CHANGES IN SOVEREIGN RATINGS

ZMĚNY SOVEREIGN RATINGŮ

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Abstract: *The article is focused on sovereign ratings of 103 countries on 1st January 2012 and 1st January 2014. The objective of the article is to assess changes in these ratings granted of the Standard & Poor´s and the Moody´s rating agencies. Ratings on 1st January 2012 are compared with the ones on 1st January 2014. The letter grades are transformed into numerals. Changes in ratings are analyzed according to size and direction. Transition matrix of upgrades and downgrades is used. The dependence of number of upgrades and downgrades on number of grades is analyzed. The parameters of regression curves are estimated. These curves describe the dependence of the Standard & Poor´s ratings on the Moody´s ratings and vice versa. The contribution of the article is clear because of high importance of sovereign ratings. These benchmarks influence amount of money distributed in private and public sector of economics. Topic of the article is up-to-date and results are helpful to investors who invest in international markets.*

Keywords: *rating agency, rating assessment, transition matrix, sovereign rating, linear regression, investment-grade rating, speculative-grade rating.*

Abstrakt: *Článek je zaměřen na sovereign ratingy 103 států v rámci časového období 1.1.2012-1. 1. 2014. Cílem článku je vyhodnocení změn těchto ratingů, které jsou uděleny ratingovými agenturami Standard & Poor´s a Moody´s. Jsou srovnána ratingová hodnocení k 1.1.2012 s ratingovými hodnoceními k 1.1.2014. Jednotlivým ratingovým známkám jsou přiřazeny numerické hodnoty. Vývoj změn ratingů je analyzován podle objemu a směru. Je použita migrační matice upgrades a downgrades. Je zjištěn počet upgrade a downgrade v závislosti na počtu stupňů. Jsou stanoveny odhady regresních křivek vyjadřující závislosti ratingových hodnocení jedné agentury na ratingových hodnoceních jiné agentury a naopak. Přínos článku je patrný z důležitosti sovereign ratingů jakožto benchmarků, které mají vliv na cenu*

peněžních prostředků pro veřejný i soukromý sektor. Téma článku je aktuální a výsledky článku jsou přínosné pro investory, kteří investují na mezinárodních trzích.

Klíčová slova: *ratingová agentura, ratingové hodnocení, migrační matice, rating státu, lineární regrese, investiční pásmo ratingu, spekulativní pásmo ratingu*

JEL Classification: G 24

2 INTRODUCTION

We have identified the reasons why immigration into the European Union (hereinafter only as the "EU") takes place. At this stage, we would like to pinpoint the reasons why non-EU citizens move to the Slovak Republic (hereinafter only as the "SR"). What is the material background for inflow of immigrants?

The SR is a landlocked state located in the middle of the Europe. Its population is relatively small in comparison to other countries – over 5 million people and its land are is also of small number. More importantly, the SR is a member of the EU, Eurozone, Schengen area, NATO or OECD. This makes *prima facie* from the SR a great destination for the non-EU citizens. On the other hand, the SR has not achieved the level of western *and the transfer of risks and benefits associated with the lease to the lessee should be the result of the convergence activities in this area. The evaluation of the impact of the newly proposed methodological approaches to lease reporting in the field of operating leases into the financial statements of lessee and lessor that will be affected by this change of methodology. The impact into selected indicators of financial analysis with a focus on indicators, in whose construction are used items of statements that are significantly affected by the change of the methodological approach is evaluated as well.*

Keywords: *convergence, financial lease, operational lease, right to use, derecognition*

JEL Classification: M41

1 INTRODUCTION

Investors realize their investments in various countries. In order to find the right country in what to invest, these countries could be compared according to different criteria or indicators including sovereign rating. Sovereign rating belongs among important economic indicators, which are used to specify the risk level of investing in some country. Rating grades of various countries are announced and afterwards carefully monitored by many investors. The interesting question is, whether differences between countries at the present time are similar to differences in the past. The objective of the article relates to this question. The contribution of the article, further described in the Discussion, consists in the author's analysis of current and recent sovereign ratings, which are granted of Standard & Poor´s and the Moody´s rating agencies.

