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Türk İlk Halka Arz Piyasasında Sürü Davranışının Ampirik Analizi

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Özet

İlk halka arzların arkasındaki davranış sorunları finans literatüründe hala çözüme ulaşmamış bir olgudur. Bu çalışmanın amacı, kısa vadede Borsa İstanbul'da listelenen firmaların halka arz sonrası dönemde olası sürü davranışının varlığını tespit etmektir. Parker ve Pretcher (2012), sosyoekonomik teoriye göre, belirsizlik olduğu durumlarda insanların başkalarını taklit etme eğilimi gösterdiğini belirtmişlerdir. Bu nedenle, analiz, belirsizliğin daha yüksek olduğu halka arz piyasasında yapılmıştır. Altında yatan sebep ise, insanların bilinçaltlarında "bazen başkalarının gerçekten bildiğini" düşünmeleri, bu nedenle onlara göre belirsizlik altında diğerlerini takip etmek ya da sürü davranışı göstermek hayatta kalma şansları arttırmaktadır (Parker ve Pretcher, 2012:5). Kremer (2010), gelişmekte olan piyasalarda belirsizliğin, mükemmel düzenleyici çerçevelerin bulunmamasından dolayı daha yüksek olduğunu belirtmektedir. Dolayısıyla, bu belirsiz ortam nedeniye, yatırımcılar diğerlerini takip ederler. Birçok araştırmacı, gelişmiş (ABD ve İngiltere gibi) ve gelişmekte olan (Türkiye ve Brezilya gibi) ülkelerin pazarlarındaki sürü davranışının varlığına yönelik çalışmalar yapmışlardır. İncelenen literatüre göre, yazarların bilgisi doğrultusunda, Türk halka arz piyasasında sürü davranışının varlığına yönelik herhangi bir çalışma olmadığı görülmüştür ve bu çalışma bu boşluğu doldurmayı amaçlamaktadır. Halka arz satış sonrası getirileri 30-günlük periyod halinde kullanılmıştır. Sürü davranışının varlığı saptamak için, Christie ve Huang (1995) yöntemi kesitsel standart sapma (CSSD) dağılım olarak kullanılarak uygulanmıştır. Eviews yazılımı kullanılarak regresyon analizi uygulanmıştır. Sonuçlar, sürü davranışının analiz edilen süre boyunca mevcut olmadığını göstermektedir.

Anahtar kelimeler: *Davranışsal finans, sürü davranışı, sezgiler, ilk halka arz, anomaliler.*
Jel Kodu: *G10, G40, G41*

Empirical Analysis of Herd Behavior in the Turkish IPO Market

Abstract

The behavioral issues behind initial public offerings (IPOs) are still unsolved phenomenon in finance literature. The aim of this paper is to find out the probable presence of herd behavior in the post-IPO period of the firms listed in Borsa Istanbul for the short term. Parker and Prechter (2012) emphasized that based on the socioeconomic theory, when there is uncertainty; people tend to imitate others due to evolutionary reasons. For this reason, the analysis is conducted to IPO market in which uncertainity is higher. The underlying reason is that people think unconsciously that "sometimes others actually do know", so according to them under uncertainty following others or showing herd behavior increases the overall chance of survival (Parker and Prechter, 2012, p.5). Kremer (2010) states that in emerging markets uncertainty is higher due to lack of perfect regulatory frameworks. Therefore, because of this uncertain environment, investors may follow others. Many researchers conducted studies about the evidence of herd behavior in developed (such as USA and England) and developing (such as Turkey and Brazil) countries' markets. According to the investigated literature, to the best of authors' knowledge, there is no study that focused on the evidence of herd behavior in the Turkish IPOs market and this study aims to fill this gap. Daily returns of the IPO aftermarket are used during a 30-day period. To detect the evidence of herd behavior, Christie and Huang (1995) method is implied by using cross sectional standard deviation (CSSD) as a dispersion. Regression analysis is employed by using Eviews software. The results indicate herd behavior is not present for the analysed period.

