Introduction

During the last financial crises, a wave of criticism fell on credit rating agencies. These institutions were alleged to be too late in responding to the actual market situation and of disregarding adverse changes in the issuer financial condition. As a result, it may be questioned whether the information about the credit ratings changes published by the mentioned institutions has a significant influence on the financial market.

Manso (2013) suggested that agencies are often criticized for being biased in favour of borrowers. As a result, they are too slow to downgrade credit ratings. The mentioned situation introduces confusion on the financial market. As a result, he proposed a model that takes into consideration the feedback effects of credit ratings. He found out that credit rating agencies (CRAs) should focus on the probability of survival of the issuer, not only on the accuracy of credit ratings proposed by the mentioned institutions. Even if CRAs pursue an accurate rating policy, the multi-notch downgrades or immediate defaults may occur in response to small shocks to fundamentals. It is also observed that the increased competition between the credit rating agencies, can lead to rating downgrades, increasing default frequency and reducing welfare.

Almeida, Cunha, Ferreira and Restrepo (2016) analysed the impact of sovereign credit rating downgrades on firm investment and financial policy. They found that the downgrades lead to decreases in investment and leverage of firms that are at the sovereign rating bound, relative to otherwise similar companies below the bound. Their findings suggest that public debt management generates negative externalities for the private sector and real economic activity. Credit ratings are taken into consideration during decisions taken about investment and analysing costs and benefits associated with different rating levels (Kisgen, 2006-2007; Kisgen and Strahan, 2010). The rating levels determinate decisions of First, ratings can affect whether institutional investors such as banks or pension funds are allowed to invest in securities. The mentioned changes have an influence on the capital requirements of banks and insurance companies. The credit rating

announcement suggests the credit quality of the listed institutions. Graham and Harvey (2001) find that credit ratings determine the capital structure.

The introduction the Moody's Investor Service into financial market and credit ratings proposed by them, contributed to an increase an investment of securities of firms that did not have a credit rating before 1995 (Sufi, 2009). The analysis of the impact on the debt of the rated institutions has been prepared by Lemmon and Roberts (2010). They found that the structure and the dynamic of the capital strictly depends on the financial cycle. The receiving of the credit rating by junk rated firms decreases the investment on their securities more than in the case of those that do not have credit rating notes. Tang (2009) emphasised on the other hand that the having the credit ratings increases in debt and investment of upgraded firms versus downgraded firms.

The presented research suggest that credit rating changes should impact on the prices of the securities on the financial market. As a result there have been prepared researches connected with the mentioned changes on the CDS spreads (Hull, Predescu and White, 2003; Norden and Weber, 2004; Gantenbein and Harasta, 2012; Grothe, 2013), bonds (Reisen, von Maltzan, 1999; Kraussl, 2000; Steiner, Heinke, 2001; Baum, Karpava and Schafer 2013) and share prices. The last of the mentioned type of securities will be analysed in this article.

The last trends in the European Union regulations connected with the credit rating agencies activity relies on the reduction of the oligopoly of the three biggest credit ratings agencies: Standard &Poor's, Fitch and Moody's Investor Service. The proposed regulations are based on the classification of the CRAs into the small and big ones. As small ones have less than 10% of the total market share. The mentioned changes are going to introduce the obligation to have at least two notes, where at least one will be given by the small CRAs. As a result it can be questioned if the credit ratings proposed by the less recognizable and smaller credit rating agencies will be important in taking decisions by investors.

