SOLVENCY INDICATOR IN THE CREDIT COOPERATIVES

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Abstract
Solvency ratio is the best known indicator of banking prudence, with the priority to ensure the ability of credit institutions to meet the borrowers default and mitigate competitive inequalities between different national systems.
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Introduction

Banking capital is the necessary tool to protect the bank in case of unexpected losses. As a restriction on capital adequacy of banks is, in fact, determining the size of conventional capital according to certain criteria that were proposed and accepted by the partners.
Basel agreement established the capital adequacy system, namely:

- minimum capital requirements are related to credit risk, depending on the structure of bank assets. It creates a specific relationship: the more risky loans, the capital requirement is higher;
- shareholders intake is considered the most important type of capital, each bank itself must participate with a minimum rate required depending on the degree of risk;
- minimum total capital requirements are set at 8% of total risk weighted assets;
- risk for off-balance sheet transactions is included in the calculation by converting specific commitments in equivalent credits;
- capital requirements were roughly standardized between countries, which removes the competitive advantage that banks in a country could have on banks in other countries, according to the rules or different accounting systems.

Solvency ratio, of capital adequacy, has been an ongoing concern of bank management and prudential regulations, due to its significance on bank soundness and safety deposit. Furthermore, it has an important competitive dimension, well capitalized banks are more attractive and competitive to attract resources and to expand business.

Solvency ratio 1

Under existing banking legislation[416], banks are required to compute and report NBR solvency level indicators, which is determined as follows:

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[416] 26/04/1999 NBR Norms No. 8, to limit credit risk of banks published in M.Of.nr.245 of 1.06.1999

-*Indicator of solvency 1*, calculated as a percentage ratio between the equity level 1 and net exposure (total assets and off- balance sheet items, weighted according to their degree of risk), an indicator whose minimum is 12%.

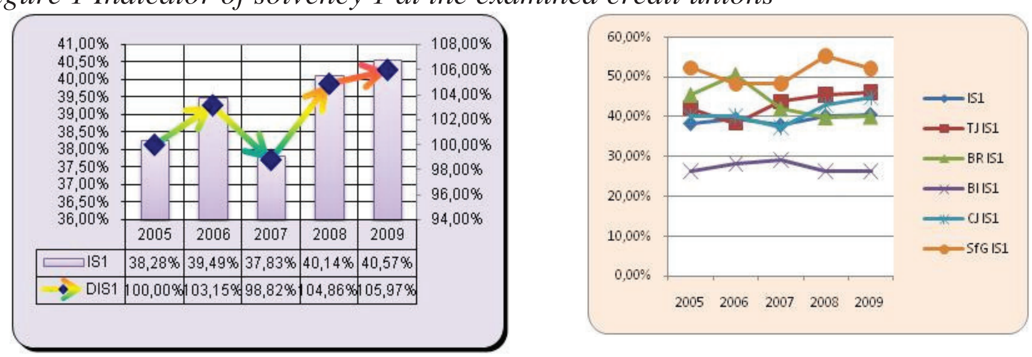
Formula	Own funds/[net assets (after deduction of liabilities AB) + off ballance sheet items, converted to equivalent credit depending on their degree of credit risk processing] weighted according to their degree of credit risk
Periodicity	monthly
Development limits	>15% Well capitalized (rating 1) 12-14,9% Adequately capitalized (rating 2) 8-11,9% Undercapitalized (rating 3) 5- 7,9%Significantly undercapitalized (rating 4) < 5% Major undercapitalized (rating 5)

Table 1 Evolution of the solvency ratio at the credit unions examined

Indicator of solvency 1 (SI1)=OF*100/NE						
		2005	2006	2007	2008	2009
Own funds level 1	OF	8.815.052	10.823.266	22.245.640	28.071.974	28.287.224
Net exposure (assets and elements outside balance sheet risk-weighted)	NE	23.027.670	27.409.985	58.809.356	69.932.111	69.732.207
Indicator of solvency 1	*IS1*	*38,28%*	*39,49%*	*37,83%*	*40,14%*	*40,57%*
Dynamic of indicator of solvency 1	DIS1	100,00%	103,15%	98,82%	104,86%	105,97%

