



EMPIRICAL RESEARCH ON INVESTOR BEHAVIOR IN PRE-LISTING AND POST-LISTING PERIODS - A COMPARATIVE ANALYSIS BETWEEN THE REGULATED MARKET AND THE MTF AeRO ADMINISTERED BY THE BUCHAREST STOCK EXCHANGE

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Rezumat: Comportamentul investitorilor în jurul unei oferte publice inițiale sau plasament privat poate face diferența între o investiție reușită sau o posibilă pierdere. Prin cercetarea de față s-a urmărit corelarea comportamentului investitorilor cu posibilul discount al acțiunii acordat în cazul ofertelor inițiale. Numărul mare de companii listate la Bursa de Valori București în anul 2021(23) în raport cu anul 2020(3) denotă faptul că virusul SARS-COV2 a fost un oarecare catalizator de interes pentru investitori și companii să intre în piața de capital românească. Dintr-un alt punct de vedere, observăm o orientare accentuată a companiilor către MTF AeRO. Din totalul de 26 companii analizate, doar 3 dintre acestea au ales piața reglementată pentru tranzacționare.

Cuvinte cheie: ofertă publică inițială, plasament privat, discount-ul acțiunii, MTF AeRO, piața reglementată

Abstract: Investor behavior around an initial public offering or private placement can make the difference between a successful investment or a potential loss. Through the present research, the correlation of investors' behavior with the possible discount of the share granted in the case of initial offers was sought. The large number of companies listed on the Bucharest Stock Exchange in 2021(23) compared to 2020(3) denotes the fact that the SARS-COV2 virus was a certain catalyst of interest for investors and companies to enter the Romanian capital market. From another point of view, we observe a strong orientation of companies towards MTF AeRO. Out of the total of 26 analyzed companies, only 3 of them chose the regulated market for trading

Keywords: initial public offering, private placement, share discount, MTF AeRO, regulated market

JEL Classification: G24, G32

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1. INTRODUCTION

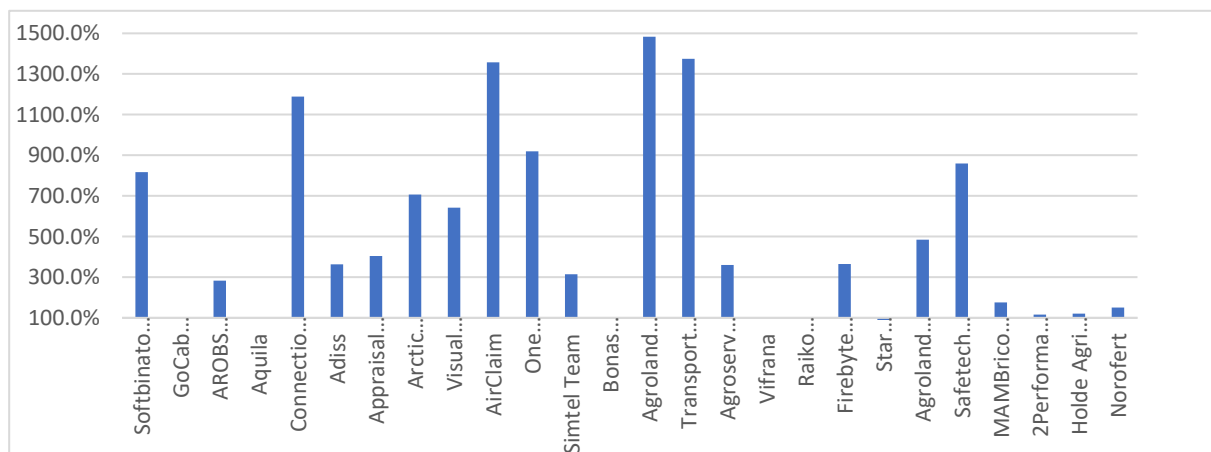
The year 2021 is considered one of the best years in history for the capital market in Romania, the upward trend being initiated in the first half of 2020 as a recovery from what the shock of the SARS-COV2 virus meant. This is reflected by the BET index, made up of the nineteen most liquid stocks on the BSE, which reached the 13,000 mark for the first time since its inception, a 33.2% increase at the end of last year from its beginning.

