OVERVIEW OF THE CAAMPL EARLY WARNING SYSTEM IN ROMANIAN BANKING

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ABSTRACT: *The uniform bank rating system is a specific instrument for the supervising activity and has its origins in the USA; it has later been borrowed by German, Italian, Great Britain authorities, which use influential components in their banking system; later on, their system was adopted by most central banks within the European Union. In Romania, the uniform bank rating system has been implemented by NBR (the National Bank of Romania) since 2000; the specific components are: the capital adequacy (C), the quality of assets (A), the quality of the stock holding (A), the management (M), profitability (P), liquidities (L) and sensitivity (S) starting from the year 2005. For short, this system is called CAAMPL. The evaluation of these specific elements represents an important criterion for establishing a compound rating, which means assigning scores to each bank. The compound rating for the banking system is established based on economic – financial indicators and prudence indicators.*

KEY WORDS: *internal audit; banking risk; uniform bank rating system; CAAMPL.*

JEL CLASSIFICATION: *G21; G24; G32.*

1. INTRODUCTION

Banking sector plays an important role in the economic development of a country, a sound and efficient banking system is significant in achieving economic development. Bank failures are considered to have greater adverse effects on the economy than the failure of other types of business firms. Thus, bank failures are viewed to be more damaging than other failures because of a fear that they may spread in domino fashion throughout the banking system, felling solvent as well as insolvent

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banks. In order to prevent the systemic risk and provide stability and viability for the entire banking system, banking authorities developed certain systems of monitoring the activity and the results of banks.

Early warning models in economics and finance have always been of high interest especially after mid-1990s. Hence, the uniform bank rating system is a specific instrument for the supervising activity and has its origins in the USA (Roxin, 1997). Since 1979, banks have been rated using the Uniform Financial Institutions Ratings System (UFIRS), recommended by the Federal Reserve Bank. This system has later been borrowed by German, Italian, Great Britain authorities, which use influential components in their banking system; later on, their system was adopted by most central banks within the European Union. It has proved to be a useful system for countries that use it, being a mathematical model that works with balance sheets and periodic reports supplied by banking institutions to central banks. The only precarious component is the management, which is judged based on figures (Drigă & Dura, 2007).

In Romania, the uniform bank rating system has been implemented by NBR (the National Bank of Romania) since 2000; the specific components evaluated are: capital adequacy (C), quality of assets (A), quality of the stock holding (A), management (M), profitability (P), liquidities (L) and sensitivity to market risk (S) - starting from 2005. For short, this system is referred to with the following acronyms CAAMPL. The evaluation of these specific elements represents an important criterion for establishing a composite rating, which means assigning scores to each bank. The composite rating for the banking system is determined based on financial and prudential indicators. Each component is assigned scores between 1 and 5, where 1 stands for a sound bank in every respect while 5 indicates banks with extremely unsafe and unsound practices, bank failure being highly probable. Banks with a composite 1 rating generally have components rated 1 or 2. If the composite ratings for a bank are 3, 4 or 5, enforcement actions, enhanced monitoring and limitations on expansion are required.

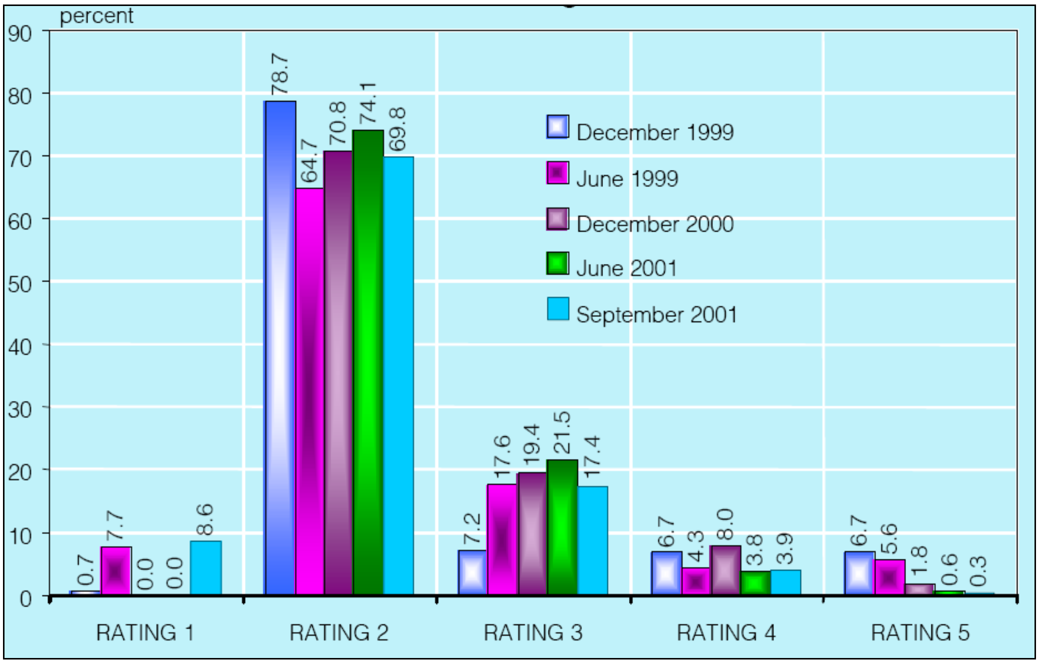
2. BANK COMPOSITE RATINGS IN THE ROMANIAN BANKING SYSTEM