Keywords: *Behavioral finance, herd behavior, heuristics, IPOs, anomalies.*
Jel Codes: *G10, G40, G41*

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1. INTRODUCTION

The companies prefer to go public in order to meet their desire to raise capital. Besides this financial reason, increased publicity and prestige is the second main reason of companies to go public (Ritter and Welch, 2002, p.1796). The literature focuses on the short-term and long-term performance of initially published shares as well as the reasons behind going public in both developed and emerging markets.

The studies that analyse initial public offerings (IPOs) in developed markets date back compared to the emerging markets because stock markets and regulations of developed markets is much older. For instance, stock trading started at Borsa Istanbul in 1986 whereas it started in 1801 in the UK.

The first study that examined the IPOs in the Turkish stock market is handled by Güzelhan and Ağar (1991). The studies can be grouped into two regarding the period of the firm performance. Some of the studies investigated short term firm performance by using first day return (i.e. Güzelhan and Ağar, 1991; Kıymaz, 1997; Kıymaz, 2000; Ertuna et al, 2003; Teker and Ekit, 2003; Yalçıner, 2006; Altan and Hotamış, 2008; Ünlü and Ersoy, 2008; Küçükkocaoğlu, 2008; Küçükkocaoğlu and Alagöz, 2009; Ercan and Çevikel, 2011; Kaya, 2012; Elmas and Amanianganeh, 2013; Yıldırım and Dursun, 2016). Some of the studies focused on long-term performance of firms (i.e. Ayden and Karan, 2000; Kurtaran, 2013) while some of them calculated and compared both short term and long-term performance (i.e. Orhan, 2006; Tükel, 2010; Sağlam and Çelik, 2011).

There are some studies that focused on return of IPOs in one specific country whereas some of them compared amongst countries. Some studies investigated the performance of IPOs on a single specific and developed country (i.e. McDonald and Fisher, 1972; Ibbotson, 1975; Chalk and Peavy, 1987; Uhlir, 1989; Aggarwal and Rivoli, 1990; Levis, 1993; Jakobsen and Sorensen, 2001) whereas some researchers pointed out the IPO performance on emerging markets (i.e. Paudyal et al., 1998; Hensler et al., 2000; Chen et al., 2004; Chi and Padgett: 2005; Jaskiewicz et al., 2005; Samarakoon, 2010; Lee et al., 2011; Handa and Singh, 2014; Hearn, 2014). In addition to these studies, some studies compared the stock performance of companies that went public among countries (i. e. Aggarwal et al., 1993; Loughran et al., 1994; Alvarez and Gonzalez, 2005; Banerjee et al., 2011; Engelen and Essen: 2010; Alanazi ve Al-Zoubi, 2015).

1.1 Motivation

Due to the lack of historical values and demand of investors to the shares, aftermarket of IPOs is referred as a stressful and uncertain period. In these kinds of periods where the uncertainty is high, investors tend to behave irrationally. As a result of this irrational behaviour, the term known as “herd behavior” arises in the financial markets.

1.2 Contribution

According to the investigated literature, to the best of authors’ knowledge, there is no study that focused on the evidence of herd behavior in the Turkish IPO market and this study aims to fill this gap. Daily returns of the IPO aftermarket are used during a 30-day period.

This paper is organized as follows. Section 2 describes the conceptual framework and terminology used throughout this paper. Section 3 describes data and research methodology used for empirical analysis. Sections 4 indicates the findings of the analysis and finally Section 5 provides conclusion of this paper.

2. RELATED WORKS

Behaving like a herd is drawn attention not only in psychology literature, but also in finance literature. Döm (2003, p.135) defines financial herd behavior as “the simultaneous co-transaction by a group of investors in the same direction in relation to the same assets”.