Not only the companies listed on the BVB experienced significant increases, as the year 2021 is also represented by a spectacular increase in new companies listed on the Bucharest Stock Exchange, where no less than 23 companies entered trading. Comparatively, 2020 brought only 3 new companies to trading. At the same time, analyzing the number of investors within the Romanian capital market, an important increase in the number of new investors of 24% (approx. 17,000 new investors) at the end of 2021, compared to the same period of 2020, can be observed here. To argue the behavior investors in the pre-listing and post-listing periods at the Bucharest Stock Exchange, in this study new companies listed in 2020 and 2021 were taken into account.

From the total of 26 companies studied, only 3 of them entered trading in the regulated market, while the remaining 23 companies chose to start their journey in the capital market in the secondary market, MTF AeRO. Listing on the Romanian secondary capital market imposes less demanding rules regarding the conditions for admission to trading but also the conditions that must be respected after admission.

The attractiveness of IPOs is often measured by the underwriting index, which indicates how willing the market is to invest in the company to be admitted to trading. The value of the subscription indices of the companies subject to research are highlighted in figure no. 1. The initial offer is a first test supported by each company through the capital market, it is about the company's ability to convince investors to deposit cash availability in exchange for the shares offered

Figure 1 - Detailed values for subscription indices



Source: Authors' projection

Investors are assumed to make the subscription decision based on a fundamental analysis of the company, being interested in subscribing in the initial offering because of the discount offered. This is, in theory, the main advantage of subscribing to the initial offer. It was discovered, however, that out of the total of 26 companies, a discount of the share price was registered in the



case of only 3 companies. This situation lends a dynamic aspect to the research, as it turns out that the main motivation behind underwriting in an IPO is not, as in theory, the stock discount.

The post-listing period at the Bucharest Stock Exchange for the companies under investigation was characterized by high volatility, especially in the AeRO market. This period was analyzed through the lens of the evolution of the share price within the initial offer in 3 key moments: the end of the first trading session, the first month from the start of trading and six months from the time the company entered the capital market. Thus, 6 months after entering trading, 14 companies registered an appreciation of their shares, at the top of the list were the shares of the Safetech Innovations company with a yield of +1460%, while the shares of GoCabSoftware registered a depreciation of -68.48%. Investors often choose to place great emphasis on post-listing financial reports in order to make buy or sell decisions, as well as the calculation of certain ratios designed to rank companies in terms of financial performance. Among them, as part of the research methodology, we chose 3 specific indicators: P/E (Price to Earnings), P/BV (Price to Book-Value), P/S (Price to Sales).

2. DEFINING THE RESEARCH PROBLEM

Judging by the high number of companies listed in the two years analyzed, especially in 2021, and the large number of investors in the market, we can say that the Romanian capital market is going through very good times. Investors' motivation to subscribe in IPOs is, however, questioned following a preliminary analysis of the IPO share price and the book value of the shares, as the share discount is often non-existent. However, most initial offers are oversubscribed.

Before subscribing to an initial offering, investors calculate what the stock's discount is. It is calculated as the percentage difference between the book value of a share and the value of the asking price in the offer. For investors to be at an advantage, this difference must be negative (i.e. the purchase price is less than the book value). To find out the accounting value of a share, it is necessary to know the company's equity, which is divided by the number of shares issued at the time before the listing. In a purely theoretical way, the privilege of participating in an initial offer and the main advantage is represented by this discount through which investors can mark a profit immediately after the listing, respectively in the first trading days. The efficient market hypothesis holds that after listing the price tends to balance with the book value, as the shares are traded at fair value on the stock market, incorporating all information known at the time.

The performance of an initial offer is also measurable with the help of two main indices that certify the success of the offer and express investors' interest in the shares issued for trading (usually a minimum of 75% of the shares issued in the initial offer must be subscribed for the success of the offer). We are discussing the subscription ratio, which is calculated as the ratio of shares subscribed to shares offered in the offer, and a value above one suggests very high interest in the share offer. In case of an oversubscription of the offer, the next step is the calculation of the allocation index, in the case of offers with pro-rata allocation. This index is calculated at the end of the subscription period and determines the number of shares belonging to each investor, being calculated as a ratio between the number of shares offered and the number of shares subscribed. The allocation index has a value between 0 and 1 and to determine the number of shares that belong

to each investor following the offer, the number of subscribed shares is multiplied by the allocation index.