Source: Own calculations based on the aggregated financial statements

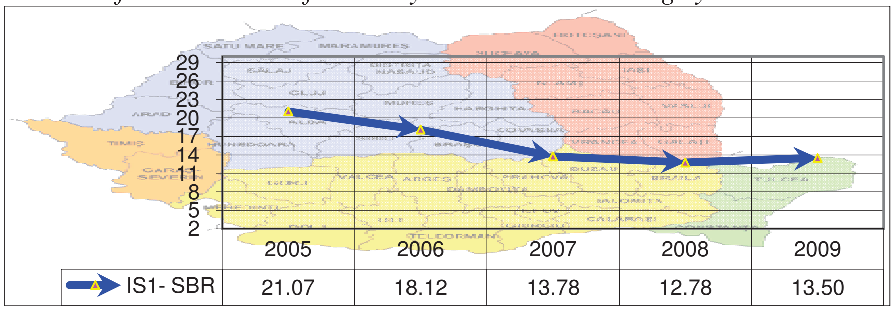
Figure 1 Indicator of solvency 1 at the examined credit unions



Source: own illustration based on the aggregated financial statements

From the graphic above is noted that the indicator of solvency 1 throughout the period under review stood at a level exceeding 37% and 12% upper limit, something which highlights the state of solvency of credit cooperatives analyzed. It is also higher than the average recorded in the banking system in Romania.

Figure 2 Evolution of the indicator of solvency in romanian banking system



Source: NBR Periodical publications

Solvency ratio 2

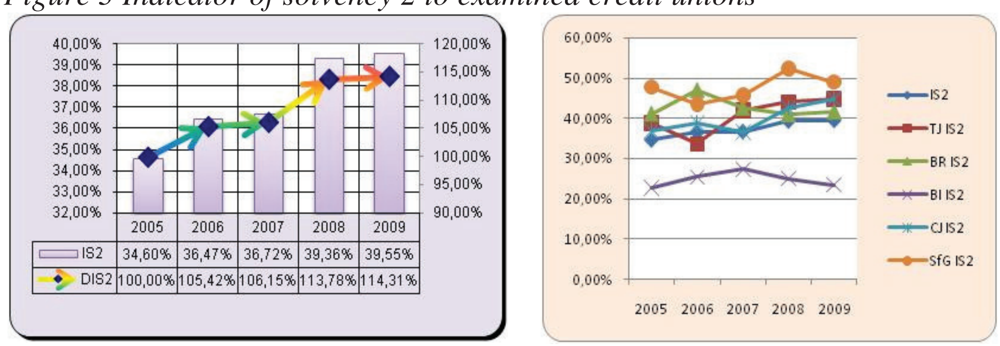
Indicator of solvency 2, calculated as a percentage ratio between equity and net exposure, indicating whose minimum level is 8%.

Table 2 Development of the solvency ratio 2 at the examined credit unions

Indicator of solvency 2 (SI2) =E*100/NE						
		2005	2006	2007	2008	2009
Equity	E	7.966.648	9.996.581	21.597.200	27.528.455	27.577.437
Net exposure (assets and off balance sheet items weighted by risk)	NE	23.027.670	27.409.985	58.809.356	69.932.111	69.732.207
Indicator of solvency 2	*SI2*	*34,60%*	*36,47%*	*36,72%*	*39,36%*	*39,55%*
Dynamic of Indicator of solvency 2	DSI2	100,00%	105,42%	106,15%	113,78%	114,31%

Source: Own calculations based on the aggregated financial statements

Figure 3 Indicator of solvency 2 to examined credit unions



Source: own illustration based on the aggregated financial statements

The indicator of solvency 2 was higher than the threshold of 8% required by Basel II, as follows: 36.60% in 2005, 36.47% in 2006, 36.72% in 2007 39.36% in 2008 and 39.55% in June 2009.