The Uniform Banking Rating System (CAAMPL) is based on the periodical reports sent by banks to the National Bank of Romania (NBR). The methodology used for assessment implies diagnose of banks by assigning certain ratings for every institution. The system allows the separation of the strong banks from those in difficulty, enabling increased attention to those areas that show the greatest vulnerabilities (Dardac & Georgescu, 2011). Thus, it is used as a supervisory tool to find out the overall position of an individual bank so that the NBR can take actions where and when it is necessary.

The NBR uses the Uniform Bank Rating System to rate banks on a scale from 1 to 5, rating 1 representing the best performing banks. The composite rating for a bank is established based on scores assigned to each component. The NBR does not make public the ratings given to every bank, however it presents from time to time the number of the banks which are included in every rating. The analysis takes into consideration some specific components, such as: capital adequacy, shareholding quality, asset quality, management, profitability and liquidity.

The weight of banks classified by the five composite ratings in total banking assets, during 1999-2001 is presented in figure 1. It is obvious that starting with 1999, the year that marks the process of restructuring for the Romanian banking system, the banking system was polarized on the superior floor of the rating, containing banks rated 2 and 3 (Oprițescu & Iacobescu Manta, 2008).

At the end of December 2001, most banks were assigned rating 2, while the share of 1 and 2 rated banks rose by 12.1%, illustrating a further consolidation of the Romania banking system during 2001.

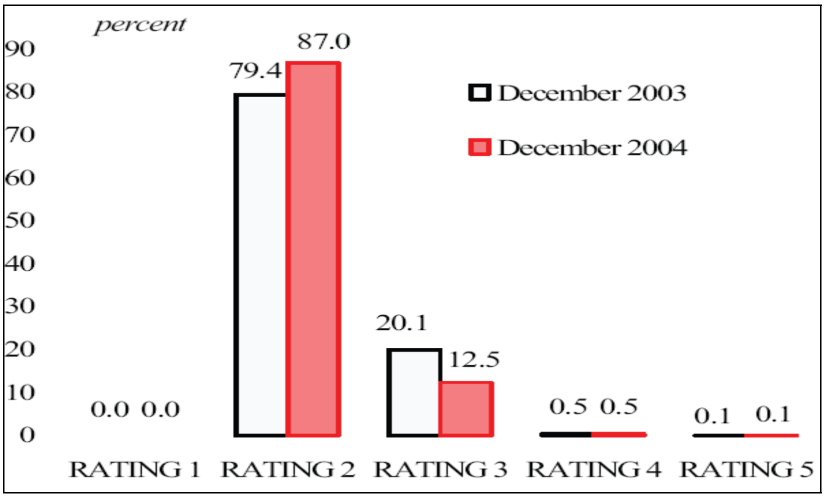


Source: NBR, Presentations and interviews, Recent economic developments, 3 December 2001

Figure 1. The weight of banks classified by the five composite ratings in total banking assets, during 1999-2001

In 2002, in accordance with the criteria set by the NBR within the uniform bank rating system, most entities were highly rated. However, the Bank Surveillance Department within the National Bank of Romania assigned rating 1 only to one bank. Although they formed the majority by the end of 2002, banks rated 2 diminished their share in total bank assets (from 76.4% in 2001 to 62.6% in 2002) in favour of banks rated 3 (from 16% to 19.2% during the same period of time) (NBR Annual Report, 2002).

In 2004, the Romanian banking system strengthened further. According to the uniform bank rating system, almost 90% of banks were able to record the composite 2 rating, but no institution met all requirements imposed by the maximum rating. In comparison to 2003, major changes could be noticed under ratings 2 and 3, meaning that some banks passed from rating 3 to rating 2; the balance sheet of banks with rating 3 revealed a decrease by 7.7%, continuing to 12.4%, in favour of banks with rating 2 which increased their share to 87% (NBR Annual Report, 2004).



