ANALYZING THE MARKET CONCENTRATION OF THE ROMANIAN CAPITAL MARKET

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ABSTRACT

Designing and using measures for assessing the market concentration, these are the central elements of competition and sectoral authorities's strategies, whose main objective is guarding a ballanced competition environment. In this article, we use monthly data from January, 2007-August, 2015, in order to analyse the market concentration of the Romanian capital market. By computing the concentration ratios for the first 4 and 8 largest intermediaries and the Herfindahl-Hirschmann index (HHI), we find that the Romanian capital market is not (yet) concentrated. But the recent trends show early phases of concentration, fact determined by the decrease of the number of intermediaries and the increased concentration of the trading activity at the level of the first 8 brokerage houses.

KEYWORDS: *capital market, market concentration. concentration risk, HHI index.*

JEL CLASSIFICATION: *C13, C18, G24.*

1. INTRODUCTION

Almost 25 years after the relaunching of its main trading venue, Bucharest Stock Exchange (BSE), the Romanian capital market is still in early phases of development. The development of the Romanian capital market was characterized by periods of euphoria, especially during the times after the relaunching of the BSE, that lead to an increase in the number of active intermediaries on the Romanian capital market. After the financial turmoil, the number of active intermediaries decreased significantly, as a direct consequence of a daily average turnover that was less than 12 million euros, with minimum values around 2 million euros (reached also in 2015). The shrinkage of the trading activity and the number of intermediaries lead to a reduction in competition between the participants in the brokerage services' market. In this article, we use statistical methods to assess the concentration of the Romanian capital market, namely the concentration ratios and the Herfindhal-Hirchman index, applyed to the data reflecting the monthly trading volumes between January, 2007- August, 2015, for the active intermediaries on BSE. We find that the brokerage services' market is not yet a concentrated one, but the recent dynamics indicate an accentuated tendency of concentration, due to the reduction of the number of intermediaries and the increase of the cumulated activity of the top eight intermediaries.

2. MARKET CONCENTRATION ANALYSIS: SOME EMPIRICAL ELEMENTS

The increasing economic activities and the fostering of worldwide commerce lead to the occurence and consolidation of the markets for certain products/services, where companies and participants

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are acting in order to maximize their revenues and profits. Some of the methods they use in pursuing the strategy of maximizing their profits are detrimental to the clients and the other participants, that generated the necessity of some state/governmental authorities aimed to supervise the operations of the companies. As such, these authorities - that aims to protect the competition environment on these markets – passed and implemented specific measures to limit the dominance of a company over the market as a whole. For example, in 1890, the US Congress passed the Sherman Act („Competition law"), that defined the activities considered by the federal authorities as being non-competitive practices. Starting from this point, the authorities from almost all over the world have adopted measures that aims to protect the competition in very diverse economic fields, setting the grounds for the regulating and controlling bodies in the competition field.

In this regard, the basic tools used to assess the competitiveness of a specific market are the concentration ratios and the Herfindahl-Hirschmann index (HHI). Using some simple computations, we obtain specific values for these indicators, based on which we can infer the degree of the market concentation.

So, for a market consisting of N players, we denote by S_i the market share to each of the N companies (and, therefore, the sum of all the companies' market share is equal to 1). The most widely used concentration ratios are those equal to the sum of the market shares of the first four and to the first eight companies, denoted as CR4 and CR8. The computed value is then compared with some threshold, according to which the degree of the market concentration is assessed. For instance, if the calculated CR4/CR8 is between 0% and 50%, it is said that the market has a low degree of concentration (the extreme events being the ones where the result is 0%, meaning a perfect competition, or 50%, that is an indication of the occurence of an oligopol). If the calculated CR4/CR8 is between 50% and 80%, it is said that the market is medium concentrated, and if the calculated CR4/CR8 is between 80% and 100%, the market is concentrated (the extreme case occrus when the value is 100%, meaning a highly concentrated oligopol, or monopolistic situation).

The main advantages of the concentration ratio indicator of the market concentration derive from its simplicity and straightforwardness: only 4 or 8 weights are needed to calculate CR4 and CR8, respectively. But this indicator doesn't take into consideration all the weights of the companies from the analyzed market, a fact that can impede a comprehensive assessment.