Equity Rates (Leverage effect)

Formula	Equity / Total assets (net)		
Periodicity	monthly		
Development limits	> 6%	well capitalized	(rating 1)
	4 – 5,9%	adequately capitalized	(rating 2)
	3 – 3,9%	undercapitalized	(rating 3)
	2 – 2,9%	significantly undercapitalized	(rating 4)

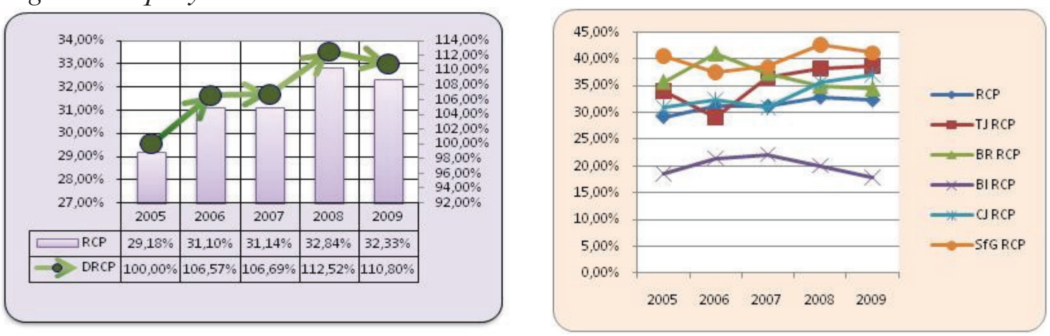
	< 2%	major undercapitalized	(rating 5)

Table 3 Evolution of the Equity rate

Equity rates (ER)=E*100/TA						
		2005	2006	2007	2008	2009
Equity	E	7.966.648	9.996.581	21.597.200	27.528.455	27.577.437
Total assets	TA	27.298.882	32.142.935	69.366.139	83.830.681	85.288.738
Equity rates	*ER*	*29,18%*	*31,10%*	*31,14%*	*32,84%*	*32,33%*
Dinamyc of equity rates	DER	100,00%	106,57%	106,69%	112,52%	110,80%

Source: Own calculations based on the aggregated financial statements

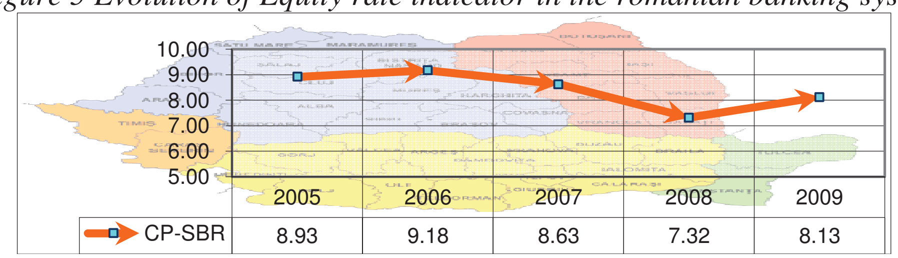
Figure 4 Equity Rates at credit unions examined



Source: own illustration based on the aggregated financial statements

Equity rate evolved increased from 29.18% in 2005 to 32.33% in June 2009 because the assets increased faster than the equity.

Figure 5 Evolution of Equity rate indicator in the romanian banking system



Source: NBR Periodical publications

The indicator in the banking system in Romania reached the 8.13 level in June 2009.

The ratio of equity capital

Formula	Equity/ Capital		
Periodicity	monthly		
Development limits	> 150%	well-capitalized	(rating 1)
	150 - 100,0%	adequately capitalized	(rating 2)
	80 - 99,9%	undercapitalized	(rating 3)
	50 - 79,9%	significantly undercapitalized	(rating 4)
	< 50%	major undercapitalized	(rating 5)

