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Underpricing Anomaly in Initial Public Offerings: An Application on Borsa İstanbul Health Sector

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ABSTRACT

The phenomenon of underpricing in initial public offerings has been one of the topics debated in the literature for a long time. Examining underpricing, which is an example of price anomalies, and analyzing its determinant factors are vitally important for the establishment of efficient capital markets. The aim of this study is to contribute to the existing literature on the underpricing anomaly observed in initial public offerings. For this purpose, the initial public offerings of companies in the health sub-sector whose stocks are traded in Borsa Istanbul for the period 2006 – 2021 are examined. The short-term price performance of the stocks included in the sample after the initial public offering is analyzed. The main problem for which the answer is sought in the study is whether an investor who buys stocks from the issuance in the initial public offering of the sample companies can get more returns than the market when they hold and sell these stocks for a short period of time.

The change in the initial returns of the initial public offerings of health companies, especially as a result of increasing health awareness after Covid-19, is also examined.

In the analysis, raw return (RR), abnormal return (AR), cumulative abnormal return (CAR) and compound abnormal returns (BHAR) are calculated during the 1, 3 and 7 days, which are considered as analysis period. If the AR, CAR and BHAR calculated in the analysis are greater than 0 and the their values are statistically significant according to the t-test result, the existence of underpricing can be accepted.

According to the results of the analysis, a underpricing anomaly has not been found out in the initial public offerings of the health companies that formed the sample. Based on this finding, it can be expected that investors who bought a stock in an initial public offering would not have an abnormal return if they held it in portfolio basket for 1, 3, and 7 days of the analysis period. It can be recommended that investors not to choose health sector companies while investing in the public offering in terms of obtaining positive higher returns.

Keywords: Initial Public Offering, Underpricing Anomaly, Abnormal Return, Healthcare Institutions, t-test

İlk Halka Arzlarda Düşük Fiyatlama Anomalisi : Borsa İstanbul Sağlık Sektörü Üzerine Bir Uygulama

ÖZET

İlk halka arzlarda düşük fiyatlama olgusu uzun zamandır lireratürde incelenen konuların başında gelmektedir. Bir fiyat anomali örneği olan düşük fiyatlamanın incelenmesi ve sebeplerinin analiz edilmesi etkin sermaye piyasalarının oluşturulması için hayati derecede önemlidir.

Bu çalışmanın amacı ilk halka arzlarda görülen düşük fiyatlama anomalisi ile ilgili mevcut literatüre katkı yapmaktır. Bu amaçla Borsa İstanbul'da hisse senetleri işlem gören sağlık alt sektöründeki firmaların 2006 – 2021 dönemi için ilk halka arzları incelenmiştir. Örnekleme dahil edilmiş halka arz olan hisse senetlerinin ilk halka arz sonrası kısa dönem fiyat performansı analiz edilmiştir. Çalışmada cevabı aranan temel sorunsal, sağlık sektöründe yer alan örneklem firmalarının ilk halka arzında ihraçtan hisse senedi satın alan bir yatırımcının bu hisse senetlerini kısa dönem boyunca elinde tuttup sattığı zaman piyasaya göre daha fazla getiri elde edip edemeyeceğidir.

Anahtar Kelimeler: İlk Halka Arz, Düşük Fiyatlama Anomalisi, Anormal Getiri, Sağlık Kuruluşları

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Price stability of financial instruments plays a critical role in terms of sustainable returns for investors trading in capital markets. Price stability, on the other hand, is observed when there are no abnormal price movements in the market and when volatility is not excessive. In a market where price stability is ensured, no investor will be able to obtain an abnormal return. There are many theories in the literature regarding the price movements of financial instruments. The most well-known and still accepted in the current literature is the Efficient Market Hypothesis put forward by Fama in 1965. Fama (1965), in his study named random walk in the stock market, states that the current prices of stocks reflect all the historical information about that stock (7). The hypothesis assumes that investors successfully use past price information in current price formation (12). In such an efficient market, there is no problem of using asymmetric information between investors, as prices contain all kinds of information about the stock (5). As a result, no investor can make more profit than the others (2).