3. PRESENTING THE RESEARCH FINDINGS

At the level of the two markets of the Bucharest Stock Exchange, 26 new listings were identified during the years 2020 and 2021. These were the subject of the present research and the actions taken to provide some conclusions are highlighted in the following subsections. In the first sub-chapter, an integrated approach at the market level was carried out, aimed at providing an overview of the analyzed perspectives. In the next subsection, two companies from the research sample are briefly presented.

3.1. Empirical results – integrated market approach

Carrying out a classification according to the market chosen by the newly entered trading companies, we can affirm that there is an imbalance. By definition, the secondary market (AeRO) does not require the same rigor regarding the admission conditions for trading as the regulated market: (i) there is no need for an anticipated capitalization of at least 1 million euros, only 250,000 euros, (ii) it is not necessary the preparation, publication and approval by the Financial Supervisory Authority of an issue Prospectus, (iii) the annual reports must not be prepared according to IFRS standards. The criteria listed above represent only some of the more permissive criteria of the AeRO market, which may justify the number of 23 companies listed on this market. Regarding the regulated market, the number of new companies entered for trading is 3. The classification of companies according to the market on which they are traded is represented centrally in table 1.

The IT industry is the leader in terms of the number of companies listed in 2020 and 2021 and according to the information presented in table no. 1 all 8 companies related to these industries have chosen to list on the AeRO(SMT) market, which is the share segment of the Alternative Trading System of the Bucharest Stock Exchange. In 87.5% of the private placements of IT companies, an oversubscription of the offer was registered, the highest being encountered in the case of Connections Consult, where the subscription index reached the level of 1189%. In the trading industry, 5 new companies entered trading during the research period. Within this industry, the highest oversubscription in the entire sample of the research was also recorded, namely an oversubscription of almost 15 times (subscription index 1484%) of the Agroland Agribusiness private placement held on April 15, 2021 and closed early in less than 1 minute. All 5 companies from the trade industry were listed on the AeRO market and registered oversubscriptions in the ongoing private placements. The service industry (tertiary sector) has 4 representatives who have decided to take the step towards the capital market in the last 2 years. Among them, 2 companies chose the AeRO (Appraisal&Valuation, AirClaim) market, while Aquilla and Transport Trade Services managed to meet the listing conditions on the regulated market of BVB. The highest subscription level was recorded by the Danube transport leader, Transport Trade Services, 1375% to be exact. Just like the service industry, 4 more companies were added to the manufacturing industry in 2021. In the case of these companies, the interest from investors was not at the same level as in the case of other industries, the companies Raiko Transilvania and Vifrana managing to close the private placement with 100% subscription, while Bonas Import&Export(104%) and ADISS(364%) were oversubscribed. Two new companies were added to the agricultural sector at the Bucharest Stock Exchange, Agroserv Măriuța and Holde Agri Invest. Completing the largest Initial Public Offering in Romania in the last 4 years, with a 9-fold oversubscription, One United Properties entered the top three largest entrepreneurial companies at BVB and the top ten listed companies. Together with Star Residence Invest, which did not enjoy the same success, it represents the news from the real estate sector on the Romanian stock market.



Out of the total of 26 companies, only in the case of 3 companies there was a discount of the share, (12%) of the total of listed companies, while the companies that did not offer a discount of the share in are in number 23 represent. We can therefore state that investors did not take into account the discount of the share as the main element in terms of subscriptions because, from the total number of listed companies, oversubscription was recorded in 21 cases while another 4 cases were subscribed in proportion of 100% and only one company had a subscription rate of 77%, however sufficient for admission to trading. Centralized information regarding the share discount for each company is presented in table no. 1..

The value of the subscription index of over 100% for 81% of the total companies analyzed makes us say that the attractiveness of the initial offers at the Bucharest Stock Exchange is at a high level. Investors' appetite for investment is very high, in a period of uncertainty generated by the SARS-COV2 pandemic. Based on this information presented, table no. 1 for presenting the information listed above.

