underpricing and its relation to share returns in the long run at Turkey as a developing country is especially important.

This study contributes to the existing literature on underpricing in capital markets, but it extends them by analyzing the relationship with share return in the long run. Third year after issuance is found

to be the most significant year in Borsa Istanbul for newly issued firms. Underperformance is evident until third year, but share returns tend to increase especially at fourth year after issuance. In addition, contrary to efficient markets, underpricing and firm age has a positive relationship in Turkey.

1. UNDERPRICING AND SHARE RETURN OF IPOS IN THE LONG RUN

The first performance study on the initial public offerings was carried out by Stoll and Curley (1970). In the research, they analyzed the initial public offering of 205 small companies, and stated that there was a price increase that led to underpricing in the short term, however in the long term investors did not want to keep these shares, so this causes a serious drop in the share price at long run.

In the literature, long-term underperformance is explained by three theories (Switzer & Bourdon, 2011). The first theory is investor enthusiasm, which is focusing on the relationship between underpricing and underperformance. Investors are very optimistic about the newly listed shares in capital markets. Successive purchases just after issuance raise the price of the stock much higher than it should be in the short term. Over time, this optimism in the market leaves its place to realism, and consequently the price of the share underperforms in the long run (Zaier & Abdelmoula, 2014). The second theory is the pseudo market timing. According to this, the fact that underpricing is high in hot markets where many public offerings take place also projects underperformance for these stocks in the long term (Schultz, 2003). The last theory is earnings management. Companies display their earnings more acceptable with unorthodox methods in order to attract more investors before issuance. While investors expect the high earnings before public offering to increase after issuance, even pre-offering earnings cannot be maintained in some companies (Jain & Kini, 1994).

Ibbotson and Jaffe (1975) explained the hot IPO markets, and concluded that IPO's realized at this season has more average first day returns. Ritter (1984) supported this thesis by saying that the hot stock market situation continued, and Loughran and Ritter (2002) and Lowry and Schwert (2002) said that the first day returns were positively autocorrelated. In addition, hot IPO markets evoke high returns in the short term and underperformance in the long term due to their characteristic features.

In his study, Ritter (1991) analyzed 1,526 initial public offerings in the US capital markets between 1975 and 1984, and found that the returns of these companies were 29.1% lower than their counterparts after 3 years of issuance. Along with these researches, studies examining the long-term performances of the issuances have been carried out in other countries (Aggarwal et al., 1993; Lee et al., 1996). In a study conducted at Chinese capital markets shows that initial public offerings that took place between 1993 and 2001 has underperformed in the long run by 17% (Fan et al., 2007). Also another study in China revealed that there was a 58% decrease in IPO returns at a three-year period (Chen et al., 2015).

According to previous literature, factors affecting the short-term and long-term performance of initial public offerings can be summarized as; public offering ratio, total assets, total revenue, age of the firm, first day returns, market returns, standard deviation of returns, public offering method, price / earnings ratio, market value / book value ratio, debt ratio, and net sales (Carter & Manaster, 1990; Ritter, 1991; Levis, 1993; Özer, 1999; Kıymaz, 2000; Durukan, 2002).

The magnitude of public offering rate and issuing company encourages better stock performance in the long run by attracting more investors (Ghosh, 2005; Minardi et al., 2013). Nevertheless, large public offerings provide high demand in the first place with positive investor sentiment but performance declines in the long run in some countries (Cai et al., 2008; Thomadakis et al., 2012). From this point of view, there is no consensus in studies on initial public offering size and long-term performance.

In a study on the long-term performance of the initial public offerings, it was found that the increased risk of the issuance company would exacerbate the underpricing and decrease the long-term performance (Loughran et al., 1994). The factors that pose this risk are based on the company's age,

size, and issuance returns. In another study, it was stated that the risk of the company will enhance with the decrease in the public offering, and as a consequence underpricing will increase as a result (Ritter, 1984). In addition, the increase in the number and prestige of the underwriters, who took a very critical mediating position during the initial public offering, have been creating a positive signal effect among investors according to studies (Carter & Manaster, 1990; Kenourgios et al., 2007). Existing investors' desire to keep these shares, while new investors prefer to add these stocks to their portfolios increases the performance of these IPOs in the long run.