However, in real life, some anomalies can be seen in the price movements of financial instruments, especially stocks. In capital markets, it may be possible for some investors to earn more profit than others, in other words, to earn excessive profits. There are many macro and micro determinants of this situation. The existence of asymmetric information among investors is the foremost among these reasons.

These price anomalies emerged in the market can be observed in the short term after the public offering of newly publicly offered stocks as well as in the stocks that have already been offered to the public.

These price anomalies observed in the short and long term after the IPO are called short-term underpricing and long-term underperformance anomalies in the literature (11). One of the reasons for the underperformance in the long run is the window of opportunity, which causes many companies to attack the public offering, but leads to negative or low returns in the long run, due to the fact that investors are overly optimistic about the general economic conjuncture (11). In addition to the overly optimistic and pessimistic reaction of the investors, price anomalies can also be seen due to the existence of asymmetric information between investors. In summary, contrary to the assumptions of the efficient market hypothesis, many anomalies can be observed in real life.

In this study, the short-term underpricing anomaly, which is one of the most frequently mentioned anomalies in the literature, will be examined. For this purpose, initial public offerings of companies in the health sub-sector conducted during the 2006-2022 period will be examined, and the existence of underpricing anomaly in these public offerings will be investigated. As a result of the study, it will be determined whether an investor who buys stocks from the initial public offering of the sample companies and holds it for 1, 3 and 7 days, which is accepted in this study as short-term, can make excessive profits compared to the market average. In the study, the t test will be performed on SPPS 22 version.

In the second part of the study, the conceptual framework for price anomalies will be drawn. In the 3rd section, the findings of the studies conducted in the national and international literature will be examined and in the 4th section, the existence of short-term underpricing anomaly in the initial public offerings of the companies operating in the health sector will be analyzed. In the 5th chapter, which is the last part of the study, the interpretation of the results and findings will be carried out.

Theoretical Framework of Underpricing in Initial Public Offerings

While a firm determines the price it will sell to investors in the primary market in the initial public offering, it actually determines the value of the company, in other words, it evaluates the company and finds the potential public offering price by dividing the value it finds by the number of shares to be sold (6). Pricing in public offering is one of the most important issues in corporate finance, as it is the stage where the business model of the firm is evaluated and priced. Intermediary institutions that mediate the public offering of companies may underprice their stocks by showing the company at a lower value in order to ensure the success of the public offering and to sell all the stocks (2). Underpricing refers to the determination of stocks below their fair value. Underpricing is considered a price anomaly because it represents a price level beyond the fair value of the stock. While underpricing guarantees the successful marketing of all stocks in the initial public offering, it also represents decreased IPO proceed (money left on the table) for the firm (15).

The underpricing anomaly is one of the most emphasized issues in the financial literature. Rock (1986), Ibbotson (1975), Ibbotson and Jaffe (1975), Ljungqvist (2004), Ritter

Acıbadem Univ. Sağlık Bilim. Derg. 2022; 13 (4): 680-688

681

(1984) and Ritter (1991) are the authors who made the most important contributions to the formation of the theoretical framework on this subject. However, the underpricing hypothesis has been applied by many academics all over the world in various country and sector categories.

Underpricing can be seen as a cost as it represents the loss of export revenue of the firm and the volume of underpricing increases over time. In the USA, loss of IPO proceed of firms due to underpricing is 3.3 Billion USD between 1980-1989, 30.8 Billion USD between 1990-1998, 66.79 Billion USD in 1999-2000 (only 2 years) and 130.22 Billion USD in the period 2001-2021 (19). As can be seen, the size of the underpricing seen in initial public offerings gradually increases over time.

There are hypotheses such as the Changing Risk Composition Hypothesis, the Realignment of Incentives Hypothesis, and the Issuer's Changing Objective Function Hypothesis (16) in order to explain this change in the underpricing seen in the initial public offerings over time. According to the changing risk composition hypothesis developed by Ritter in 1984, it is assumed that riskier initial public offerings will be more underpriced (17). The realignment of incentives and the changing issuer objective function hypotheses both assume changes over time in the willingness of issuers to accept underpricing. Both hypotheses assume that investment banks seek to benefit from the rent-seeking behavior that occurs when there is excessively underpricing.