We define HHI as the sum of the squares of the market-share S_i of each company operating on a market, so the HHI is given by the formula $HHI = \sum_{i=1}^{N} S_i^2$. The computed values is then compared to some thresholds, according to which we can say the market has different degrees of concentration. If the HHI value is in the interval (0,100), it is said that the market is competitive, and when the value is in (100, 1500) interval, the market is not concentrated. When the calculated value is in (1500, 2500), it is said that the market is moderately concentrated, and when the value is biggers than 2500, the market is highly concentrated.

Beside its straightforwardness, the HHI index has the advantage of using all the data available, consisting of the weights of each company from the market. Also, by considering the squares of individual weights, the HHI index emphasises more heavily the market shares of the largest companies. The HHI index has also some important disadvantages, such as the difficulty to interpret the results (*as the interpretation should be related to some standard market practices or metrics*) or the limited nature of the calculation (*by not considering the specific factors influencing the weights or the respective market*).

Some other measures aiming to assess the market concentration were applied, such as the Hall and Tideman Index (1967), the Entropy Concentration Index, defined by Jacquemin (1975), or the measure used the Beck, Demirguc-Kunt and Levine (2010), as well as some specific models, such as Panzar-Rosse (Bikker, Shaffer and Spierdijk, 2009).

The competition and supervision authorities use the data collected from different markets in order to assess the concentration of the companies operating on these markets (Mahajan, 2006). By analysing these results, proper measures for market consolidation and fostering the competitive

environment are derived. Some of them involve limitting the development of the main compettitors in the market or by downsizing/eliminating the entry barriers, thus facilitating the access of new competitors in the market. These analysis are usefull to evaluate the impact on the market stability given by the exit from the market of one of the dominant companies and to adopt measures aimed to reduce the systemic risk (Cetorelli, et al. 2007).

These indicators are used to assess the competition on every market, either financial markets of a group of countries (*for example, the credit risk evaluated by the Bank of International Settlements in 2006, Beck, Demirguc-Kunt and Levine, 2010*) or a specific country (*as the case for Germany, 2006*). As such, using the market concentration indicators, the authors present assessments of the financial sectors in various countries (*Germany, Belgium, France, countries from Latin America etc.*), in terms of their stability and profitability. For example, using the data from German credit register, the German Bundesbank found out, in its June 2006 monthly report, that the single-name concentration risk (*i.e. the firm-specific risk in a credit portfolio which arises from the credit risk of large borrowers*) for German banks lead to an increase in the Value-at-Risk ranged between 3% and 8%. Moreover, a study of Standard&Poor's made in 2004 on the concentration of the credit portfolios of the 100 largest European banks (*from Italy, Portugal, Germany, Scandinavia, Spain, France, Switzerland, Austria, Benelux, United Kingdom and Ireland*) found that the median concentration was about 6.6% (*with a minimum of almost 4% for UK and Ireland and a maximum of almost 12% in Italy and Portugal*).

In the case of Romania, these methods are used by the Competition Council in order to find and assess economic concentrations, that are derived from mergers and acquisitions occured in some economic sectors (*such as oil and gas, telecom, or financial sector*). In this regard, some indicators, such as the number of active companies, the degree of concentration, innovations or transparency of the sector, are considered (Prisecaru and Paun, 2013). Similar papers were written by Cioacă (2015) or Buşu (2012), related to the Romanian financial sector. For example, Cioacă (2015) used the annual data for the Romanian capital market and found that the market for brokerage services is not yet concentrated, but the recent trend shows that the market entered on the concentration pace. Also, using the data available for 2009-2011 time frame, Busu (2012) found that the Romanian insurance sector is not concentrated.