Table 1 – Distribution of issuers according to share discount and subscription index

Issuer	Symbol	Market	Industry	Discount(%)	Subscription index
Softbinator Technologies	CODE	AeRo	IT	2268.51	817%
GoCab Software	CAB	AeRo	IT	1108.43	100%
AROBS Transilvania Software	AROBS	AeRo	IT	381.65	282%
Connections Consult	CC	AeRo	IT	959.01	1189%
Arctic Stream	AST	AeRo	IT	1312.98	706%
Firebyte Games	FRB	AeRo	IT	780.52	365%
Safetech Innovations	SAFE	AeRo	IT	646.24	860%
2Performant Network	2P	AeRo	IT	2417.47	116%
Aquila	AQ	Regulated	Services	544.33	100%
Appraisal & Valuation	APP	AeRo	Services	594.87	404%
AirClaim	CLAIM	AeRo	Services	624.17	1358%
Transport Trade Services	TTS	Regulated	Services	19.20	1375%
Adiss	ADISS	AeRo	Services	-0.29	364%
Bonas Import Export	BONA	AeRo	Services	223.39	104%
Vifrana	BIOW	AeRo	Services	-6.34	100%
Raiko Transilvania	RKOT	AeRo	Services	-36.85	100%
Visual Fan (Allview)	ALW	AeRo	Commerce	180.97	643%
Agroland Agribusiness	AAB	AeRo	Commerce	1381.71	1484%
Agroland Business Systems	AG	AeRo	Commerce	287.47	485%
MAMBricolaj	MAM	AeRo	Commerce	831.07	176%
Norofert	NRF	AeRo	Commerce	31.32	151%
Agroserv Măriuța	MILK	AeRo	Agriculture	228.53	360%
Holde Agri Invest	HAI	AeRo	Agriculture	14.63	120%
One United Properties	ONE	Regulated	Real-estate	52.61	920%
Star Residence Invest	REIT	AeRo	Real-estate	7.46	77%

Source: Authors' projection

The post-listing period at the Bucharest Stock Exchange for the companies under investigation was characterized by high volatility, especially in the AeRO market. At the end of the first trading session, 17 of the total of 26 companies were recording a share price appreciation compared to the private placement or the initial offer. Safetech Innovations managed to achieve a return of +505% on the first day, and in opposition to this appreciation we find the shares of GoCab Software with a depreciation of -55.81% at the end of the first day of trading. One month after the listing on the Bucharest Stock Exchange, the number of shares with a positive return from the total of 26 companies remains the same as on the first day, 17 to be exact. At a time horizon of 6 months, 14 are companies trading at a price higher than the price of the initial offers. SAFE's stock price continues to top the stock appreciation chart with a return of +1460% over the private placement price while GoCab Software's stock is down 68.48% 6 months after entering trading.

Within table no. 2, the values of the calculated post-listing performance indicators are highlighted, with the help of green (performing) and red (non-performing) pastel colors, the ideal values within each industry, from the total number of companies subject to research