There are many models developed in the literature on the determinants of underpricing. These models include asymmetric information, institutional reasons, control considerations, and behavioral approaches (13). The hypotheses developed under the asymmetric information model are the winner's curse hypothesis, principal-agent models and underpricing as a signal of firm quality models. In the model named winner's curse, which was developed by Rock in 1986, the oldest and most well-known of these methods, investors in an IPO are divided into investors who know whether the stocks are underpriced or not, and investors who are not aware of the price of the stocks (20). Investors who know that the stocks in an IPO are underpriced will show high demand for these stocks, but they will not prefer to buy these stocks when they are overpriced. However, investors who do not have adequate information about the fair value of the stocks may demand stocks from the public offering in both cases, and when the stocks are overvalued high in this way, they may purchase these stocks far above their fair value.

Principal-agent models try to explain the behavior of investment banks in the pricing process in the IPO. The role of investment banks in the public offering process, their functions in pricing and allocation, as well as the agency problems between them and the issuer are discussed. When an IPO is underpriced, a rent competition may occur between investors by using an investment bank, since this will mean a wealth transfer from the public offering company to the investors (13).

The Behavioral approach model, deals with the effect of investors' behavior on pricing in the public offering process. In this model, it is investigated how investors deviate from information-based market efficiency and show irrational behaviors and affect pricing in the public offering process (22). Behavioral effects of investors are especially seen in the public offering of companies that are relatively young and therefore do not have enough information about their sustainability. The model that will give the most optimal response to the expectations of the investors was first developed by Ljungqvist, Nanda, and Singh in 2004. In this model, in a situation where investors have optimistic expectations about the firm, it is assumed that the investors of the issuer firm will want to maximize its issuance income by holding as many stocks as possible under the downward sloping demand curve. When the issuer injects too many stocks into the market, this will lower the stock price. For this reason, the company will be able to keep the price high by keeping the stocks in this way. However, this is a strategy that can be applied for the short term, and the stock price will return to its fair value in the long run.

In the control considerations model, underpricing allows company managers to protect their private interests by acting strategically while making an IPO (4). For this reason, company managers avoid allocating large shares to investors in public offerings. In particular, it is accepted that an allocation to a larger number of investors will protect existing partners against the hostile takeover problem (8).

Literature Review
In this part of the study, studies performed on the underpricing anomaly in IPOs in the international literature will be examined. Underpricing anomaly literature have generally focused on the existence of underpricing, its size, change of its volume over time, and its macro and micro determinants. There are numerous studies carried out at different times on different countries' stock exchanges. Table 1 summarizes model developed to explain underpricing and its determinants as follows:

Acıbadem Univ. Sağlık Bilim. Derg. 2022; 13 (4): 680-688

682

Table 1. Models in Existing Literature on IPO Underpricing

MODELS	EXPLANATIONS
Asymmetric Information Models	
The Winner's Curse – Rock (1986)	He stated that asymmetric information among investors in initial public offerings will lead to underpricing or overvaluation.
Information Revelation Theories - Benveniste and Spindt (1989)	They found that the possible underpricing in the public offering encouraged investors to disclose information about their valuation about the company at the preliminary prospectus stage, and this information was used to determine the public offering price.
Principal–Agent Models - Michael Jensen and William Meckling (1976)	The model is based on the separation of objectives between the managers of the firm and the investment banks that mediate the public offering. While firm managers seek to maximize IPO revenue, investment banks may underprice stocks to ensure the success of the IPO.
Underpricing as a Signal of Firm Quality - Ibbotson (1975), Allen and Faulhaber (1989)	By underpricing the IPO price of high-quality firms, it makes it difficult for low-quality firms to imitate them. So they use the IPO price as a signal. In addition, with the statements made before the IPO, they inform the investments about the real quality of the company and thus eliminate the low quality companies.
Ownership and Control	
Underpricing as a Means to Retain Control - Brennan and Franks (1997)	He argues that company managers are planning to take control of the company management in the new capital distribution after the public offering by using underpricing and to prevent a possible hostile takeover attempt.
Underpricing as a Means to Reduce Agency Costs - Brennan and Franks (1997), Stoughton and Zechner (1998)	When the managers have a share in the company remarkably, they may not prefer high underpricing in IPO.
Behavioral Explanations	
Cascades - Welch (1992)	In initial public offerings made sequentially over time, investors participating in the IPO may set aside their own bids by focusing on previous investors' bids. Welch called this interaction among investors the informational cascade.
Investor Sentiment - Ljungqvist, Nanda, and Singh (2004)	They found that the overly optimistic or pessimistic expectation of investors about the future performance of a stock is very influential on the firm's pricing and share allocation transactions in the IPO.
Prospect Theory And Mental Accounting - Loughran and Ritter (2002)	It examines the effect of firm managers' behavior on underpricing in an initial public offering. They found that company managers were not upset by the loss of IPO revenue due to underpricing, on the contrary, they tried to compensate for this loss with new public offerings to be made in the future by taking advantage of the increasing prices of the stocks offered to the public over time.