3. THE ANALYSIS OF THE ROMANIAN CAPITAL MARKET CONCENTRATION

The Bucharest Stock Exchange, the main venue of the Romanian capital market, reopened its operations in 1995, with only 9 issuers available and 28 intermediaries. The reforms of the Romanian economy, especially the privatisation of state-owned companies through the Mass Privatisation Program, increased the interest of the Romanian and foreign investors for the Bucharest Stock Exchange. As a consequence, the average daily turnover on the Bucharest Stock Exchange increased significantly, by the beginning of 2000.
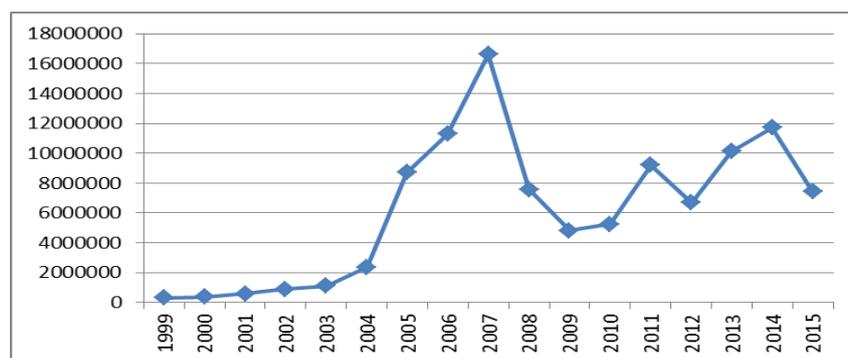

Figure 1. Daily average turnover on the Bucharest Stock Exchange (eur, 1999-2014)
Source: own calculation, www.bvb.ro

The daily average turnover was characterized by a significant increase starting 1999, as a consequence of the Mass Privatisation Program and the interest of the Romanian investors. Once the Romanian authorities began the negociations for the accession to the European Union and the progress achieved (*the Romania's accession to the European Union, beginning January 1st 2007*), the foreign investors became more interested in the domestic capital market, resulting in a significant increase in the daily average turnover. The financial turmoil had a direct negative impact on the daily average turnover, as the level of this indicator decreased fourfold during 2007-2009. The recovery started in 2010 lead to an accelerated increase in daily average turnover, but the maximum values registred in 2007 were not yet reached, even though - during 2011 - 2014 – important issuers were listed on the BVB (*such as Fondul Proprietatea, with 4 billion euro assets under management, or Electrica, as a result of an IPO of more than 400 million euro*).

The reopening of the BSE's operations drew the attention and interest of many investors and local entrepreneurs, that invested in establishing intermediaries on the capital market. Although in 1995 only 28 intermediaries were running operations on the BSE, during the following 3 years, their number surged, to a historical maximum of 173, reached in 1998. The occurence of the economic crisis in Romania during 1998-2000 lead to a major decrease of the number of intermediaries, to levels below 100, a value that was fairly stable during 2002-2008 time frame. For example, in 2007, the most active year on the BSE (when the maximum daily trading values were reached), the were operating 73 intermediaries on the BSE.
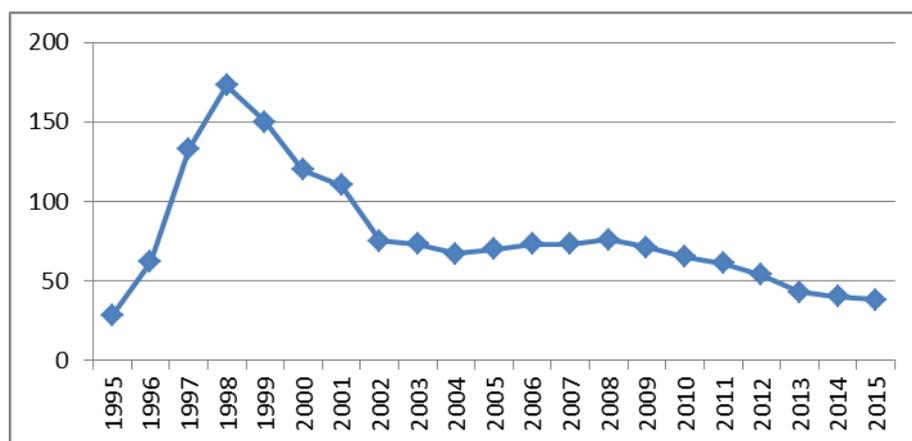

Figure 2. Number of intermediaries on the Bucharest Stock Exchange (1995-2014)
Source: own calculation, www.bvb.ro

After the financial crisis that started in 2008, the revenues from trading activity of the brokerage houses operating on the BSE plummeted, as the daily turnover was shrinking, that lead to a continuing decrease in the number of active intermediaries, to 38 in August 2015.