2. METHODOLOGY

65 IPOs from energy, manufacturing, retailing, information and sports sectors listed at Borsa Istanbul between 2005 and 2015 are analyzed in order to demonstrate the return efficiency of the IPOs in the long run. Underpricing level is found to be 4% at the mentioned period. Firms has executed an average of 23.6% discount on their shares before going public. The average firm age is found to be 17.05. Share price data are taken between 2005 and 2019 in order to analyze long term behaviour of underpricing syndrome.

According to Table 1, there is a significant negative correlation between three year cumulative share return and underpricing. At Borsa Istanbul, if share price has risen at the end of initial public offering day, that firm's stock has a 29.5% degree of going down as a means of share return at the end of IPO's 3rd year for the investors who are holding their shares since issuance.

Table 1. 3-Year cumulative share return and underpricing correlations

		3-Year Return	Underpricing
3-Year Share Return	Pearson Correlation	1	-.295*
	Sig. (2-tailed)		.017
	N	65	65
Underpricing	Pearson Correlation	-.295*	1
	Sig. (2-tailed)	.017	
	N	65	65

First year share return and the ratio of the firm which is offered to public have a 28.3% correlation, with the significance of 0.05, according to Table 2. If the ratio that is offered to the public is more, that shares' return at the end of first IPO year tend to rise. Investors take the IPO rate as a sign of confidence, and they keep these type of stocks in their portfolios.

Table 2. 1-Year share return and IPO ratio correlations

		1-Year Share Return	IPO Ratio
1-Year Share Return	Pearson Correlation	1	.283*
	Sig. (2-tailed)		.022
	N	65	65
IPO Ratio	Pearson Correlation	.283*	1
	Sig. (2-tailed)	.022	
	N	65	65

The discount rate that is applied by issuers and the number of underwriters which are involved in the public offering process have a 38.9% correlation, which is significant at 0.01, according to Table 3. If a company has taken advantage of more underwriters, that firm's calculated share price would most likely discounted more while entering into Borsa Istanbul. Investor attraction is bigger at IPOs with more underwriters, so companies can take the advantage of discounting their stocks, in the expectation that investors buy and keep their shares in the long run.

Table 3. Discount rate and the number of IPO underwriters correlations

		Discount Rate	Underwriter Number
Discount Rate	Pearson Correlation	1	.389**
	Sig. (2-tailed)		.001
	N	65	65
Underwriter Number	Pearson Correlation	.389**	1
	Sig. (2-tailed)	.001	
	N	65	65

According to Table 4, firm age and underpricing have a positive 25.9% correlation, with the significance of 0.05. If a company has long and reputational history before attempting an initial public offering at Borsa Istanbul, that company's share would most likely go up at the end of its first trading day. Firm reputation has a big effect on investor's buying and selling decisions.

Table 4. Firm age and underpricing correlations

		Firm Age	Underpricing
Firm Age	Pearson Correlation	1	.259*
	Sig. (2-tailed)		.037
	N	65	65
Underpricing	Pearson Correlation	.259*	1
	Sig. (2-tailed)	.037	
	N	65	65

Underpricing and share return between third and fourth years have a positive 30.6% correlation, which is significant at 0.05 level, according to Table 5. Results show that, if a company's share has risen at the end of its first trading day at Borsa Istanbul, that company's share return would most likely go up between IPO's third and fourth trading years. In time, underperformance is becoming weak and investors are buying more shares after third year at Borsa Istanbul.