The presented researches and practical analysis of the financial market encouraged to bring the goal of the article, that is to analyse the impact of credit ratings

changes on the rates of return of banks' shares taking into account the level of economy development and the political divisions. There are put the following hypotheses: The banks' share prices react stronger on the credit rating changes in developed economies. The strongest impact of the banks' credit rating changes is observed for a downgrade both in developed and developing economies. The banks' share prices are more sensitive on the credit ratings proposed by the recognizable credit ratings agencies. As a result the analysis has been prepared based on the data from years 1980 to 2015 for 24 European countries by using the event study methods. Data for the analysis have been collected from the Thomson Reuters Database. As a dependent variable are taken into consideration daily differences between the logarithmized rates of return of banks' shares. As independent variables are threaten long term issuer credit rating changes proposed by small and big recognizable credit rating agencies. To the best of the author's knowledge, research on the impact of changes in credit ratings offered by the small agencies have not been presented before.

The remainder of the paper is organized as follows. Section 2 presents the literature review of the impact of credit rating changes on the abnormal rates of return of shares. The section 3 is the data and descriptive statistics, including the methodology analysis. Section 4 describes the results of exploring the relation between rating changes and changes in share prices. It also tests for the differences between the impact of downgrades and upgrades, between the political and the level of the economic development, as well as discussing them. The last part are conclusions.

1. Literature Review

The current researches focuses on the impact of the credit ratings changes on the securities like bonds, CDS, shares and interest rates or exchanges rates. In the paper has been analysed the impact of banks' credit rating changes on the abnormal rates of return of their share prices, taking into account the place of the banks' activity (especially the level of the economic development and the political divisions) and the size of the credit rating agencies. The researches about the impact of the announcement of notes can be divided on the following groups:

- connected with the impact of credit rating changes on the share prices,
- analyses the impact of the watch list of credit ratings changes on the shares market,
- verify the influence of the adjustment of credit rating changes on the shares market,
- the moment of reaction (before, during and after the announcement moment) of the abnormal rates of return of shares,
- the reaction on the upgrades or downgrades of credit ratings.

Griffin and Sanvicente (1982) investigated the stock price reaction to credit rating changes proposed by Moody's and S&P's from 1960 to 1975. They analysed 180 credit rating changes. They used an event window of one year and explore the price changes eleven months preceding the credit rating change and the month during the event, before the event and also the month after the event date. As a result they have taken into consideration the monthly abnormal stock returns. The result received by them, suggests that the significant impact of the upgrades of credit ratings is not observed, but financial market reaction is negative after downgrades. The event window taken by them was too big, because financial markets react faster on the publication of significant information. The daily rates of return have been taken into analysis by Holthausen and Leftwich (1986). They have analysed 1014 credit rating changes between years 1977 and 1982, proposed by Moody's and S&P. They verified also the impact of 256 credit watches proposed by S&P. They found that the significantly negative reaction after downgrades is observed, but no significant abnormal performance for upgrades. The next analysis has been proposed by Hand and others (1992). They also confirm the significant impact of the downgrade of the credit ratings on the share prices. Goh and Ederington (1993) analysed the daily abnormal stock returns as an effect of Moody's credit rating changes during 1984 – 1986. They observed the significantly negative returns for downgrades due to earnings deterioration and positive abnormal returns for downgrades due to increased leverage.

Matolcsy and Lianto (1995) explored the impact of rating reviews in Australia proposed by Standard & Poor's from 1982 to 1991 by using weekly stock price data. The results show that only bond rating downgrades contain significant

cumulative average abnormal returns. Barron, Clare and Thomas (1997) concentrates on the credit rating changes on the UK stock prices by using daily data for years 1984 to 1992. They observed the significant impact of the downgrades and credit watch announcements. The results also suggest that the profits of companies having a credit rating do not come in the way of significant decreases in the cost of equity capital. Elayan, Hsu and Meyer (2003) investigated credit rating changes announcements for New Zealand companies. They have observed that for New Zealand market the significant impact is from upgrades and downgrades of credit ratings. They conclude that a credit rating change contains information for investors in a small and possibly neglected market. Linciano (2004) analysed stock price returns to credit rating changes proposed by the three biggest credit rating agencies for Italian listed companies for a sample of 299 credit rating changes. He divided the full sample into the subsamples according to the direction of the credit rating changes, the presence of concurrent news, the sector of the issuer. Significant abnormal returns are observed for negative watches and for downgrades. Linciano also found that the negative abnormal returns are lower for financial firms than for other companies. Poon and Chan (2007) analysed the Chinese market by taking into consideration the size of the company and the sector. Hun Han et al. (2008) examined stock market reactions to credit rating changes in emerging market countries included in the MSCI Emerging Market Index. They found there exists cumulative abnormal returns both for downgrades and upgrades.