According to many economists such as Choe, Kho and Stulz (1998) and Bikhchandani and Sharma (2000); herd behavior increases the market volatility and fragility and hence destabilizes the market. Therefore, it moves away the stock away from its fundamental value. For that reason, presence of herd behavior is examined in various markets by using different measurement types.

There are many models that were developed to measure herd behavior. However; the most common measurement types are; Lakonishok, Shleifer and Vishny (LSV) Measurement which was developed by Lakonishok, Shleifer and Vishny (1992); Cross Sectional Volatility of the Stocks which was developed by Christie and Huang (1995) and Chang, Cheng and Khorana (2000); and Beta Herding which was developed by Hwang and Salmon (2004). Wylie (2005) used LSV measure for English investment funds during the period 1986-1993, and it is found significant evidence of herd behavior both in small and big funds. Moreover, Caporale, Economou and Philippas (2008) used cross sectional dispersion of stock returns that was devepoled by Christie and Huang (1995) to detect herd behavior on Athens Stock Exchange (ASE) between the year 1998 and 2007, and they also found significant evidence of herd behavior. Lastly, Wang (2008) used the cross-sectional variance of the betas to study herd behavior towards market index in major developed and emerging financial markets. It is found a higher level of herd behavior in emerging markets than in developed markets.

Beside those studies that were conducted in various markets, there are also some studies in Turkey that examined the existence of herd behavior in Borsa Istanbul (BIST). Some of those studies reached significant evidence of herd behavior in BIST (i.e. Altay, 2008; Kapusuzoğlu, 2011; and Kayalıdere, 2012). On the other hand, some other studies that were conducted in Turkey could not reach any significant evidence of herd behavior in BIST (i.e. Çoban, 2009; and Doğukanlı and Ergün, 2011). Since each study were conducted by using different measurement types and different data sets, the diversity of the results could be occurred.

One of the important reasons of following the crowd is the uncertain environment. Parker and Prechter (2012) emphasized that based on the socioeconomic theory, when there is uncertainty; people tend to imitate others due to evolutionary reasons. The underlying reason is that people think unconsciously that "sometimes others actually do know", so according to them under uncertainty following others or showing herd behavior increases the overall chance of survival (Parker and Prechter, p.5). Kremer (2010) states that in emerging markets uncertainty is higher due to lack of perfect regulatory frameworks. Therefore, because of this uncertain environment, investors may follow others.

Initial public offering (IPO) aftermarket is a good example for the uncertain environment due to the lack of historical values and demand of investors to the shares and even the behavioral issues behind IPOs are still phenomenon in finance literature. The reasons behind going public is still a phenomenon. Advantages and disadvantages of going public is still a debatable issue among researchers and investors. Maksimovic and Pichler (2001) state that going public adds value to the firm by attracting more investors despite the fixed costs associated with going public.

Some researchers such as Lucas and McDonald (1990) focused on the IPO performance under the bull or bear market conditions and point out that market condition has an impact on IPO pricing. Unlike most of the research in the literature, Pagana et al. (1998) analysed the firms that have the potential to go public rather than the firms that are already gone public. Findings of the study indicate that high investment and growth is followed by going public.

Lowry (2003) focus on the bahavioral issues behind IPO volume. It is found that investor sentiment and adverse selection are the determinants of IPO volume. Some studies

analysed the impact of underwriters on IPO performance. Ljungquist and Wilhelm (2003) stated that the higher the number of IPOs, the higher the initial returns, because of the underwriters.

There are some theories that explained short-term IPO performance by asymmetric information. Either the issuers can be more informed than the investors or the investors can be more informed than issuers. One of the main theories about the asymmetric information, which can be adapted to the IPOs with the issuers have more information, is known as Akerlof (1970) Lemon Problem. In the latter asymmetric information, investors are more informed about IPOs. But the point is that, all investors might not be equally informed which in the end results with the winner's curse (Rock, 1986).