Table 2 – Post-listing indicators with delimitation by industry

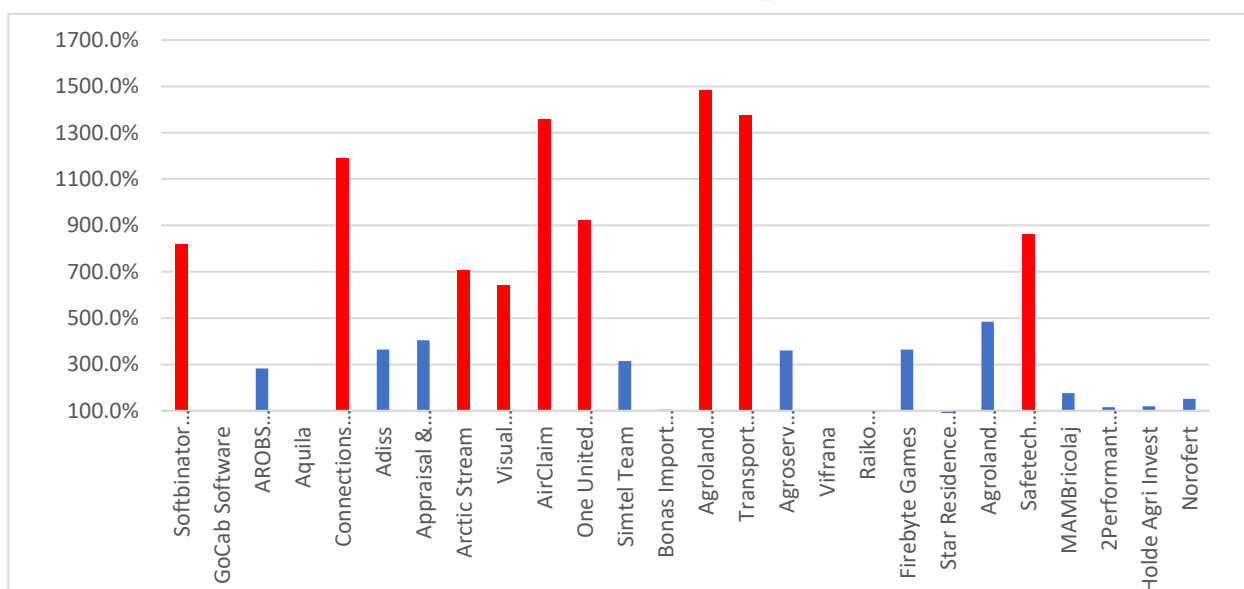
Industry/Issuer	P/E	P/BV	P/S
IT			
Softbinator Technologies	49.56	27.23	9.04
GoCab Software	N/A	1.31	180.73
AROBS Transilvania Software	18.41	4.90	4.59
Connections Consult	19.19	4.17	1.30
Arctic Stream	104.29	11.56	8.07
Firebyte Games	N/A	15.34	28.48
Safetech Innovations	10.73	6.99	2.43
2Performant Network	N/A	6.82	12.66
Services			
Aquila	2.22	0.28	0.08
Appraisal & Valuation	31.17	1.90	1.83
AirClaim	N/A	5.08	7.11
Transport Trade Services	10.60	1.26	1.17
Manufacturing			
Adiss	17.39	0.55	0.39
Bonas Import Export	97.02	1.03	0.85
Vifrana	N/A	1.72	4.00
Raiko Transilvania	20.53	1.71	1.16
Commerce			
Visual Fan(Allview)	16.12	1.56	1.12
Agroland Agribusiness	16.00	3.59	1.14
Agroland Business Systems	30.26	1.82	0.31
MAMBricolaj	56.12	20.20	37.50
Norofert	N/A	4.71	8.74
Agriculture			
Agroserv Măriuța	8.64	1.94	0.62
Holde Agri Invest	N/A	14.72	27.32
Real estate			
One United Properties	6.52	2.01	4.72
Star Residence Invest	N/A	1.93	3.59

Source: Authors' projection

3.2. Empirical results – issuer case studies

As it was found, following the presentation of the integrated approach at the market level, out of the total of 26 companies that make up the research sample, there was an oversubscription in respect of 21 of the companies. Of these, 9 companies registered a subscription index greater than 500%. In the second stage of the research, we customized the methodology for the companies included in this underwriting area. The companies chosen for the second part of the research are highlighted in figure no. 2, the unique criterion being provided by the value of the subscription index.