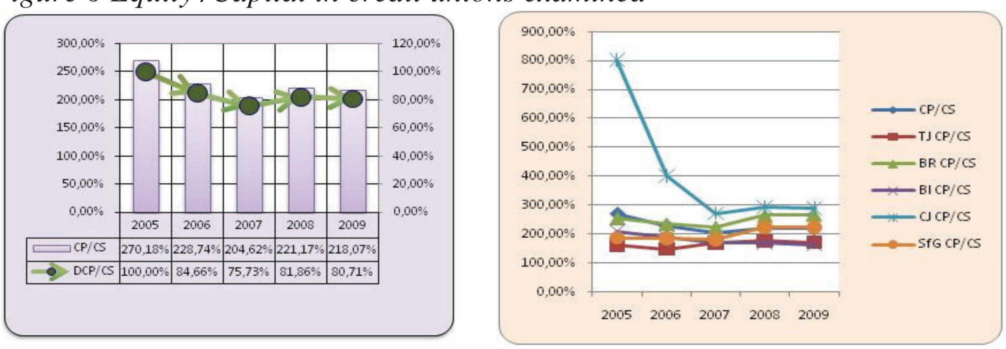
Defining related capital adequacy ratings:	Rating 1: indicates a strong level of capital compared to the bank's risk profile. Rating 2: indicates a satisfactory level of capital compared to the bank's risk profile. Rating 3: shows a less satisfactory level of capital that can not fully support the bank's risk profile. Rating indicate the need for improvement even if the capital exceeds the minimum required by regulations. Rating 4: indicates a deficiency of capital, the bank's viability could be threatened. In this case, shareholders may request the assistance or financial support from external institutions. Rating 5: indicates a critical deficiency of capital, threatening the viability of the bank. It requires immediate financial aid of shareholders or an external funding agency.

Table 4 Evolution of the ratio of equity and capital to credit unions examined

Equity / Capital (>100%)						
		2005	2006	2007	2008	2009
Equity	E	7.966.648	9.996.581	21.597.200	27.528.455	27.577.437
Equity	C	2.948.630	4.370.190	10.555.010	12.447.020	12.646.170
Equity / Capital	*E/C*	*270,18%*	*228,74%*	*204,62%*	*221,17%*	*218,07%*
Dinamyc of Equity / Capital	D E/C	100,00%	84,66%	75,73%	81,86%	80,71%

Source: Own calculations based on the aggregated financial statements

Figure 6 Equity /Capital in credit unions examined



Source: own illustration based on the aggregated financial statements

The indicator fell during 2005-June 2009 from 270.18% to 218.07% because the equity increased faster than the capital.

A bank may be considered:

Well capitalized (rating 1) if it meets the following conditions:

- solvency ratio 1 is 15% or more;
- solvency ratio 2 is 10% or more;
- Equity ratio (leverage effect) is 6% or more;
- It is not in danger of not fitting within the terms of any legislation aimed at maintaining a specific level of capital.

Adequately capitalized (rating 2) if it meets the following conditions:

- solvency ratio 1 is 12% or more,

- solvency ratio2 is 8% or greater;
- Equity ratio (leverage effect) is 4% or higher.

Undercapitalized (rating 3) if:

- solvency ratio 1 is below 12% and / or
- solvency ratio 2 is below 8% and / or
- Equity ratio (leverage effect) is less than 4%.

Significantly undercapitalized (rating 4) if:

- solvency ratio 1 is below 8% and / or
- solvency ratio2 is below 6% and / or
- Equity ratio (leverage) is less than 3%.

Major undercapitalized (rating 5) if:

- solvency ratio 1 is below 5% and / or
- solvency ratio 2 is below 4% and / or
- Equity ratio (leverage) is less than 2%.

Conclusions

A bank is expected to maintain adequate capital icompared with the nature and extent of risk, and management's ability to identify, measure and control these risks.

To determine the adequacy of capital is taken into account the effect of credit risk, market and other risks to the financial condition of the bank. Types and size of risk in bank activity, determine whether the capital should be above the minimum level required by regulations to cope with unintended consequences.

Bibliography

1. Bătrâncea I., Trenca I. (coordinators), Bejenaru A., Borlea S.N. (2008), *Analiza performanţelor şi riscurilor bancare*, Editura Risoprint, Cluj-Napoca
2. Busch, A. (2008), *Banking Regulation and Globalization*, Editura Oxford University Press, USA
3. Clay M., Farley P., Hunt R., and LaFleche T., (2010) *EMEA Banking 2010 Top 10 Predictions: The Year of Intelligence* (Electronic Edition), http://www.amazon.com/EMEA-Banking-2010-Top-predictions/dp/B0036OGFJW/ref=sr_1_196?ie=UTF8&s=books&qid=1265271202&sr=1-196
4. Gleeson S., (2010), *International Regulation of Banking: Basel II, Capital and Risk Requirements,* Hardcover
5. Trenca,I. (2008), *Tehnica bancara*, Ed 4-a, Casa Cartii de Stiinta, Cluj - Napoca