2 LITERARY SURVEY

Durčáková and Mandel (2007) present, that the sovereign rating is very important for investors. It is the instrument of the government or central bank used to manage the state debt or to create favourable conditions for domestic entities lending money on international markets. Sovereign rating indicates the risk level of the investing environment and it is used by investors looking to invest abroad.

Remolona, Scatigna and Wu (2008) analyse sovereign ratings of 27 countries provided by the Standard & Poor´s and the Moody´s during 2002-2006. These sovereign ratings are used to construct a measure of ratings implied expected loss. They also consider credit ratings to be commonly used as a general categorical indicator of country risk. Sovereign ratings of 69 countries provided by the Standard & Poor´s, Moody´s, Thompson and Fitch IBCA during 1973-2001 are analysed by Faff, Brooks, Hillier and Hillier (2004). They measure number of upgrades and downgrades and then market reaction to foreign currency sovereign rating changes. The downgrade reduces, as Klimaviciene and Pilinkus (2011) describe, the foreign capital inflow and it indicates possible beginning of a currency crisis. This relationship relates rather countries of speculative-grade ratings. Rating agencies try to grant sovereign rating for a whole economic cycle, so that they do not take into consideration current changes.

According to Cantor and Packer (1996), the downgrade causes the increase of return volatility. They focuse on the methodics how to grant sovereign rating. Countries are mostly assessed according to following criteria: gross domestic product per capita, real gross domestic product growth, inflation, fiscal balance, foreign trade, foreign debt and level of economic development.

3 OBJECTIVE AND METHODOLOGY

The objective of the article is to assess changes in sovereign ratings granted of the Standard & Poor´s and the Moody´s rating agencies to 103 countries on 1st January 2012 and 1st January 2014. These agencies are chosen because their market shares are the highest. ESMA (2014) presents, that each of them has about 35 %. Ratings on 1st January 2012 are compared with the ones on 1st January 2014. The letter grades are transformed into numerals. Changes in ratings could be considered to be favourable (upgrade) or to be unfavourable (downgrade).

Changes in ratings are analyzed according to size and direction. Based on the transition matrix of upgrades and downgrades, the dependence of the number of upgrades and downgrades on the number of grades is analyzed. The dependence of the Standard & Poor´s ratings on the Moody´s ratings and vice versa are also analyzed. Author uses regression analysis. The parameters of regression curves are estimated. Linear model is used:

$$Y = b_0 + b_1 \cdot X + d \tag{1}$$

whereas Y is the dependent variable (firstly the Standard & Poor´s rating), b_0 is the parameter (independent on X), b_1 is the parameter (firstly intensity of reaction of the Standard & Poor´s rating on the change in the Moody´s rating), X is the independent variable (firstly the Moody´s rating) and d is the standard deviation. Analogous to this, linear model where the Moody´s rating means the dependent variable is also used. Iyengar (2012) uses the same linear model to analyze ratings.

4 RESULTS

The letter grades by the Standard &Poor´s and Moody´s are transformed as follows. Table 1 summarizes the credit rating measures applied by the Standard & Poor´s and the Moody´s.

Tab. 1: A Comparison of Rating Agencies Credit Rating Measures

Standard & Poor´s (grades)	**Moody´s (grades)**	**Consolidated Rating Number**
AAA	Aaa	21 (the highest credit rating)
AA+	Aa1	20
AA	Aa2	19
AA-	Aa3	18
A+	A1	17
A	A2	16
A-	A3	15
BBB+	Baa1	14
BBB	Baa2	13
BBB-	Baa3	12
BB+	Ba1	11
BB	Ba2	10
BB-	Ba3	9
B+	B1	8
B	B2	7
B-	B3	6
CCC+	Caa1	5
CCC	Caa2	4
CCC-	Caa3	3
CC	Ca	2
C	C	1 (the lowest credit rating)

Source: Standard & Poor´s (2014), Moody´s (2014)

Similar transformation of the letter grades into numerals is used by Faff, Brooks, Hillier and Hillier (2004). Consolidated rating numbers from 12 to 21 belong to investment-grade, while the ones from 1 to 11 belong

to speculative-grade. Table 2 reports the comparison of the ratings on 1st January 2012 and 1st January 2014.