Table 5. Underpring and share return between 3rd and 4th trading years correlations

		Underpricing	Share Return between 3rd and 4th trading years
Underpricing	Pearson C.	1	.306*
	Sig. (2-tailed)		.013
	N	65	65
Share Return between 3rd and 4th trading years	Pearson C.	.306*	1
	Sig. (2-tailed)	.013	
	N	65	65

Share return between second and third trading years and net sales have a -36.9% relationship, with the significance of 0.01, according to Table 6. Results show that especially bigger companies, which have generated more net sales just a year before issuance, are tested by investors during the third year after public offering.

In addition, there is a -30.4% correlation between BIST100 average return in 100 days before issuance and share returns of the company at second and third trading years, which is significant at 0.05 level. If BIST100 average return in 100 days before public offering has risen, that create a negative effect on company's share return during its third trading year at Borsa Istanbul. This finding is in line with the previous literature about hot IPO markets creating underperformance in the long term.

Regarding leverage ratio and share return during third year, results show that there is a -32.6% correlation between these variables, with the significance of 0.01. In other words, if a company's leverage ratio is higher, that creates a negative effect on company's share return between that IPO's second and third trading years.

Net sales of the company just a year before issuance and average market return in 100 days before public offering have a 28.7% correlation, which is significant at 0.05 level. In short, if average market return in 100 days before issuance has risen, this creates a positive effect on net sales of the company.

Also, there is a positive 27.7% correlation between a company's leverage ratio, and that company's net sales, which is significant at 0.05 level. To put it another way, if a company's net sales is higher, that creates an enhancing effect on the leverage ratio of the firm. Companies with more net sales, are also the firms with more debt, at Borsa Istanbul.

In short third year after issuance is not an easy year for bigger firms. Senior companies are tested by investors during their lock-up periods. But interestingly, they give better share returns at fourth year, with an increasing trading volumes from investors.

Table 6. Share return between 2nd and 3rd years, net sales, average market return and leverage ratio correlations

		Share Return between 2nd and 3rd trading years	Net Sales Log.	Average Market Return	Leverage Ratio
Share Return between 2nd and 3rd trading years	Pearson Correlation	1	-.369**	-.304*	-.326**
	Sig. (2-tailed)		.002	.014	.008
	N	65	65	65	65
Net Sales Log.	Pearson Correlation	-.369**	1	.287*	.277*
	Sig. (2-tailed)	.002		.021	.026
	N	65	65	65	65
Average Market Return	Pearson Correlation	-.304*	.287*	1	.121
	Sig. (2-tailed)	.014	.021		.335
	N	65	65	65	65
Leverage Ratio	Pearson Correlation	-.326**	.277*	.121	1
	Sig. (2-tailed)	.008	.026	.335	
	N	65	65	65	65

According to Table 7, the discount rate that is applied by firms at issuance and share return during fourth year have a positive 32.1% correlation, which is significant at 0.01 level. Companies offered with more discounted prices, have more positive returns during their fourth trading years at Borsa Istanbul.

Table 7. Discount rate and share return between 3rd and 4th trading years correlations

		Discount Rate	Share Return between 3rd and 4th trading years
Discount Rate	Pearson Correlation	1	.321**
	Sig. (2-tailed)		.009
	N	65	65
Share Return between 3rd and 4th trading years	Pearson Correlation	.321**	1
	Sig. (2-tailed)	.009	
	N	65	65

The number of underwriters involved during the issuance process of a firm and its IPO revenue have a positive 61.2% correlation, with the significance of 0.01, according to Table 8. In other words, prestigious companies with more revenue generating public offerings use more underwriters during their issuance processes.

Also, there is a positive 55.1% correlation between a firm's IPO revenue, and its total liabilities just a year before public offering, which is significant at 0.01 level. Bigger companies have more liabilities that they can handle effectively, and also they create more revenue during the issuance. Companies go to public in order to attract more money into their ongoing investments and to pay back their debts. This finding is in line with the notion of initial public offering's empowering effect on companies strategic goals suc as trying to get bigger and international.