Analysis of Underpricing on İstanbul Exchange Health Sector

Dataset and Sample Structure

In this part of the study, an analysis will be made regarding the existence of underpricing in initial public offerings. The analysis will be applied to healthcare institutions whose stocks are traded in Istanbul Exchange, which have made their first public offering in the period of 2006-2021. During the analysis period, the first public offering of a total of 9 health institutions took place. Sample companies and public offering information are shown in Table 2 as follows:

The data used in the analysis consists of the public offering prices of the sampled companies, the closing prices of the 1st, 3rd and 7th days after the public offering, and the closing values of the Borsa İstanbul 100 national index. Public offering prices were obtained from www.spk.gov.tr, stock and index closing information was obtained from www.investing.com.

Table 2: Sample Firms IPO Summary Information

Equity Code	Offering Date	Offering Price - TRL
ANGEN	21/10/2021	22,5
EGEPO	25 - 26 August 2021	5
GENIL	30.07.2021	10,75
MEDTR	25.06.2021	28
MPARK	6.02.2018	19
RTALB	27.05.2014	13
TRILC	25-26 February 2021	10
LKMNH	26.01.2011	4,13
SELEC	19-21 April 2006	5,35
Source: www.spk.gov.tr		

Acıbadem Univ. Sağlık Bilim. Derg. 2022; 13 (4): 680-688

683

Methodology

In the study, abnormal return is defined as the difference between the raw returns (RR) of stocks and the market return, in accordance with the international literature. While the raw return is taken into account as the daily return of the stocks of the sample companies, the market return is accepted as the daily return of the Istanbul Exchange 100 National Equity Index. The 1st, 3rd and 7th days after the public offering were taken into account as the analysis period. Cumulative and compound return calculations of the abnormal returns were also made. The expression used to calculate the abnormal return is shown in Equation 1 below (3):

$$AR_{it} = R_{it} - R_{mt} \quad (1)$$

The explanation of the notations in the equation is as follows:

AR_{it}: The abnormal return of stock i in period t,

R_{it}: The raw return of stock i in period t,

R_{mt}: The raw return of market i in period t,

In the study, the existence of underpricing will be determined according to whether the calculated abnormal return is greater than 0, in other words, whether it is positive or not. The hypotheses to be used in testing the existence of underpricing were created separately for AR, CAR and BHAR and are shown as follows:

H_0: $\overline{AR}\,t \leq 0$ There is no underpricing

H_a: $\overline{AR}\,t > 0$ There is underpricing

H_0: $\overline{CAR}\,t \leq 0$ There is no underpricing

H_a: $\overline{CAR}\,t > 0$ There is underpricing

H_0: $\overline{BHAR}\,t \leq 0$ There is no underpricing

H_a: $\overline{BHAR}\,t > 0$ There is underpricing

The t-test was performed using SPSS version 22 for the rejection or acceptance of the hypotheses.