The studies that analysed IPOs in developed markets date back compared to the emerging markets due to the fact that stock markets and regulations of developed markets is much older. For instance, the first study about IPOs in Turkish market is handled by Güzelhan and Ağar (1991) which analysed the firm performance for the first day and first month of going public. Kıymaz (1997) investigated the IPO performance and the reasons behind the initial abnormal return for the first days, weeks and months of going public. On the contrary, Ayden and Karan (2000) researched the long-term performance of IPOs. Kıymaz (2000) examined the IPO performance for various industries. Ertuna et al. (2003) pointed out the impact of underwriter on IPO performance. Orhan (2006) tested the initial abnormal return of IPOs for the long run by splitting the sample into sub-sectors. Ercan and Çevikel (2011) applied a survey to market professionals and executives of IPOs. Short-term abnormal return is found based on the perception of survey results.

Beside these studies; the presence of herd behavior in the IPO aftermarket is examined sectoral by Dehghani and Sapian (2014) in Malaysia from 2001 to 2011 by using Christie and Huang (1995) method. As a result of their analyses, they found that herd behavior is present particularly in the consumer and technology sectors during up and down markets.

To the best of authors' knowledge, any study analysed the herd behavior tendency of IPO aftermarket in Turkey. Therefore, this paper contributes to the literature by examining the effect of herd behavior on IPOs in Turkey.

3. METHODOLOGY

The aim of this paper is to find out the presence of herd behavior in the post-IPO period of the firms listed in Borsa Istanbul for the short term. In this study, Christie and Huang (1995) measurement was used to detect herd behavior during the first 30 days in the aftermarket of Turkish IPOs. According to Christie and Huang (1995), when there is a herd behavior in the market, dispersions are expected to be relatively low. They focused on the periods of market stress and tested herd behavior during periods of extreme market movements. In the periods of extreme market movements, investors tend to imitate the common behaviors of other investors, and hence asset rate of returns gather around the market average. This causes a decrease in cross sectional dispersion and it is the indicator of herd behavior. Christie and Huang (1995) measure the dispersion with the cross-sectional standard deviation:

$$CSSD_t = \sqrt{\frac{\sum_{i=1}^{N}(R_{i,t}-R_{m,t})^2}{N-1}} \qquad (1)$$

In Equation (1); $CSSD_t$ denotes the cross-sectional standard deviation of stock return rates from the market return rate in period t. $R_{i,t}$ denotes the return rate on IPO i for day t and $R_{m,t}$ denotes the return on the market portfolio in period t. As a market portfolio cross-sectional average of the n IPO returns for day t is calculated. N denotes the number of IPO firms for the selected period.

Moreover, Christie and Huang (1995) measured herd behavior in extreme market

movements with the following regression formula:

$$CSSD_t = \alpha + \beta_1 D_t^L + \beta_2 D_t^U + \varepsilon_t \quad (2)$$

In Equation (2), the α coefficient denotes the average dispersion of the sample excluding the regions covered by two dummy variables. D_t^L takes the value of 1 if the market return on day t lies in the extreme lower tail of the return distribution, and zero otherwise. Similarly, D_t^U takes the value of 1 if the market return on day t lies in the extreme upper tail of the return distribution, and zero otherwise. ε_t denotes the error term. To define extreme market movements, Christie and Huang (1995) used upper and lower tail of the distribution of market returns for the dummy variables. In this study, 10% upper and lower tails were selected. According to this regression method, negative and statistically significant β_1 and β_2 values are the indicators of the presence of herd behavior.