The first researches based on the banks' credit ratings has been prepared by Schweitzer and others (1992). They investigated whether ratings changes are different for banks. They have assumed that banks react in a different way on the credit ratings changes than corporates, because they are well supervised. They also suggested that the high level of the regulation can increase the public information available for the financial market. Their results show small significant impact on stock prices around the announcement of credit rating changes. The rates of return as a result of the downgrade of credit ratings are lower of 1.5 % and this compared with pre-announcement excess returns in the order of 10-20%. The upgrade results higher rates of return by 1%. The bank regulators do hold back negative information, and that bond rating agencies have a role in generating adverse information about banks to the capital market.

The next researches were proposed by Gropp and Richards (2001), who investigated European banks' rating change announcements by three biggest agencies for 186 events from the period 1989 to 2000. They found that the information about the upgrade of credit ratings causes the increase the abnormal returns of 1.2% on the announcement day and 1.5% in the 3-day event window.

Bremer and Pettway (2001) studied the effect of downgrades for Japanese banks on share prices. They suggested that during the event window and the post-event window the significant abnormal returns are not observed. Only for the long period of time, because by taking the mean from 2 years, were negative and statistically significant of the impact of downgrade of credit ratings at 20.6%.

Calderoni and others (2009) analysed the Moody's banks' credit rating changes on stock markets for the period 2002 to 2007. The findings illustrate significant cumulative abnormal returns for downgrades in a two day window and during the event window. The upgrades do not influence significantly on the abnormal rates.
Existing research shows that abnormal return performance for smaller companies (e.g. Bernard and Thomas, 1990; Fama, 1998). Han, Shin and Reinhart (2008) conducted a multivariate regression and found no significant results for the company size effect.

Kräussl (2003) analysed the impact of the credit rating changes on the rates of return of shares during the financial crisis. As a financial crisis he took the Asian crisis of 1997-1998 and he checked how the information published in the mentioned time impacted on the stability in emerging market economies. In the case of the downgrade of credit ratings, credit watches and rating outlooks a stronger impact than positive adjustments is observed. He also received the result according to which the emerging economies react weaker on the credit rating changes. The analysis of the impact of credit rating changes in GIIPS and BRIC countries during the European Sovereign Debt Crisis of 2009-2013 has been proposed by Paterson and Gauthier (2013). They found that the negative reviews impact more significantly than actual downgrades. The upgrade of credit ratings are unimportant for the abnormal rates of return. The S&P's announcements carry more weight in the stock markets than other notes proposed by Moody's and Fitch

Investor Services. The analysis also shows an evolution of the CRA's impact throughout the crisis, with decreasing effects towards the second half of the period of interest.

Hiu, Nuttawat, Puspakaran (2004) observed that the rating assignments, positive outlooks and affirmations announcements influence on the share prices in the long-term and short-term. There is a significantly positive (negative) market reaction to the upgrade (downgrade) announcements. For the downgrade and negative outlook announcements, the short-term returns show no significant reaction but long-term returns show a significant negative response. In a small but liquid stock market like the Swedish share market, credit rating agencies only provide limited informational value to the investors.

In the research proposed by Vassalou and Xing (2003) attention has been paid to the size of the capital market, the level of development of the economy and the probability of default. They observed that the important moment for the abnormal rates of return is the moment before and after the publication of the information about the changes. The division of the sample into subsamples according to the level of the economy development may explain the differences in the previous researches.