Test Results – Findings

In the study, the short-term price performances of the stocks offered to the public were calculated separately for the first day, the first 3 days and the first 7 days. For this purpose, first of all, descriptive statistics related to the data sets discussed in the study were examined.

Table 3. Descriptive Statistics on First Day Performances		
	Stock Price	**BIST 100 Index Closing Value**
Mean	11.09	1139.75
Standard Deviation	8.29	393.80
Kurtosis	-0.62	-1.18
Skewness	0.75	-0.73
Min	1.52	447.46
Max	28.00	1541.98
Source: Author's Own Calculations		

Considering the first day performances of stocks and BIST 100 Index, it is seen that the average price of the stocks in question is 11.09, and the BIST 100 index is 1139.75. While the stock prices took the lowest value of 1.52 and the highest value of 28 for this period, the BIST 100 index varies between 447.46 and 1541.98. When the kurtosis coefficient is examined, it is seen that both variables have negative values, that is, they have a flatter structure than the normal distribution. The skewness coefficient is positive in stocks and negative in BIST 100 index. In other words, the distribution of stocks exhibits a left-skewed structure, while the BIST 100 index exhibits a right-skewed structure.

Table 4. Descriptive Statistics on First 3 Days Performances		
	Stock Price	**BIST 100 Index Closing Value**
Mean	10.22	1144.22
Standard Deviation	7.92	394.19
Kurtosis	-0.70	-1.19
Skewness	0.72	-0.69
Min	1.32	437.52
Max	28.00	1549.15
Source: Author's Own Calculations		

684

Acıbadem Univ. Sağlık Bilim. Derg. 2022; 13 (4): 680-688

Looking at the performances of the stocks and BIST 100 Index in the first three days, it is seen that the average price of the stocks in question is 10.22, and the BIST 100 index is 1144.22. While the stock prices are at the lowest 1.32 and the highest 28 for this period, the BIST 100 index varies between 437.52 and 1549.15. When the kurtosis coefficient is examined, it is seen that both variables have negative values, that is, they have a flatter structure than the normal distribution. The skewness coefficient is positive in stocks and negative in BIST 100 index. In other words, the distribution of stocks exhibits a left-skewed structure, while the BIST 100 index exhibits a right-skewed structure.

Table 6 Normality Test for the First Seven Days								
	$\overline{R}$		$\overline{AR}$		$\overline{CAR}$		$\overline{BHAR}$	
Days	Test Statistics	p-Val	Test Statistics	p-Val	Test Statistics	p-Val	Test Statistics	p-Val
1	1.24	0.54	1.27	0.53				
2	0.57	0.75	0.68	0.71	1.06	0.59	0.39	0.82
3	0.94	0.63	0.71	0.70	0.92	0.63	2.44	0.30
4	7.04	0.03	9.57	0.01	0.88	0.64	14.74	0.00
5	0.45	0.80	0.53	0.77	0.94	0.62	15.27	0.00
6	1.08	0.58	1.29	0.52	0.99	0.61	15.50	0.00
7	0.65	0.72	0.66	0.72	0.97	0.62	15.55	0.00
Source: Author's Own Calculations								

Table 5. Descriptive Statistics on First 7 Days Performances		
	Stock Price	BIST 100 Index Closing Value
Mean	9.81	1149.74
Standard Deviation	7.52	393.75
Kurtosis	-0.82	-1.17
Skewness	0.64	-0.67
Min	1.29	437.52
Max	28.00	1564.94
Source: Author's Own Calculations		

Looking at the first day performances of stocks and BIST 100 Index, it is seen that the average price of the stocks in question is 9.81, and the BIST 100 index is 1149.74. While the stock prices are at the lowest 1.29 and the highest 28 for this period, the BIST 100 index varies between 437.52 and 1564.94. When the kurtosis coefficient is examined, it is seen that both variables have negative values, that is, they have a flatter structure than the normal distribution. The skewness coefficient is positive in stocks and negative in BIST 100 index. In other words, the distribution of stocks exhibits a left-skewed structure, while the BIST 100 index exhibits a right-skewed structure.