Figure 2 – Highlighting subscription index values



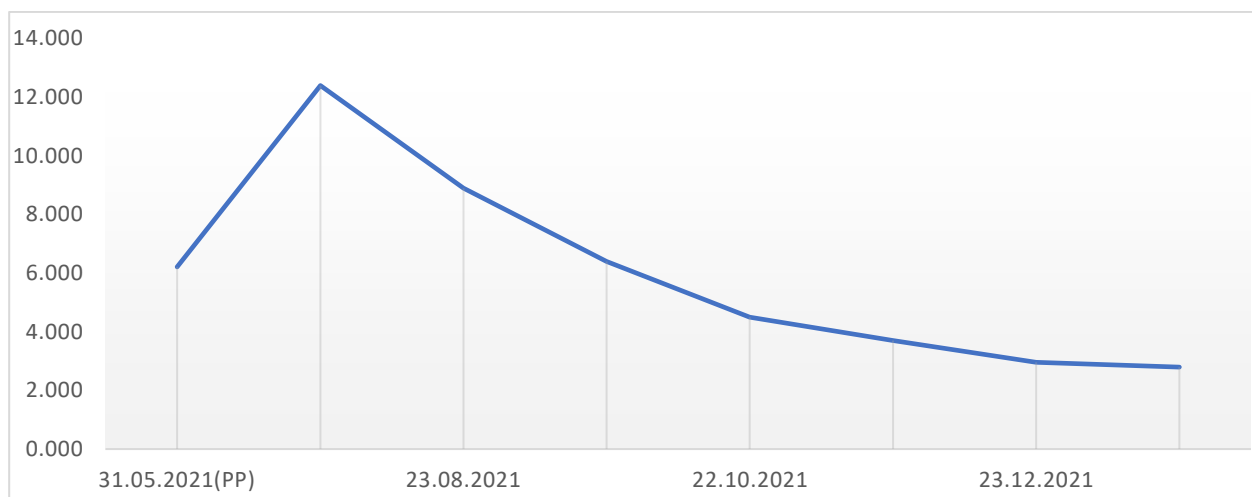
Source: Authors' projection

The latter are subject to a more detailed analysis in order to determine the factors that led to oversubscription of the offers more than 5 times. As part of the research, the subscription index, the allocation index, the company's free-float are presented in a particular way, and in order to identify the attractiveness of these companies and after the moment of listing, graphs were created with the evolution of the share price for a period of 6 months after the listing. At the same time, based on the closest financial reports from the sixth month of trading at the Bucharest Stock Exchange, specific indicators per share were calculated, intended to provide an image of the company's performance and attractiveness after a period of accommodation on the Romanian stock market.

Among the 9 companies subject to research in the second part of the conducted study, 2 companies will be presented in detail that attracted attention in particular due to the value of the high subscription index and the evolution of the share price in the post-listing period. The detailing of a company from the AeRO market and a company from the regulated market was chosen to observe the possible differences encountered in the two segments of the Bucharest Stock

Exchange. It is about the company AirClaim(BSE:CLAIM) listed on the secondary market and the company Transport Trade Services(BSE:TTS) listed on June 4, 2021 on the regulated market.

Figure 3 – CLAIM share price evolution in the first 6 months after listing



Source: Authors' projection

AirClaim (BVB:CLAIM) is a Romanian company that specializes in the provision of brokerage services and facilitates obtaining the compensation that air passengers are entitled to receive due to the cancellation or delay of their flights. On 31.05.2021, through Goldring, AirClaim closes in advance the private placement offer by which it offers 400,000 newly issued shares. The private placement was closed in record time for the entire Romanian stock market, no less than 6 seconds were needed for the placement to be oversubscribed. In the end, the value of total subscriptions reached the level of 33.74 million lei, which is an oversubscription index of 1358%. The irrational behavior of investors is highlighted by the index underwriting at a record value associated with a negative discount of 624%. Shortly after the conclusion of the private placement, the first day of trading in the share market segment of the Alternative Trading System of the Bucharest Stock Exchange came. At the end of the first trading session, AirClaim continues to break records, after those set in the private placement, managing to end the trading session on 23.07.2021 at a price of 12.40 lei/share, representing a 100% increase compared to the private placement price. Investors have sustained their enthusiasm for CLAIM stock. After the first month, AirClaim shares closed on 23.08.2021 at the price of 8.90 lei/share, which is a decrease in price compared to the first day, but a 43% advantage compared to the price of the private placement. What followed in the next 6 months is a consequence of the irrational behavior of investors, CLAIM shares ending up being traded at the price of 2.79 lei/share at the end of the trading session on 21.01.2022, which is a 55% regression compared to the price private placement. The calculated post-listing indicators provide an explanation of the share price evolution. The P/R indicator has a negative value, with the company recording a loss at the end of 2021. The P/BV of 5.08 and P/S of 7.11 indicate a completely unattractive company for investors, a fact that also emerges from the evolution of the share price, highlighted in figure no. 3.

Transport Trade Services (BSE: TTS) is the largest freight transport company on the Danube and at the same time one of the most important carriers in Romania. The company provides integrated logistics services, from freight forwarding, to river transport and other port operations



as well as other related and ancillary activities. The company was listed on the Regulated Market and the Initial Public Offering took place between 24.05.2021 and 04.06.2021, the company offering for sale 50% of the company's shares, i.e. 15,000,000 shares. The Public Offer was successfully concluded, the final price of the offer being 19.2 lei/share. The final size of the installments is highlighted in table no. 3.