Almeida, Cunha, Ferreira and Restrepo (2014) analysed the effect of the Big Three sovereign credit rating downgrades on firm investment and financial policy on companies from 80 countries for the 1990-2012 period. The sovereign downgrades lead to greater decreases in investment and leverage of companies that are at the sovereign rating bound relative to otherwise similar companies below the bound. Consistent with a contraction in capital supply, bond yield spreads of firms at the bound increase relative to companies below the bound.

Jones and Mulet-Marquis (2014) analysed the abnormal rates of return associated with credit rating changes of US banks. They found that short-term abnormal returns are exhibited to both upgrades and downgrades. They also suggest that US domestic banks experience significantly larger negative abnormal returns to downgrades than international banks listed in the US.

Doherty, Kartasheva, Phillips (2012) analysed the competition between credit rating agencies on the information content of ratings. They used Standard and Poor's and A.M. Best to verify the impact of entry on the information content of ratings. The empirical analysis reveals that S&P required higher standards to assign a rating similar to the one assigned by A.M. Best and that higher-than-average quality insurers in each rating category of A.M. Best chose to receive a second rating from S&P.

The presented literature review suggests that the share market reacts on the downgrades of credit ratings. The analysis proposed by Vassalou and Xing (2003) suggest that an important determinant of the credit rating changes may be the level of the economy development. As a result the following hypothesis is proposed: The banks' share prices react stronger on the credit rating changes in developed economies. The strongest impact of the banks' credit rating changes is observed for downgrades both in developed and developing economies.

The current regulation analysis suggest that issuers should take at least one note proposed by the smaller credit rating agencies. As a result a research question arises as follows: Do the credit rating changes proposed by small CRAs impact significantly on the abnormal rates of return of banks' shares?

The previous analysis has not been verified the impact of the credit ratings changes on the rates of return of shares by taking into consideration the political division criteria. In the Author's opinion the particular countries or group of countries can characterize the similar business cycle, as a result banks' shares in those countries can react the same. As a result the following hypothesis is proposed: The impact of banks' credit rating changes on the abnormal rates of return of banks shares may depend on the political division criteria.

In the next section is presented the methodology and data description that are taken into consideration during the verification the mentioned hypothesis.

2. Methodology

The basic goal of the article is to analyse the impact of credit ratings changes on the rates of return of banks' shares taking into account the level of economy development and the political divisions. The analysis has been prepared on Thomson Reuters Database. As a dependent variable are taken into consideration daily differences between the logarithmized rates of return of banks' shares. As an independent variables are the threat of long term issuer credit rating changes proposed by small and big recognizable credit rating agencies[1]. The analysis has been prepared for data from years 1980 to 2015 for 24 countries[2] by using event study methods.

The sample has been divided into subsamples according to the political division criteria, as follows: the European countries, countries that do not belong to the European Union, the Eurozone countries, countries that not belong to the Eurozone, the Central and Eastern Europe countries, and those that do not belong to the CEE area. The next division that has been proposed for countries according to the level of the economy development. The classification of the countries activity has been prepared according the division proposed by the World Bank. The grouping of countries has been presented in the **Table 1**.

[1] AK&M Long-term Issuer Rating, Dominion Bond Rating Service (DBRS) - Long-term Issuer, ER Long-term Issuer National Scale Rating, Fitch Long-term Issuer Rating, R&I Long-term Issuer Rating, RA Expert Long-term Issuer Rating, RAM Long-term Issuer National Scale Credit Rating, RusRating Long-term Issuer National Scale Rating, S&P Long – Term Issuer Rating, Moody's Long -Term Issuer Rating.

[2] Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, France, Germany, Greece, Hungary, Ireland, Netherland, Norway, Poland, Portugal, Russia, Slovakia, Spain, Sweden, Switzerland, Turkey, Ukraine, Great Britain.

Table 1: Country groups singled out according to financial development and political division criterion.