The compatibility of $\overline{R}$, $\overline{(AR)}$, $\overline{(CAR)}$ and $\overline{(BHAR)}$ statistics calculated before the analysis with normal distribution in the first seven days was tested with Jarque-Bera tests.

According to Jarque Bera tests stated in Table 6.

For the statistics of $\overline{R}$, $\overline{(AR)}$ and $\overline{(BHAR)}$ on Day 4, and for the statistics of $\overline{(BHAR)}$ on Days 5, 6 and 7, at 95% confidence interval, the null hypothesis was rejected. Accordingly, it can be said that these series are not suitable for normal distribution. For the statistics other than these statistics, Wilcoxon Sequential Sign test, which is one of the non-parametric tests, was applied for not normal statistics, while the t-test was applied in the continuation of the analysis.

The price performance of the sample companies on the first day after the initial public offering is provided in Table 7 as follows:

Table 7 First-Day Price Performances of Stocks					
Day	n	$\overline{R}$	t-ist.	$\overline{(AR)}$	t-ist
1st Day	9	-31.06	-0.73	-31.84	-0.76
Note: n; is the number of observations. The critical values for the t-test are -1.38, -1.83 and -2.82 for the 10%, 5% and 1% confidence level, respectively.					

According to the results in Table 7, the first day raw returns of the stocks offered to the public are negative but statistically insignificant. The first day abnormal returns of stocks are negative and statistically insignificant. Considering the results, the H0 hypothesis cannot be rejected since the t-statistics values are not less than the critical value. In this case, by looking at the returns on the first day after the public offering, it can be stated that the underpricing phenomenon is not valid for the stocks offered to the public.

Acıbadem Univ. Sağlık Bilim. Derg. 2022; 13 (4): 680-688

685

The price performance of the sample companies on the first 3 days after the initial public offering is provided in Table 8 as follows:

Table 8 First Three-Day Price Performances of Stocks									
Day	n	$\overline{R}$	t-ist.	$\overline{(AR)}$	t-ist	$\overline{(CAR)}$	t-ist	$\overline{(BHAR)}$	t-ist
1	9	-31.06	-0.73	-31.84	-0.76	-31.84	-0.76	-31.84	-0.76
2	9	2.31	0.33	2.41	0.31	-29.43	-0.65	-1.31	0.00
3	9	2.19	0.35	1.98	0.33	-27.45	-0.58	-126.69	-0.05

Note: n; is the number of observations. The critical values for the t-test are -1.38, -1.83 and -2.82 for the 10%, 5% and 1% confidence level, respectively.

According to the findings in Table 8, the average raw returns of the stocks of the companies offered to the public in the first three-day period when they started to be traded in the stock market are positive except for the first day, but since the t-statistics values are not less than the critical value, it is statistically insignificant. The average abnormal returns, average cumulative abnormal returns and average compounded returns of stocks are similarly negative and t-statistics are not less than the critical value, so they are statistically insignificant.

According to the findings, all three null hypotheses cannot be rejected. In other words, by looking at the first three days' data, it can be accepted that the underpricing phenomenon is not valid for the stocks offered to the public.

The price performance of the sample companies on the first 7 days after the initial public offering is provided in Table 9 as follows:

Table 9 First Seven-Day Price Performances of Stocks									
Day	n	$\overline{R}$	t-ist.	$\overline{(AR)}$	t-ist	$\overline{(CAR)}$	t-ist	$\overline{(BHAR)}$	t-ist
1	9	-31.06	-0.73	-31.84	-0.76	-31.84	-0.76	-31.84	-0.76
2	9	2.31	0.33	2.41	0.31	-29.43	-0.65	-1.31	0.00
3	9	2.19	0.35	1.98	0.33	-27.45	-0.58	-126.69	-0.05
4	9	0.48	0.12	-0.01	0.00	-27.45	-0.58	-8191.21	-0.41
5	9	-1.25	-0.22	-1.28	-0.22	-28.73	-0.64	-67844.81	-0.29
6	9	2.27	0.62	2.09	0.58	-26.64	-0.57	-787597.91	-0.32
7	9	2.20	0.48	1.96	0.42	-24.68	-0.51	-8935912.59	-0.32

Note: n; is the number of observations. The critical values for the t-test are -1.38, -1.83 and -2.82 for the 10%, 5% and 1% confidence level, respectively.