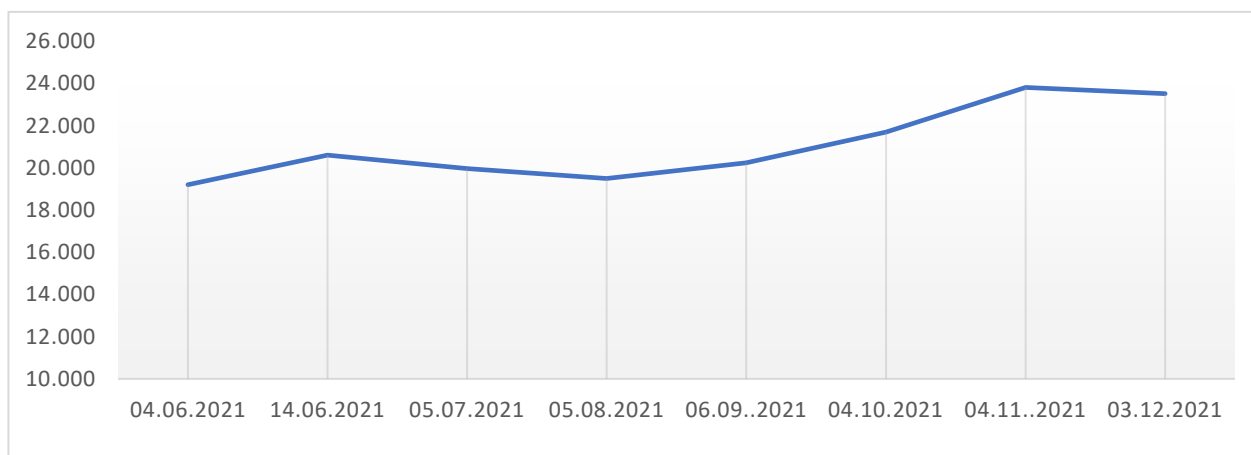
Table 3 - Tranche sizes within the Transport Trade Services Initial Public Offering

Final Tranche Size	Allocated quota	Number of new shares
Institutional Investor Tranche	80%	12,000,000
Retail Investors Tranche - Sub Tranche A	10%	1,500,000
Retail Investors Tranche - Sub Tranche B	10%	1,500,000
TOTAL	100%	15,000,000

Source: Authors' projection

The net book value of a TTS share, calculated based on the financial results at the end of 2020, is 16.10 lei/share, which means a relatively small difference between it and the price of the initial offer. TTS shares entered trading 10 days after the end of the IPO, precisely 14.06.2021. The correct assessment of the price has made the evolution of the price of TTS shares one without large oscillations. Thus, at the end of the first trading day, TTS was traded at the value of 20.60 lei/share, representing a percentage increase of 7.29% compared to the initial price. After one month on the main market of the Bucharest Stock Exchange, the closing price for the shares of the Romanian carrier was 19.96 lei/share. At the beginning of 2022, 6 months were completed on the stock exchange for TTS and the closing price on the 3rd day of 2022 was 23.50 lei/share. The evolution of the share price can be seen in figure no. 4.

Figure 4 - TTS share price evolution in the first 6 months after listing



Source: Authors' projection

This evolution is also supported by post-listing indicators calculated based on the financial position at the end of 2021. The calculated P/R indicator is 10.60 and expresses the number of years in which investors can recover their investment and at the same time the amount of money that must pay it as an investor to get monetary units from the profits of the company. P/BV is 1.26 while P/S is 1.17, which indicates an attractive company for investors.

4. CONCLUSIONS

Looking at the results of empirical research at the integrated level of the market, no natural link can be established between the discount of the share and the subscription rate, as a very high interest of investors could be observed for public offers or private placements despite the absence of a price for sale lower than book value. The AeRO market offered an impressive number of new listed companies but at the same time a much higher volatility compared to the regulated market, which manages to provide more confidence to investors through the more rigorous standards required to enter trading as well as reporting conditions to maintain within this market.

Future research perspectives of this paper could consist of conducting an online questionnaire to outline the investor's motivations in the subscription decision as well as tracking the positive/negative news that appears about a company during the pre-listing period. At the same time, I think it would be useful to correlate the influence of financial reporting and negative/positive news in the post-listing price of companies.

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