Between 2007 and 2017, Borsa Istanbul statistics reported 101 new listings. The data were collected from Capital Markets Board of Turkey website and closing prices of IPOs were taken from the Borsa Istanbul website. Investors' herd behavior in the short-term IPO aftermarket was examined during a 30-day period. In the study, event dates were used, so there are totally 30 CSSD data. IPO daily return is calculated from the following formula:

$$R_{i,t} = \frac{P_{i,t} - P_{i,t-1}}{P_{i,t-1}} \quad (3)$$

In Equation (3), $P_{i,t}$ is the closing price of stock i on day t and $P_{i,t-1}$ is the closing price of stock i on the previous day (t-1). For the 10% upper and lower tails, the average aggregate cross-sectional IPO return of period i is ranked from lowest to highest, and 3 days of the highest and lowest returns are considered to carry the IPO portfolio stress.

4. FINDINGS AND DISCUSSION

Before implementing the regression analyses, preliminary analyses must be carried out to meet the assumptions of the regression. First, the normality of the residuals was checked with the Jarque-Bera test, and test result is not statistically significant with the value of 0.392 which indicate the residuals are normally distributed. Then, serial correlation (autocorrelation) and heteroscedasticity of the series were controlled. Serial correlation was analysed with the Breusch-Godfrey Serial Correlation LM Test, and according to the results, Prob. Chi Square Value is 0.3894 which is not statistically significant hence there is no autocorrelation problem. Moreover, heteroscedasticity was analysed with the White test, and according to the results, Prob. Chi Square Value is 0.2898 which is not statistically significant too and indicates there is also no heteroscedasticity problem. After the preliminary analysis, regression equation (2) was run to detect if there is an evidence of herd behavior for the IPO aftermarket in Turkey.

Table 1: Results of the Regression Analyses in the Extreme Market Movements

Variables	Coefficients
Included Observations	30
α	(0.033329)***
D_t^L (β_1)	(-0.005317)
D_t^U (β_2)	(0.026622)***
Adj. R-Square	(0.565041)
F-statistic	(19.83647)***

***, **, * indicate statistical significance at the 1%, 5% and 10% level, respectively.

Overall, Table 1 indicates the regression results during a 30-day period of IPOs at Borsa Istanbul that went public between 2007 and 2017. The (β_1) coefficient shows the change in the amount of return dispersion given that IPO portfolio return is in the lowest 10 % return, which is also referred as lower market stress in literature. On the contrary, the (β_2) coefficient shows the change in the amount of return dispersion given that IPO portfolio return is in the highest 10 % return, which is also referred as upper market stress.

According to the F-statistics the model is statistically significant and valid at 1% level. The adjusted R-square values is 56.5 % which means; that amount of the total variation in cross sectional standard deviation (CSSD) is explained by the regression model consisting of closed-end fund discount as a sentiment proxy. When the coefficients are evaluated, β_1 coefficient is negative for 10% lower tails and this means the CSSD is a decreasing function of the market return in the extreme lower tails. Although, this is the indicator of herd behavior, it is not statistically significant. On the other hand, β2 coefficient is positive and statistically significant at the 1% level. These results imply that there is no evidence of herd behavior in Borsa Istanbul IPO aftermarket in the extreme market movements.

5. CONCLUSION

This paper analyses the tendency of investors to herd behaviour in the aftermarket of Turkish IPOs between the period 2007 and 2017. To the best of authors' knowledge, there is no study that focused on the evidence of herd behavior in the Turkish IPOs market and this study aims to fill this gap IPO aftermarket is chosen for the empirical analysis because based on the literature return, herding takes place in markets where the stress and uncertainty is high. Due to the lack of historical data, IPO aftermarket is assumed to be a stressful period in terms of investors perception. Since the investors have tendency to behave irrationally under uncertain circumstances, they imitate the way that others behave when constructing portfolio.

Although the IPO aftermarket has higher uncertainty and higher chance of herd behaviour in terms of investors' perception, findings of this study reveal that there is no significant herd behaviour either in up market and down market. The absence of herd behaviour also shows that investors may behave rationally in the Turkish IPO aftermarket during the first 30-day period. The main reason might be the limited number of IPO data for the sample period. As a further study, it might be possible to use other measurement types of herd behaviour which might reach different conclusions.

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