No	Country	EU	EURO	CEE	High OECD	High non OECD	Middle	Low
1	Austria	1	1	0	1	0	0	0
2	Belgium	1	1	0	1	0	0	0
3	Bulgaria	1	0	1	0	0	1	0
4	Croatia	1	0	1	0	1	0	0
5	Czech Republic	1	0	1	1	0	0	0
6	Denmark	1	0	0	1	0	0	0
7	Finland	1	1	0	1	0	0	0
8	France	1	1	0	1	0	0	0
9	Germany	1	1	0	1	0	0	0
10	Greece	1	1	0	1	0	0	0
11	Hungary	1	1	1	1	0	0	0
12	Ireland	1	1	1	1	0	0	0
13	Netherlands	1	1	0	1	0	0	0
14	Norway	0	0	0	1	0	0	0
15	Poland	1	0	1	1	0	0	0
16	Portugal	1	1	0	1	0	0	0
17	Russia	0	0	1	0	0	1	0
18	Slovakia	1	1	1	1	0	0	0
19	Spain	1	1	0	1	0	0	0
20	Sweden	1	0	0	1	0	0	0
21	Switzerland	0	0	0	1	0	0	0
22	Turkey	0	0	0	0	0	1	0
23	Ukraine	0	0	1	0	0	0	1
24	United Kingdom	1	0	0	1	0	0	0

EU – European Union countries, *EURO* – Eurozone countries, *CEE* – Central and Eastern Europe countries, *high OECD* - high – income OECD members, *high non OECD* - high – income non OECD members, *middle* - middle income economies, *low* - low – income economies.

Source: Own elaboration.

The analysis has been prepared by using the event study methods. The basic goal of the mentioned method is to verify the response of the rates of return of banks' shares on the credit rating changes in the short term period of time. The research has been performed for the three period of times by using the cumulative rates of returns. The first period relies on the verification of the abnormal rates during the pre – event window. This window consists on the abnormal rates of return changes from 31 to 2 days before the event. The event period provides five days starting from one day before the event date and ending on third day after it. It allows us to catch better absorption of news, which may be appropriate because some credit rating changes were unprecedented. The post event window represents thirty days after it. The methodology of event study requires aggregation of the abnormal differences in variable within each event window to construct cumulative abnormal differences (CAD), taking an assumption that none other factors occurred in that time.

For each of political and the level of the economy subsamples upgrades and downgrades of credit rating assessments are tested separately. The significance of the impact of the mentioned credit rating changes is verified by using t- Student test. Small number of observations may weaken the power of statistical tests, suggesting the need to consider both the economic and statistical significance of results.

The number of banks' credit rating changes in European countries has been presented in the **Table 2**.

Table 2: Number of upgrades and downgrades of banks' credit ratings in European countries.

Country	Number of upgrade of banks' credit ratings	Number of downgrade of banks' credit ratings
Austria	0	9
Belgium	2	4
Bulgaria	0	4
Croatia	0	3
Czech Republic	8	4
Denmark	9	10
Finland	7	0
France	10	46
Germany	0	24
Greece	10	33
Hungary	2	4
Ireland	9	17
Netherlands	0	16
Norway	3	3
Poland	4	10
Portugal	4	16
Russia	13	25
Slovakia	9	4
Spain	26	59
Sweden	0	23
Switzerland	9	10
Turkey	21	13
Ukraine	6	3
United Kingdom	13	49
The size of credit rating agencies		
SMALL CRA's	11	17
BIG CRA's	182	362

Source: Own elaboration.