In the first seven-day period when the stocks of the companies offered to the public started to be traded in the stock market, except for the first and fifth days, the average raw returns are positive, but the t-statistics values are not less than the critical value, so it is statistically insignificant. On the first and fifth days, mean raw returns are negative but statistically insignificant.

Average abnormal returns of stocks in the first seven-day period, except for the first, fourth and fifth days, are positive but statistically insignificant. On the first, fourth and fifth days, average abnormal returns are negative but statistically insignificant.

Average cumulative abnormal returns are negative but statistically insignificant in the first seven-day period.

Average compound returns are also negative and statistically insignificant in the first seven days.

In this case, all three null hypotheses are not rejected. In other words, based on the findings for the first seven days, it can be accepted that the underpricing phenomenon is not valid for the stocks offered to the public.

Conclusion and Discussion

The price stability of financial instruments has vital importance for investors trading in capital markets to achieve sustainable returns in the medium and long term. Although there are many macro and micro factors that ensure price stability, the main ones are preventing the use of asymmetric information, possible manipulative behaviors of company managers and investment banks in the public offering process (i.e. agency problem), macroeconomic conjuncture, interaction between investors, and investors' abnormal overly optimistic and pessimistic expectations about future price movements, and so on.

The efficient market hypothesis comes first among the hypotheses that have been put forward in the finance literature about the functioning of the markets and the investment process and are still accepted today. According to this hypothesis, stock prices contain all current and future information about that stock, and therefore there is no asymmetric information between investors. Information is shared simultaneously and fairly among all investors in the market, so that unfair competition is not in question.

686

Acıbadem Univ. Sağlık Bilim. Derg. 2022; 13 (4): 680-688

However, it is clear that stock markets do not work that way in real life. Due to the reasons explained above, some price anomalies can be seen in stock prices. These anomalies seen in the literature are defined as short-term underpricing anomalies and long-term underperformance anomalies.

The short-term underpricing anomaly assumes that the stocks to be offered to the public are valued at a lower price than their fair value, so that investors who will buy these shares from issuance will be able to make abnormal profits compared to the market in the short term.

In this study, the existence of underpricing was investigated in Istanbul Exchange health sector. For this purpose, the public offering information and the short-term price performance after the public offering of 9 companies that were first publicly offered in Istanbul Exchange in the period of 2006-2021 were examined and it was examined whether the investors could obtain a residual return above the market for the relevant period if they purchased these stocks from the issuance.

According to the results of the t-test performed on the SPPS program, the return of investors who buy the stock from the issuance and sell all these stocks after holding during the first day, the first three days and the first seven days is generally negative but statistically insignificant. In other words, it could not be statistically confirmed that the investors who bought the stocks of these 9 companies that made the initial public offering from the issuance, would be able to obtain higher returns than the market. Therefore, the null hypothesis could not be rejected and the underpricing anomaly for the analysis period and sample could not be confirmed in Istanbul Exchange.

These findings are consistent with our a priori expectations, but not with previous literature results. It was our a priori expectation that the public offerings made during the post-Covid period would not be underpriced or would be priced less, especially due to the increased health awareness after the Covid-19 global epidemic. As a matter of fact, we observed this situation in the public offerings made in 2019 and later. However, the results of the study are inconsistent with Ritter (1984), (1991), Ibbotson (1975), Allen and Faulhaber (1989), Welch (1992) and many of the recent studies. Many of these recent studies have confirmed the underpricing anomaly in initial public offerings.

Limitations of the Study and Further Suggestions

Although the analysis period is relatively wide in the study, it is not possible to generalize the results obtained due to the small number of companies in the sample. In addition, it is possible to obtain more comprehensive results with the analysis to be made on different sectors and country groups.

DISCLOSURES

Authorship

The authors of this study contributed equally to collecting data, reviewing the literature, interpreting statistics, drafting the article, and writing the final version.

Conflict of Interest

None

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Data Availability

Available upon request

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687

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688