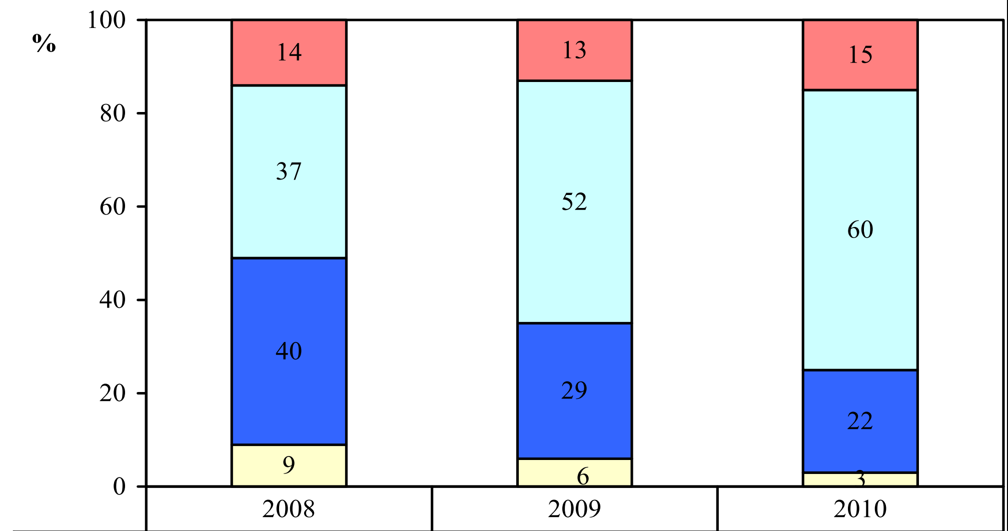
Source: NBR Monthly Bulletin, 1/2005

Figure 2. The weight of banks classified by the five composite ratings in total banking assets, during 2003-2004

By the end of 2005 there was a shift in the approach used to assess bank management (the M component in the uniform rating system) so that it allows the identification of its capacity to plan, monitor and control banking risks and assess the quality of corporate governance. Furthermore, a new bank rating indicator had been introduced in the uniform bank rating system, namely sensitivity to market risk (S), in accordance with Basel II regulations, represented an important stage in the development of the supervisory strategy. The need to add market risk assessment to the bank-rating system arose from the changes in the Romanian banking system and the supervisory authorities' orientation towards the most advanced world practices in the field (NBR Annual Report, 2005).

Sensitivity to market risk defines the nature of the surveillance activity and shows the bank's reactions towards various systems shocks. Sensitivity has joined the other operational components necessary in the analysis of a bank. In this respect, NBR has not demanded from the financial institutions to complete additional financial reports; the new indicator is used to evaluate, through econometric models, the possibility that a bank should register losses as a consequence of the variation of some shock factors brought about by the decrease of the interest, of the currency, by the liberalization of the stock account. The first step in this direction was taken in 2003, when the International Monetary Fund (IMF) created a soft, which would be used to evaluate the impact of some slight shocks upon the banking system: both the direct effect and the indirect ones (which are felt by the economic agents, financed by the banking system).

In December 2005, not a single bank fulfilled the requirements imposed for the highest rating. Significant changes occurred under ratings 2 and 3. Thus, the share of assets of 3 rated banks extended by 8.8%, whereas that of assets of 2 rated banks narrowed by 8.6%. Thus, 14 financial institutions record the 3 composite rating, a medium rating level characteristic for 12.5% of bank assets. The last place in the top was held by a 4 rated bank, which held 0.5% of the bank assets, and was under the observation of the National Bank of Romania as far as the shareholding quality is concerned. The lowest composite rating, 5, was recorded by one financial institution representing 0.1% of the total bank assets (NBR Monthly Bulletin 1/2005). This bank had restrictions regarding credit granting and attracting deposits from population. In addition, according to NBR regulations, in case a 5 rated bank is unable to raise more capital, it is very likely to lose its licence. Under these circumstances, the bank should reduce costs, diversify services and widen the range of products. Further more, such an institution should not borrow money from the market and search for cheap alternatives of financial sources.