Tab. 2: A Comparison of the Ratings on 1st January 2012 and 1st January 2014

Difference	**Number of countries on 1.1.2012**	**Number of countries on 1.1.2014**	**Countries on 1.1.2012**	**Countries on 1.1.2014**
-3	0	2	-	Malta, Tunisia
-2	4	3	Bahamas, Costa Rica, Italy, New Zealand	Bahamas, Costa Rica, New Zealand
-1	27	26	Many countries	Many countries
0	54	46	Many countries	Many countries
1	15	19	Many countries	Many countries
2	2	2	Ecuador, Trinidad & Tobago	Ecuador, Trinidad & Tobago
3	1	3	Ireland	Cyprus, Greece, Ireland
4	0	1	-	Slovenia
5	0	1	-	Ukraine

Source: The Guardian (2014)

The differences are in grades. Table 2 shows that 54 countries on 1st January 2012 obtained the same grades by both rating agencies. 46 countries obtained the same grades on 1st January 2014. Rating agencies report together with grades also positive/stabil/negative outlook on the future. Only 39 countries obtained the same grades and outlook on 1st January 2012 and only 32 countries similarly on 1st January 2014. Nevertheless, total number of used countries is 103.

This comparison shows that structural changes in rating assessment increase in time. Rating assessments are still more sensitive to change of economic conditions. Structural changes relate to for example solving the European debt crisis. This fact is confirmed by average differences, which measure the differences in grades when the rating assessments are not the same by both rating agencies. Average difference on 1st January 2014 is 1.39, which is more than 1.16 on 1st January 2012. The highest difference in rating assessment is on 1st January 2014 by the Ukraine. In this case, the Standard & Poor´s assessment (BB) is about 5 grades higher than the Moody´s assessment (Caa1). However, on both dates, the Standard & Poor´s assessment is lower than the Moody´s assessment by more countries than on the contrary. The differences in just one grade in both rating agency assessments account for 42 %. AAA is the most frequent grade by the Standard & Poor´s, Aaa is the one by the Moody´s. They are also the highest grades in rating assessment. The same differences in rating assessment on both dates are found in case of the Bahamas, Costa Rica, New Zealand, Ecuador and Trinidad & Tobago.

Then, changes in ratings are analyzed according to size and direction. Table 3 presents the transition matrix of upgrades and downgrades, which describes the changes in ratings between 1st January 2012 and 1st January 2014.

Tab. 3: Transition Matrix of Upgrades and Downgrades

		Moody´s			
		UP	=	DOWN	TOTAL
Standard & Poor´s	UP	9	3	2	14
	=	2	65	5	72
	DOWN	1	9	7	17
	TOTAL	12	77	14	103

Source: The Guardian (2014)

The rating was upgraded simultaneously by the Standard & Poor´s and the Moody´s by 9 countries. The rating was upgraded by the Standard & Poor´s, but left the same by the Moody´s by 3 countries. The rating was upgraded by the Standard & Poor´s, but downgraded by the Moody´s by 2 countries. Overall, the Standard & Poor´s changed rating by 31 countries, specifically 14 upgraded and 17 downgraded. Analogical data could be deduced for the Moody´s. Rating was not changed by any rating agency

by 65 countries. Based on the transition matrix, the response of the second rating agency to increase, confirmation or decrease of the rating by the first rating agency is found. It is clear, that the differences between rating assessments were sometimes higher, but sometimes lower. Table 4 reports the dependence of number of upgrades and downgrades on number of grades.

Tab. 4: The Dependence of Number of Upgrades and Downgrades on Number of Grades

Difference	Number of Standard & Poor´s	Number of Moody´s	Countries by Standard & Poor´s	Countries by Moody´s
-9	0	1	-	Cyprus
-7	0	1	-	Slovenia
-5	1	1	Cyprus	Spain
-4	1	0	Spain	-
-3	2	2	Egypt, Tunisia	Egypt, Italy
-2	2	2	Argentina, Slovenia	Belgium, Ukraine
-1	11	8	-	-
0	72	76	-	-
1	10	10	-	-
2	2	2	Philippines, Ukraine	Philippines, Turkey
3	1	0	Latvia	-
4	1	0	Greece	-
5	0	0	-	-

Source: The Guardian (2014)

Table 4 shows, that the rating was neither upgraded nor downgraded by the Standard & Poor´s by 72 countries and by the Moody´s by 76 countries. So that, the 2012-2014 period could be considered to be rather stable than unstable. The highest difference in rating assessment is by the Cyprus. In this case, the Moody´s assessment on 1st January 2012 (Baa3) is about 9 grades higher than on 1st January 2014 (Caa). This fact together with presented changes of rating of the Slovenia and Spain could relate to solving the European debt crisis. The number of downgrades

is higher than the number of upgrades by more countries. The upgrades or downgrades about just one grade account for 19 %.