The decrease in the number of active brokerage houses on the BSE resulted in a concentration tendency for brokerage market. To assess this, we use monthly data reflecting the intermediaries' activity on the BSE for January, 2007- August, 2015 time frame, as reflected on the market operator's website (www.bvb.ro).

With the collected data, we calculate the concentration ratios CR4 and CR8, representing the cumulative market share of the first 4 and respectively 8 largest intermediaries, as measured by their percentage of monthly trading activity. The Figures 3 and 4 plot the calculated values for CR4 and CR8, showing an increase in market concentration, especially at the end of the analysed interval.
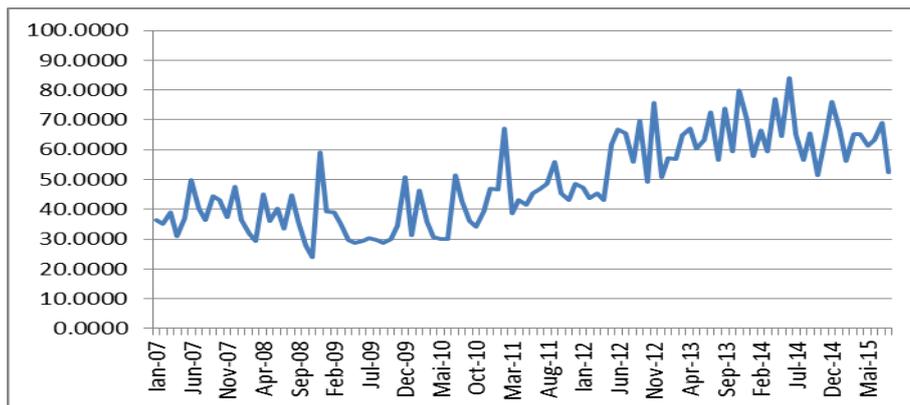
Figure 3. The concentration ratio CR4 for the 4- most active intermediaries on the Bucharest Stock Exchange (January, 2007-August, 2015)
Source: own calculation, www.bvb.ro

Analysing the values for CR4, we can find that, during the economic crisis that began in 2008, the concentration ratio decreased (*meaning that the market became less concentrated*), especially during the year of 2009, showing an improvement in the competition at the level of the brokerage market. But starting 2012, the brokerage services' market became more concentrated, as can be seen by the increased values of CR4, close to the 80% threshold (beyond that level, the market is being said is highly concentrated).
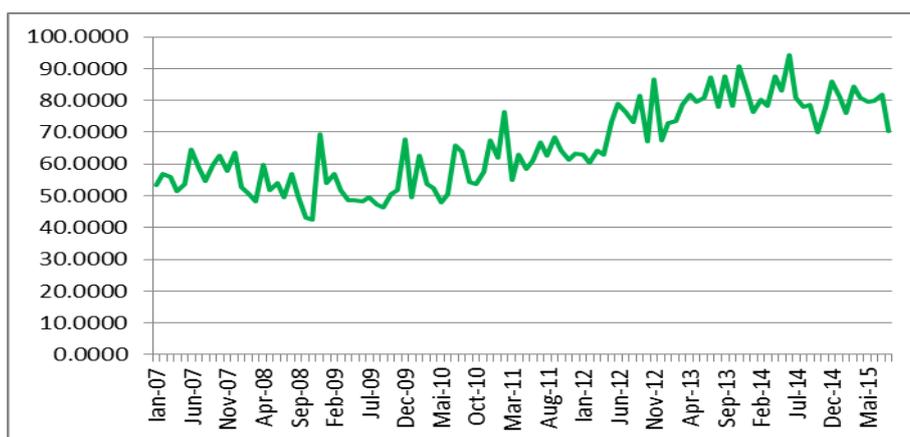

Figure 4. The concentration ratio CR8 for the 8- most active intermediaries on the Bucharest Stock Exchange (January, 2007-August, 2015)
Source: own calculation, www.bvb.ro

Also the CR8 indicator shows an increasing competition during the 2009 year, as the trading activity on the BSE was faltering and the number of active brokers was decreasing (*with almost 11% between 2008 an 2010, from 73 intermediaries to 65*).