	2008	2009	2010
Rating 5	0	0	0
Rating 4	14	13	15
Rating 3	37	52	60
Rating 2	40	29	22
Rating 1	9	6	3

Source: based on data supplied by NBR

Figure 3. The weight of Romanian banks classified by the five composite ratings in total banking assets, during 2008-2010

In the following years, in year-on-year comparison, significant changes occurred concerning ratings 2 and 3. Thus, in 2006 the share of assets of 2-rated banks fell to 74.1% and the share of assets of 3-rated banks increased to 25.3%. In 2007 the shares of assets of 3-rated banks increased (by 11.5%) while the share of assets of 2-rated banks decreased by 11.9%. It should be pointed out that not a single bank was eligible for the top rating (NBR Monthly Bulletin 12/2006 and 12/2007).

Composite ratings for banks have deteriorated in 2009 and 2010, mainly due to lower profits recorded (the profitability of the Romanian banking system entered negative territory as of May 2010). Thus, at the end of 2010, 59% of the banks from the Romanian banking system were included in rating 3, indicating a "mediocre" situation in terms of prudentiality. In these last two years, a large transfer from rating 2 to rating 3 was registered (Chivu, 2011).

Banks downgrade was driven mainly by issues of profitability. From the 42 active institutions, 25 banks record the composite 3 rating. The share of 3 rated banks rose by 8%, from 52% at the end of 2009 and 37% in December 2008. At the same time, with rating 2 were assigned only 22% of banks (29% in December 2009, and 40% in 2008). As far as 1-rated banks are concerned, at the end of 2010 only 3% fulfilled the requirements imposed for the highest rating, compared to 6% in 2009 and 9% in 2008. In contrast, the share of banks with rating 4 rose last year by nearly three points, to 15%, whereas no bank received the rating 5.

3. CASE STUDY

Considering the bank rating and the early warning system elaborated by the Surveillance Department within NBR and the data from the balance sheet and the profit and loss account of a bank, we can characterize the quantifiable CAPL components which help determine the global risk position of the bank for year N and N+1.

1. Capital adequacy (C):

- Solvency ratio

$$Rs_{2N} = \frac{C_p}{A_p} \cdot 100 = \frac{3289988300}{10588892200} \cdot 100 = 31.07\%$$

$$Rs_{2N+1} = \frac{F_p}{A_p} \cdot 100 = \frac{3743910700}{14647675000} \cdot 100 = 25.56\%$$

- Rate of capital

$$Ep_{N+1} = \frac{C_p}{TA} \cdot 100 = \frac{3289988300}{18472482000} \cdot 100 = 17.81\%$$

$$Ep_{N+1} = \frac{C_p}{TA} \cdot 100 = \frac{3743910700}{24489292300} \cdot 100 = 15.29\%$$

- Capital and joint stock ratio

$$Cp/Cs_{N} = \frac{C_p}{C_s} \cdot 100 = \frac{3289988300}{2119692500} \cdot 100 = 155.21\%$$

$$Cp/Cs_{N+1} = \frac{C_p}{C_s} \cdot 100 = \frac{3743910700}{2119692500} \cdot 100 = 176.63\%$$

- Net patrimony

$$Pn_{N} = TA - S_{ai} = 18472482000 - 15182493700 = 3289988300 \text{ RON}$$

$$Pn_{N+1} = TA - S_{ai} = 24489292300 - 20745381600 = 3743910700 \text{ RON}$$

2. Asset quality (A):

- Credits granted to clients in total assets

$$Cr_{cl}/TA_{N} = \frac{Cr_{cl}}{TA} \cdot 100 = \frac{7882238300}{18472482000} \cdot 100 = 42.67\%$$

$$Cr_{cl}/TA_{N+1} = \frac{Cr_{cl}}{TA} \cdot 100 = \frac{10288778000}{24489292300} \cdot 100 = 42.01\%$$

- Credits granted to clients in total attracted and borrowed sources

$$Cr_{cl}/S_{ai\,N} = \frac{Cr_{cl}}{TP - C_p} \cdot 100 = \frac{7882238300}{18472482000 - 3289988300} \cdot 100 = 51.91\%$$

$$Cr_{cl}/S_{ai\,N+1} = \frac{Cr_{cl}}{TP - C_p} \cdot 100 = \frac{10288778000}{24489292300 - 3743910700} \cdot 100 = 49.60\%$$

- Deposits and credits at other financial institutions in total assets

$$Cr_{bc}/TA_{N} = \frac{Cr_{bc}}{TA} \cdot 100 = \frac{784532100}{18472482000} \cdot 100 = 4.25\%$$

$$Cr_{bc}/TA_{N+1} = \frac{Cr_{bc}}{TA} \cdot 100 = \frac{751640100}{24489292300} \cdot 100 = 3.07\%$$