3. Findings

The importance of the banks' credit rating changes on the banks' share prices has been analysed into three subsamples. The first one relies on the classification of the credit rating agencies according to the size and recognizability. There are divided into "big" to which belong Standard &Poor's, Fitch and Moody's Investors Service and "small" that includes the rest of credit ratings agencies. The analysis has been prepared for the upgrade and downgrade of notes proposed by the mentioned institutions. The results have been presented in the table 3. In the case of the upgrade of the assessment note it is observed the significant impact of the mentioned variable on the banks' rates of return. Before the big CRAs publish the information about the changes the abnormal rates rise by 49,6%. Then, during the event window the influence is weaker and it equals 11,7%. The strongest reaction of the banks' share prices is noticed after the publication. The rates of return rises by 54%. The received results suggest that investors cautiously approach growth expectations of a credit rating. Only after their publication are they willing to purchase securities.

In the case of the downgrade of the credit ratings the impact of the assessment notes is stronger than for the upgrade. The share market reacts on the information published by the big CRAs. The abnormal rates of returns are lower before the moment of publication by 131,1%, during the event window by 22,7% and by 105,5% after the information is provided to the public. The analysed reaction is statistically significant during the post event window by 222,1%. The presented analysis suggests that investors have higher trust in the bigger recognizable credit rating agencies. If investors predict any negative changes on the financial market they react stronger before the moment of publication of them. The mentioned situation is consistent with the Fama conception of the effective market.

Table 3: The impact of banks' credit ratings on the rates of return due to the size of a credit rating agency.

Division	Big credit rating agency	Small credit rating agency	Big credit rating agency	Small credit rating agency
	upgrade		downgrade	
Obs	182	11	362	17
Event Window				
_cons	0.117**	-0,0721	-0.227***	0,0056
t	-3,29	(-0.30)	(-4.36)	-0,03
Pre Event Window				
_cons	0.496**	-4,609	-1.311***	-3,429
t	-2,71	(-1.18)	(-4.82)	(-2.10)
Post Event Window				
_cons	0.540**	-4,623	-1.055***	-2.221*
t	-3,06	(-1.16)	(-4.02)	(-2.48)
***, ** and * denote significance at 0,1%, 1% and 5% respectively.				

Source: Own calculations.

The next part of the analysis was to verify the impact of banks' credit rating changes on the rates of return of banks' shares by taking into consideration political division criteria. The research has been presented for banks operating in the European Union, the non – European Union, the Eurozone, the non - Eurozone, the Central and Eastern Europe and the non CEE countries. It has been prepared pooling for each of the mentioned groups, both for the upgrade and downgrade of credit ratings. The first research has been prepared for the upgrade of the assessment notes. The result of the analysis is presented in the table 4. The strongest impact of the notes is for banks' that operating outside the European Union. The share prices react during the event window. The rate of return rise by 26,5%. The same situation is observed for banks that are active in countries outside the Eurozone, but the mentioned relationship is weaker (as a result of the published information about the credit ratings upgrade, the differences between the logarithmized rates of return of banks' shares increase by 15,9%). The other relationship is observed for the banks from countries outside the Central and

Eastern Europe. The abnormal rates of return rises before the moment of publication by 41,7%, during the event window by 8,86% and during the post event window period of time by 58,6%. The impact of credit rating changes in the subsamples defined as European Union banks', the Eurozone banks', the Central and Eastern Europe banks', is statistically insignificant.

Table 4: The impact of the upgrade of banks' credit ratings on the rates of return due to the political division criteria.

Division	EU	non EU	EURO	non EURO	CEE	non CEE
Obs	137	56	79	114	53	140
Event Window						
_cons	0,0407	0.265**	0,0285	0.159**	0,151	0.0886*
t	-1,26	-2,84	-0,57	-3,19	-1,71	-2,4
Pre Event Window						
_cons	0,135	0,377	0,0557	0,309	-0,353	0.417**
t	-0,94	-0,41	-0,28	-0,66	(-0.37)	-2,62
Post Event Window						
_cons	0,121	0,553	0,0116	0,409	-0,652	0.586**
t	-0,73	-0,61	-0,06	-0,88	(-0.71)	-3,16
EU – European Union countries, *non EU* – countries that do not belong to the European Union, *EURO* – Eurozone countries, *non EURO* – countries that do not belong to the European Union, *CEE* – Central and Eastern Europe countries, *non CEE* – countries that do not belong to the Central and Eastern Europe area. ***, ** and * denote significance at 0,1%, 1% and 5% respectively.						