After 2010, a concentration process can be seen, as the CR8 measure surpassed the 50% threshold and, during 2014, it was above the 80% threshold, a level at which the market is considered to be concentrated.

Using the collected data, we also compute the HHI index for the January, 2007 – August, 2015 time frame, finding that these values range between a minimum of 344.6784 (*in November, 2008, at the peak of the economic crisis*) and a maximum of 3238.075 (*in November, 2012*).
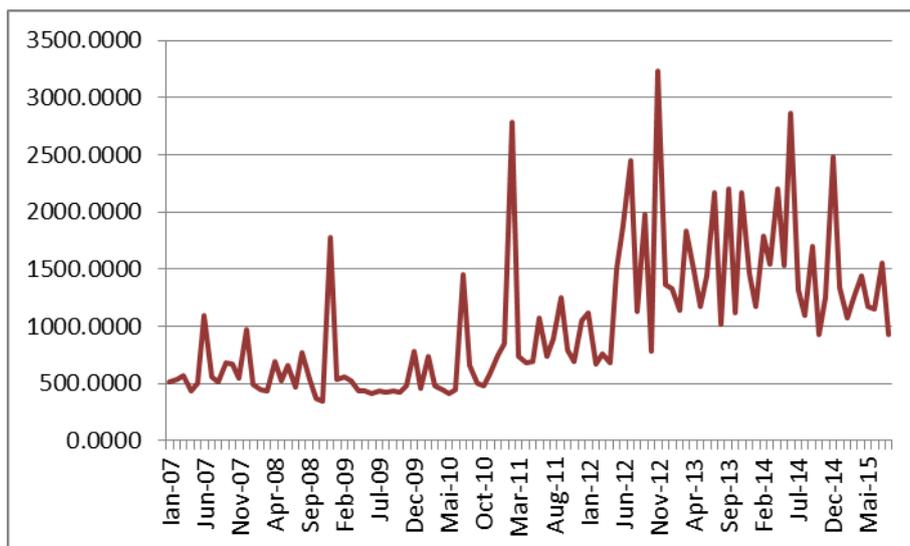
Figure 5. HHI index for the intermediaries on the Bucharest Stock Exchange (January, 2007-August, 2015)

Source: own calculation, www.bvb.ro

By considering the HHI index, we can conclude that the brokerage market in Romania is not yet concentrated. We observe that, using the HHI index, the January, 2007 – August, 2015 time frame can be separated in two subperiods, as considering the trend in the market concentration:

- during January, 2007 - May, 2012, the degree of concentration in the brokerage market was fairly stable and the market was not concentrated, although some peaks were present (*in December, 2008 or February, 2011*), mainly due to the economic crisis occurence;

- starting June, 2012, as the number of intermediaries decreased to 38 (*in August 2015, from 65, at the end of 2010*), the brokerage market become more concentrated (*in some months, the market was highly concentrated*).

Moreover, starting 2014, the brokerage services market entered on a path of accentuated concentration, as can be seen by the high values of the HHI index attained that year.

4. CONCLUSIONS

Using the monthly data for January, 2007- August, 2015, we analysed the concentration of the brokerage services market on the Bucharest Stock Exchange. In order to conduct the analysis, we considered the trading activity of each intermediary and their percentage of the total monthly trading activity (*or market share for every brokerage house*). We calculated the concentration ratios CR4 and CR8 for the first 4 and 8 most active intermediaries and the HHI index. Analysing these indicators, we find that the brokerage services' market is not yet concentrated, but, after 2010, a concentration trend was seen, at an accelerated pace. This trend is due, mainly, to the decrease in the number of active intermediaries on the Bucharest Stock Exchange and to the small achievements in the consolidation of the Romanian capital market process.

These results can be helpful to a wide range of users, such as the competition and supervision authorities, individual or institutional investors, interested in obtaining an insight on the Romanian capital market. The results are the starting point for future research in assessing the impact on the market stability induced by the increased concentration in the brokerage services market, in order to find out some trigger events/levels of the calculated values for the concentration indicators.

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