3. Profitability (P):

- Return on assets (ROA)

$$ROA_{N} = \frac{Pr_n}{TA} \cdot 100 = \frac{274233100}{18472482000} \cdot 100 = 1.48\%$$

$$ROA_{N+1} = \frac{Pr_n}{TA} \cdot 100 = \frac{631423400}{24489292300} \cdot 100 = 2.58\%$$

- Return on equity (ROE)

$$ROE_N = \frac{Pr_n}{C_p} \cdot 100 = \frac{274233100}{3289988300} \cdot 100 = 8.34\%$$

$$ROE_{N+1} = \frac{Pr_n}{C_p} \cdot 100 = \frac{631423400}{3743910700} \cdot 100 = 16.87\%$$

- Rate of profitability of the basic activity

$$Rrab_N = \frac{V_e - V_p}{Ch_e - Ch_p} \cdot 100 = \frac{1759914900}{1216383100} \cdot 100 = 144.68\%$$

$$Rrab_{N+1} = \frac{V_e - V_p}{Ch_e - Ch_p} \cdot 100 = \frac{2142894000}{1104952300} \cdot 100 = 193.94\%$$

- Rate of profit

$$Rpr_N = \frac{Pr_b}{VT} \cdot 100 = \frac{382280100}{1759914900} \cdot 100 = 21.72\%$$

$$Rpr_{N+1} = \frac{Pr_b}{VT} \cdot 100 = \frac{831533600}{2142894000} \cdot 100 = 37.80\%$$

- Total debt ratio

$$Ri_N = \frac{S_{ai}}{TP} \cdot 100 = \frac{15182493700}{18472482000} \cdot 100 = 82.19\%$$

$$Ri_{N+1} = \frac{S_{ai}}{TP} \cdot 100 = \frac{20745381600}{24489292300} \cdot 100 = 84.71\%$$

4. Liquidity (L):

- Immediate liquidity

$$Li_N = \frac{D_{bc} + T}{S_{ai}} \cdot 100 = \frac{7805882300}{15182493700} \cdot 100 = 51.41\%$$

$$Li_{N+1} = \frac{D_{bc} + T}{S_{ai}} \cdot 100 = \frac{11292001700}{20745381600} \cdot 100 = 54.43\%$$

- Credits granted to clients / the clients' deposits

$$Cr_{cl} / D_{cl\,N} = \frac{Cr_{cl}}{D_{cl}} \cdot 100 = \frac{7882238300}{13953887900} \cdot 100 = 56.50\%$$

$$Cr_{cl} / D_{cl\,N+1} = \frac{Cr_{cl}}{D_{cl}} \cdot 100 = \frac{10288778000}{17597087700} \cdot 100 = 58.50\%$$

Table 1. Establishing the rating of a bank according to the analysis indicators of the four CAPL quantifiable criteria

No.	Indicator	Level of indicator (%)		Rating	
		N	N+1	N	N+1
I. Capital adequacy (C)					
1.	Solvency ratio	31.07	25.56	1	1
2.	Rate of capital	17.81	15.29	1	1
3.	Capital and joint stock ratio	155.21	176.63	1	1
II. Asset quality (A)					
1.	Credits granted to clients in total assets	42.67	42.01	1	1
2.	Credits granted to clients in total attracted and borrowed sources	51.91	49.60	1	1
3.	Deposits and credits at other financial institutions in total assets	4.25	3.07	1	1
III. Profitability (P)					
1.	Return on assets	1.48	2.58	4	4
2.	Return on equity	8.34	16.87	2	1
3.	Rate of profit of the basic activity	144.68	193.94	2	1
4.	Rate of profit	21.72	37.8	2	2
IV. Liquidity (L)					
1.	Immediate liquidity ratio	51.41	54.43	1	1
2.	Credits granted to clients / the clients' deposits	56.50	58.50	1	1

Source: own calculation

4. CONCLUSIONS

The analysis of the data presented in table 1 proves that, both in year N and N+1, all the quantifiable components of the Uniform Bank Rating System were assigned rating 1, except profitability; this also shows that the bank has a strong capital in comparison with it's risk rate, the quality of assets and the credit administration policies are adequate, the identified deficiencies are minor and the exposure to risk regarding capital protection is modest.

Rating 1 for liquidity indicates the fact that the bank has strong liquidities and highly developed fund administration policies. This financial institution has ready access to the necessary sources in order to generate favourable funds for the present and anticipated liquidities.

Ranking 2 for profitability refers to satisfactory income that is considered enough to cover the cost of operations, to maintain the capital adequacy and the allocation levels necessary to ensure the quality of assets, their increase and other factors that affect the quality, the quantity and the trend of the income.

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