Source: Own calculations.

The next analysis has been prepared for the influence of the downgrade of banks' credit ratings on the differences between the rates of return of banks' shares. In the subsample of European Union banks and those that operating outside the European Union the significant impact of the information about the credit rating changes on the rates of return of their shares is observed. During the pre-event window period of time the abnormal rates are lower by 183,7%. On the event window the mentioned variable is decreased by 32,3%, and after the publication falls down by

150,6%. The stronger impact is observed for the Eurozone pooling. The rates of return are lower respectively by 196,8%, 32% and 157,8%. The share prices of banks that are operating outside the European Union react only during the moment of publication. The rates of return are declined by 31%. In the subsamples of banks that are taken the activity in the non – European Union countries and the Central and Eastern Europe, the significant abnormal rates of return are not observed as an effect of the banks' credit rating changes. The last group of banks' whose share prices react significantly on the credit rating changes. The mentioned relationship is weaker and it is properly 135,3% before, 24% during and 121,5% after the moment of publication.

The described effects can suggest that share prices of banks operating in the Eurozone countries are sensitive on the information about the downgrade of banks' credit ratings. The mentioned relationship may be connected with the level of developed of financial markets.

Table 5: The impact of the downgrade of banks' credit ratings on the rates of return due to the political division criteria.

Division	EU	non EU	EURO	non EURO	CEE	non CEE
Obs	315	64	222	157	74	305
Event Window						
_cons	-0.323***	0.310*	-0.320***	-0,0702	-0,118	-0.240***
t	(-6.26)	-2,26	(-5.14)	(-0.85)	(-0.74)	(-4.91)
Pre Event Window						
_cons	-1.837***	0,717	-1.968***	-0,611	-1,623	-1.353***
t	(-7.15)	-0,76	(-6.11)	(-1.32)	(-1.64)	(-5.73)
Post Event Window						
_cons	-1.506***	0,859	-1.575***	-0,445	-0,662	-1.215***
t	(-5.67)	-1,24	(-5.15)	(-1.04)	(-0.82)	(-4.93)

EU – European Union countries, *non EU* – countries that do not belong to the European Union, *EURO* – Eurozone countries, *non EURO* – countries that do not belong to the European Union, *CEE* – Central and Eastern Europe countries, *non CEE* – countries that do not belong to the Central and Eastern Europe area.
***, ** and * denote significance at 0,1%, 1% and 5% respectively.

Source: Own calculations.

As a result of previous effects there is prepared the analysis on the last pooling. The impact of the banks' credit ratings changes on the abnormal rates of return of banks' shares in the subsamples according the level of the economy development has been examined. It has been taken into consideration with the division used by the World Bank. There are prepared the following poolings: the high – income OECD members, the high – income non OECD members, the middle income economies and the low – income economies. The verification has been made both for the upgrade and the downgrade of credit ratings. The effects of the estimation of the mentioned relationship has been presented in the **Table 6**.

The impact of the upgrade of the banks' credit rating has been made for the high – income OECD members, the middle income economies and the low – income economies. The significant influence of the mentioned change is observed for the post event window period of time. The abnormal rates of return of banks' shares are higher by 27%. The stronger effect of the banks' credit ratings changes has been noticed on the abnormal rates of return of shares of banks that are operating in the middle income countries. The rates of return rise by 36,9% during the event window and 155,6% after the publication of the information about the changes. The analysis prepared for the prices shares of banks active in the low income countries, has given statistically insignificant results. The received applications confirm earlier results obtained in the study.