It is found, whether the changes in rating are the same by the same countries. The same differences in rating assessment by both rating agencies are found in case of the Egypt and Philippines. The dependence of the ratings of the first rating agency on the ratings of the second rating agency are analyzed by regression curves. Table 5 reports the dependence of the Standard & Poor´s ratings on the Moody´s ratings and vice versa.

Tab. 5: The Dependence of the Standard & Poor´s Ratings on the Moody´s Ratings and Vice Versa

Indicator	**Y (Standard & Poor´s)**	**Y (Standard & Poor´s)**	**Y (Moody´s)**	**Y (Moody´s)**
	1.1.2012	**1.1.2014**	**1.1.2012**	**1.1.2014**
b_0	0.56	1.01	-0.21	-0.31
b_1	0.95	0.93	1.03	1.02
Standard deviation b_0	0.22	0.31	0.24	0.34
Standard deviation b_1	0.02	0.02	0.02	0.02
Determination index	0.97	0.94	0.97	0.94

Source: The Guardian (2014)

The intensity of the dependence and the regression function quality are analyzed. Determination index close to 1.00 shows, that the regression function is appropriately chosen. Used model can explain almost 100 % of variability of dependent variable, which is the rating assessment. It is clear, that the change in rating by the first rating agency is mostly followed by equivalent change in rating by the second rating agency.

5 DISCUSSION

Rating assessments are important benchmarks, which influence the price of money for both public and private sector. Impacts of change in rating on stock markets and bond markets are also important. As for presented upgrades and downgrades, especially changeovers between investment-grade

and speculative-grade are important. These changeovers change the probability, whether the country will be able to pay back the debt.

The contribution of the article for the users of rating assessments is clear. Rating up-to-dateness is one of the requirements for its using by investors, who plan to invest in international markets. However, rating changes should not be too frequent in the short-time horizon. Livingston, Wei and Zhou (2010) present, that if rating agency is too much conservative in its assessments for a long time and if it does not sufficiently response to changes in economic indicators, then it loses the confidence of investors. Rating agencies should be sufficiently objective in their assessments.

Based on the results presented in the article, it can not be said that the changes in rating exactly depend on geographical classification or economical classification. In connection with recent financial crisis, the question, whether new rating grades should be used to assess different types of subjects, is discussed. There are several ways in which research in this up-to-date economic field can continue. Different time period, rating assessments by different rating agencies or different methodics analyzing upgrades and downgrades could be used.

6 CONCLUSION

Author focused in the article on the sovereign ratings of 103 countries on 1st January 2012 and 1st January 2014. Changes in ratings granted of the Standard & Poor´s and the Moody´s were assessed according to size and direction by means of the transition matrix of upgrades and downgrades. The number of countries with the same rating assessments by both rating agencies, the highest differences in rating assessments and the most frequent rating assessments were found. The dependence of number of upgrades and downgrades on number of grades was analyzed. The parameters of regression curves, which describe the dependence of the first agency ratings on the second agency ratings, were estimated. Found determination indexes showed on appropriate choice of the regression function. Based on results, important changes in rating were identified. Moreover, increasing differences between assessments by both rating agencies showed, that structural changes in rating assessment will increase in time.

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ACKNOWLEDGEMENT

This article was compiled in terms of Thematic direction 02 solution of Research plan FBE MENDELU in Brno MSM No. 6215648904/02 named „Main tendencies in the development of a competitive environment within the integration and globalisation processes, and the adaptation of business entities to the new conditions of the integrated market“ realized by means of financial support of state resources through Ministry of Education, Youth and Sports.

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