In addition, the number of underwriters that a firm has used during offering and its total liabilities just a year before issuance have a a positive 63.5% correlation, which is significant at 0.01 level. Companies with more debts desire to make public offerings as effective as possible, so they use more underwriters during their issuance processes to attract more investors.

The lock-up period, that a company has used in order to create a stability around its share price by prohibiting insiders to sell their shares, and the number of underwriters that firm has used during issuance have a positive 37.0% correlation, with the significance of 0.01. Bigger public offerings with more underwriters use longer lock-up periods in order to create a trustworthy relationship with their investors during medium term after issuance.

Furthermore, there is a -34.1% correlation between a company's IPO ratio and its total liabilities just a year before public offering, which is significant at 0.01 level. In other words, if a company has more liabilities before issuance, that company choses to offer less of its assets in order to have a balanced introduction into Borsa Istanbul.

The lock-up period of the company and its total liabilities just a year before issuance have a positive 33.2% relationship, with the significance of 0.01. Firms with more debts try to attract more investors by increasing their lock-up periods.

Additionally, there is a positive 52.7% correlation between a company's total leverage ratio, and its total liabilities just a year before public offering, which is significant at 0.01 level. If a company has more liabilities a year before issuance, this creates a positive effect on its total leverage ratio.

Table 8. IPO revenue, number of underwriters, total liabilities, initial public offering ratio, lock-up period and total leverage ratio correlations

		IPO Revenue	Number of Underwriters	Log. of Total Liab.	IPO Ratio	Log. of Lock-Up	Total Leverage R.
IPO Revenue	Pearson C.	1	.612**	.551**	-.073	.232	.055
	Sig. (2-t.)		.000	.000	.563	.062	.664
	N	65	65	65	65	65	65
Number of Underwriters	Pearson C.	.612**	1	.635**	-.072	.370**	.052
	Sig. (2-t.)	.000		.000	.571	.002	.679
	N	65	65	65	65	65	65
Log. of Total Liabilities	Pearson C.	.551**	.635**	1	-.341**	.332**	.527**
	Sig. (2-t.)	.000	.000		.005	.007	.000
	N	65	65	65	65	65	65

The average market return and volatility during 100 days before public offering have a -52.3% correlation, with the significance of 0.01, according to Table 9. Results show that, if average BIST100 index return rises, then this hot market turns into a more stabile shape which decreases volatility.

Table 9. Average BIST 100 return and average BIST100 volatility correlations

		Average BIST100 Return	Average BIST100 Volatility
Average BIST100 Return	Pearson Correlation	1	-.523**
	Sig. (2-tailed)		.000
	N	65	65
Average BIST100 Volatility	Pearson Correlation	-.523**	1
	Sig. (2-tailed)	.000	
	N	65	65

One issue that may arise from using correlated variables is multiple collinearity. Lewis-Beck (1980) stated that the cases where correlation coefficients between the explanatory variables were above 80%, indicate multiple collinearity. In this study, it was seen that all correlation coefficients were less than 80% with two-variable correlations between independent variables.

The contribution of this study to literature is that it shows the importance of investment timing for investors trading in Borsa Istanbul, with analyzing a period of five years after issuance, in terms of share return at Borsa Istanbul. Investors wait for the company to achieve a successful start at Borsa Istanbul, and they also want to examine the price trend of the shares especially after lock-up period

expires. These reasons, make fourth year more profitable for investors, in terms of share returns, who are pursuing bigger companies.

3. DISCUSSION AND CONCLUSION

Underpricing and three-year cumulative return have a negative relationship in Borsa Istanbul. IPO underpricing is a stubborn fact in Turkey capital markets at around 4% and the third year after issuance seems to be very critical. Accordingly, increase in companys' net sales, average market return and leverage ratio of the firm just a year before issuance creates a negative effect on stock returns of the third year after issuance. The results are compatible with previous literature (Ritter, 1991; Aggarwal et al., 1993; Lee et al., 1996; Fan et al., 2007; Chen et al., 2015). However, increase in underpricing, creates a positive effect on share earnings of fourth year after issuance. Investors expect the company to prove itself during three years after the offering and increase the share returns by making more purchases in the fourth year. Similarly, there is a positive relationship between the discount rate applied by companies and the share returns of the fourth year.