The last part of the research has been to verify the impact of the downgrade of banks' credit ratings presented in the subsample according to the level of the economy development. The received results suggest that only the shares of banks' operating in the high income OECD countries are sensitive on the downgrade of the assessment notes. In the pre-event window period of time the rates are lower by 184,4%, during the moment of publication they are decreased by 31,5% and after the announcement of changes they are fall down by 142,5%. The financial markets both according to the level of economy development and the political divisions, react stronger on the downgrade of the credit ratings than on the information about the upgrade. The presented analysis suggests also that shares market in the middle income economies is insensitive on the announcement of the downgrade of the

banks' credit ratings, because the abnormal rates of returns of their shares have risen despite the publication of a negative change.

Table 6: The impact of the of banks' credit ratings on the rates of return due to the level of economy development.

Division	high OECD	middle	low	high OECD	high non OECD	middle	low
	upgrade			downgrade			
Obs	151	35	6	331	3	42	3
Event Window							
_cons	0,0584	0.369**	-0,193	-0.315***	0,0992	0.279*	3,466
t	-1,92	-3,06	(-0.41)	(-6.34)	-0,63	-2,24	-2,75
Pre Event Window							
_cons	0,176	0,847	-2,859	-1.844***	0,479	0,219	22,24
t	-1,26	-0,83	(-0.43)	(-7.44)	-0,99	-0,24	-2,64
Post Event Window							
_cons	0.270*	1.556*	-7,978	-1.425***	0,988	0,15	14,28
t	-2,07	-2,19	(-1.09)	(-5.52)	-0,7	-0,23	-1,84
high OECD - high – income OECD members; *high non OECD* - high – income non OECD members; *middle* - middle income economies; *low* - low – income economies. ***, ** and * denote significance at 0,1%, 1% and 5% respectively.							

Source: Own calculations.

Conclusions

The presented research suggests that in most cases the credit ratings are given by the bigger, recognizable credit ratings agencies. The issuers are not interested by taking notes proposed by the smaller CRAs. The mentioned situation is connected with the quality of credit ratings and the reputation of CRAs. The issuer that received notes from the Big Three are threatened as those more serious and less risky for the investor.

The basic goal of the paper has been to analyse the importance of the banks' credit rating changes on the banks' share prices has been analysed. The verification has been prepared into three subsamples, according to: the size and recognisability of CRAs, the political divisions and the level of the economy development. The analysis has been prepared for the upgrade and downgrade of notes proposed by the mentioned institutions. The upgrade of banks' credit ratings influence significantly on the rates of return only in the case of the big agencies. In the case of the downgrade the impact of the assessment notes is stronger than for the upgrade. The analysed reaction is statistically significant both for the notes proposed by small and big CRAs, but the moment of impact is different. The share prices on the big CRAs notes react before, during and after the announcement moment. On the other hand the investors take decisions, under the influence of a change of notes given by small CRAs, only after the moment of publication.

The next analysis has been prepared for the political divisions. The first research has been prepared for the upgrade of the assessment notes. The mentioned change is significant for the rates of return of shares of banks operating outside: the Eurozone, the European Union and the non CEE area. The downgrade of notes is important for shares market of banks operating in: the European Union, the Eurozone and the non CEE area. The described effects can suggest that share prices of banks operating in the Eurozone countries are sensitive on the information about the downgrade of banks' credit ratings.

The analysis of the impact of the level of the economy development on the mentioned relationship. The impact of the upgrade of banks' credit rating changes on the abnormal rates of return of banks shares is significant for shares of banks' operating in the middle income countries. The downgrades of credit ratings influence significantly on the rates of return of shares of banks' that take activity in the high income OECD countries.

In conclusion, the banks' share prices react stronger on the credit rating changes in developed economies and the upgrade – in the middle income economies. The credit rating changes proposed by small CRAs impact insignificantly on the abnormal rates of return of banks' shares in the case of the upgrade and are

important for the downgrades. The impact of banks' credit rating changes on the abnormal rates of return of banks shares depends on the political division criteria.

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