Increase in the size of companies and the assets they offered to public, creates an increase in share returns at first year. Investors in Borsa Istanbul are interested in the shares of bigger companies at their first years of issuance. This result is in line with previous studies (Ghosh, 2005; Minardi et al., 2013). Also, volatility of the index decreases in hot IPO markets in Turkey.

Appropriate pricing is very strategic in the initial public offering processes. If the share price is set too high, although it is desired by the preexisting partners of the company, they will not be able to bring the desired cash flows since they can not attract many investors. On the other hand, if preferred share price is too low, the generated IPO revenue will not make the public offering financially rational. For that purpose, companies apply a suitable discount to the offering price to keep their balance sheets more profitable and still continue potential investors interested. At this study, it was found that public offerings with more underwriters also discounted their offering prices more at Borsa Istanbul. In addition to the advantage of reaching many investors with more underwriters, companies also used the attraction of the cheaper price, in order to have a successful start at capital markets. Contrary to previous studies, it was found that underpricing tends to increase as the age of the firm increases. Investors' preference of older and prestigious firms in the long term at BIST plays a key role for this factor.

IPOs with more underwriters in the process have higher initial public offering returns. Also companies with higher debts generate more issuance revenues. Accordingly, firms with more liabilities used the issuance process more proactively by having more underwriters to appeal various investors. Another result of the study is that preexisting partners of companies with higher debt preferred bigger lock-up periods in order to give confidence to investors. Besides, the strategy of offering less assets to public by companies with heavy debt is used in order to secure their issuances. These findings are in line with previous works (Carter et al., 2010; Achmadsyah, 2016).

When the first public offerings in Borsa Istanbul are analyzed, it is seen that the underpriced stocks have a low three-year performance, but they started to recover from the fourth year. In future studies, an analysis can be made that will cover all sectors in a longer period at various countries. An international study on initial public offerings to identify which years are more productive in terms of share returns can be made in order to give investors a bigger picture about underpricing mechanisms of different capital markets.

REFERENCES

Achmadsyah, V.A. (2016). *IPO Lockup Length and its Implication for Post-IPO Performance*, MSc Thesis: University of Rotterdam.

Aggarwal, R., Leal, R., & Hernandez, L. (1993). The Aftermarket Performance of Initial Public Offerings in Latin America, *Financial Management, 22*, 42-53.

Aggarwal, R., Prabhala, N., & Puri M. (2002). Institutional Allocation in Initial Public Offerings: Empirical Evidence, *Journal of Finance*, *57*(3), 1421-1442.

Allen, F., & Faulhaber G. (1989). Signalling by Underpricing in the IPO Market, *Journal of Financial Economics*, *23*(2), 303-323.

Cai, X., Liu, G., & 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*(4), 419–432.

Carter, R. & Manaster, S. (1990). Initial Public Offerings and Underwriter Reputation, *The Journal Of Finance, 45*(4), 1045-1067.

Carter, R., Dark, F.H., & Sapp, T.R.A. (2010). Underwriter Reputation and IPO Issuer Alignment 1981-2005. *The Quarterly Review of Economics and Finance*, *50*, 443-455.

Chen, Y., Wang, S.S., Li, W., Sun, Q., & Tong W.H.S. (2015). Institutional Environment, Firm Ownership, and IPO First-Day Returns: Evidence from China, *Journal of Corporate Finance, 32*, 150-168.

Durukan, M.B. (2002). The Relationship between IPO Returns and Factors Influencing IPO Performance: Case of the Istanbul Stock Exchange, *Managerial Finance, 28*, 18-38.

Fan, J.P.H., Wong, T.J., & Zhang, T. (2007). Politically Connected CEOs, Corporate Governance, and Post-IPO Performance of China's Newly Partially Privatized Firms, *Journal of Financial Economics*, *84*(2), 330-357.

Field, C.L., & Lowry, M. (2010). Institutional versus Individual Investment in IPOs: The Importance of Firm Fundamentals, *Journal of Financial and Quantitative Analysis, 44*(3), 489-516.

Ghosh, S. (2005). Underpricing of Initial Public Offerings: The Indian Experience, *Emerging Markets Finance and Trade*, *41*(6), 45–57.

Ibbotson, R.G., & Jaffe, J.F. (1975). Hot Issue Markets, *Journal of Finance, 30*, 1027-1042.

Jain, B.A., & Kini, O. (1994). The Post-Issue Operating Performance of IPO Firms, *The Journal of Finance, 49*(5), 1699-1726.

Kenourgios, D.F., Papathanasiou, S., & Melas, E.R. (2007). Initial Performance of Greek IPOs, Underwriters Reputation and Oversubscription. *Managerial Finance, 33*(5), 332-343.

Kıymaz, H. (2000). The Initial and Aftermarket Performance of IPOs in an Emerging Market: Evidence from Istanbul Stock Exchange, *Journal of Multinational Financial Management, 10*, 213-227.

Lee, P., Taylor, S., & Walter, T. (1996). Australian IPO Underpricing in the Short and Long-Run. *Journal of Banking and Finance*, *20*, 1189-1210.

Levis, M. (1993). The Long Run Performance Of Initial Public Offerings: The U.K. Experience 1980-1988, *Financial Management, 22*, 28-41.

Lewis-Beck, M.S. (1980). Applied Regression: An Introduction, *Qualitative Applications in the Social Science,* California: SAGE Publications.

Loughran, T., Ritter, J.R., & Rydqvist, K. (1994). Initial Public Offerings: International Insights, *Pacific-Basin Finance Journal*, *2*, 165-199.

Loughran, T., & Ritter, J.R. (2002). Why Don't Issuers Get Upset About Leaving Money on the Table in IPOs, *Review of Financial Studies, 15*(2), 413-443.

Lowry, M., & Schwert, G.W. (2002). IPO Market Cycles: Bubbles or Sequential Learning, Journal of Finance, *57*, 1171-1200.

Minardi, A.M., Ferrari, G.L., & Araujo Tavares, P.C. (2013). Performances of Brazilian IPOs Backed by Private Equity, *Journal of Business Research*, *66*(3), 448–455.

Özer, B. (1999). Price Performance Of Initial Public Offerings In Turkey. Ankara: Capital Markets Boards Publishing, Production Number: 128.

Ritter, J.R. (1984). The Hot Issue Market of 1980, *The Journal of Business, 57*(2), 215-240.

Ritter, J.R. (1991). The Long-Run Performance of Initial Public Offerings, *The Journal Of Finance, 46*(1), 3-27.

Ritter, J.R. (2003). Differences between European and American IPO Markets, *European Financial Management*, *9*(4), 421-434.

Rock, K. (1986). Why New Issues are Underpriced, *Journal of Financial Economics*, *15*(1), 187-212.

Schultz, P. (2003). Pseudo Market Timing and the Long-Run Underperformance of IPOs. *The Journal of Finance, 58*(2), 483-517.

Stoll, H., & Curley, A. (1970). Small Business and the New Issues Market for Equities, *The Journal of Financial and Quantitative Analysis, 5*(3), 309-322.

Switzer, LN., & Bourdon, J. (2011). Management Quality and Operating Performance: Evidence for Canadian IPOs, *International Journal of Business*, *16*(2), 133-149.

Thomadakis, S., Nounis, C., & Gounopoulos, D. (2012). Longterm Performance of Greek IPOs, *European Financial Management*, *18*(1), 117–141.

Zaier, LH., & Abdelmoula, A.K. (2014). Hot and Cold Cycles for African Emerging Share IPO Market Evidence From Tunisia, *Asian Economic and Financial Review*, *4*(11), 1691-1704.