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THE STRUCTURE OF THE TOTAL CAPITAL REQUIREMENT AFTER THE IMPLEMENTATION OF CAPITAL REQUIREMENTS DIRECTIVE IN THE POLISH BANKING SYSTEM

EDWARD WISZNIOWSKI, PH.D.

The Wroclaw University of Economics, Poland

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Abstract: One of the key elements of effective financial banking management is the ability to quickly identify and determine the degree of risk a bank faces as a result of hazardous actions it undertakes. The rules of the market research existing in the Polish banking system for more than two years are based on regulations adopted by the European Parliament. The present article discusses the risks and their significance in the total capital requirement when calculating the solvency ratio. The analysis of the period from June 2007 to June 2009 shows that credit risk and operational risk exert the greatest impact on the value of the bank solvency ratio.

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Introduction

The primary role of banks, which serve as intermediaries in the money turnover, is a transfer of money. This should be effective not only from the point of view of donors and recipients. More importantly, it should have a secure turnover. Banks should, therefore, be financial institutions, which offer safe and credible services. Especially today, in the time of the financial crisis, the above statement is of particular importance. In March of 2007 the Commission for Banking Supervision (currently the Financial Supervision Commission), being in charge of the Polish banking system, obliged banks to apply the regulations of the Capital Requirements Directive, also known as Basel II. As a result of implementation of these provisions and publication of the changes in the Polish Banking Law, banks were committed to manage the risk banking and to present new parameters, indicating the level of risk incurred. The research question raised by this article covers the problem of security of banks in conditions of an economic crisis, by means of, for instance, assessing the size of capital requirements, which stimulate the level of the solvency ratio, whose minimum value should not be less than 8%.

Banking risks

Banking activity has always been at risk, which can be defined as a measurable uncertainty (Knight, 1921). Banking risks should therefore be defined as a measurable and expressed in money uncertainty, threatening the functioning of banks. From the factors causing bank risk one can extract their two sources: external factors and internal factors. External factors include those which are independent of banks, and connected, for example, with political, economic prosperity, social, and general market situation. Internal factors are those that have their source within the banks and they are a result of errors in management, organization and implementation of incorrect banking activities. “The essence of risk assessment is about determining the negative effects that may be caused by the above mentioned risks, which then may influence the proper functioning of banks- especially occurance of a loss, which burdens the Owner’s Equity and directly threatens interests of the owners”..Today, in the world of globalizing economy, banks are exposed to many risks, which list is not exhaustive. The Capital Requirements Directive draws attention to the need of exploring the various risks associated with the activities of banks. Among those one needs to pay a particular attention at least to the following:

- credit risk - the risk of the borrower not fulfilling the obligations they have towards a bank;
- operational risk - the possibility of losses arising from the unsuitability or failure of internal processes, people and systems, including the legal risks;
- interest rate risk - the risk of exposure or loss arising from the possibility of changes in interest rates;
- market risks, including currency risk - the risk of exchange rate fluctuations in the relation to the national currency;
- concentration risk exposure - refers to the situation of an excess involvement of the bank in relation to one or more persons who are related by capital or management;
- capital risk - the risk of improper structure of Owner’s Equity in relation to the scale and type of activity;
- geographical risk - the risk threatening the financial results as a result of a diverse geographical area of activity;
- loss of reputation - the risks associated with possible loss of reputation by the bank, which may result in deposits’ withdrawals;
- risk of stress (stress testing) - the risk resulting from the adoption of erroneous assumptions and parameters when simulating events investigating the financial sturdiness of banks.

The large, although given as an example, number of risks, the need for their analysis and risk reporting obligation, forced banks to separate their organizational structures and form specialized departments, estimating the size of these risks and transferring the results of analysis for banking supervision.

Impact of risk on bank solvency

A basic measure used for describing banks’ solvency is the solvency ratio, also referred to as the capital

adequacy. This ratio reflects the level of Owner's equity absorption with reference to risks taken by banks, and its minimum value, determined in the Polish banking law, is 8%. In case the value of this ratio is below the specified minimum level, the bank shall be subject to special supervision by the Financial Supervision Commission. The Commission may decide whether the bank shall be refurbished, taken over by another bank or whether it shall declare bankruptcy.

In other words, the solvency ratio (SR) is defined as the quotient, whose numerator is the bank's in-house funds (IF), and whose denominator is multiplied by 12.5 total capital requirement (CCR). The total capital requirement is the sum of the capital requirements for all risks, plus the value of risk-weighted assets (RWA) multiplied by 8%. The formula for calculating the solvency ratio is therefore as follows:

$$SR = \frac{IF}{12.5 \cdot CCR} = \frac{IF}{12.5 \cdot (8\% \cdot RWA + RO + PR)} = \frac{IF}{RWA + 12.5 \cdot (RO + PR)}$$

where: RO - the capital requirement for operational risk, PR - the capital requirements for risks other than credit risk (reflected by the RWA), and operational risk.

From the perspective of banks and their depositors, what is important is what capital requirements to cover specific risks gain on value, and how has the solvency ratio changed over the research period.

FIGURE 1. CHARACTERISTICS OF THE POLISH BANKING SYSTEM

Specifications	06.2007	06.2008	06.2009
Number of banks	649	644	650
Number of employees	161 260	173 646	178 309
Number of bank offices (including branches)	12 998	13 923	15 017
Total balance (million euro)	182 044.4	218 807.7	263 050.5
Total loans (million euro)	93 809.4	122 534.3	156 631.5
Total deposits (million euro)	95 393.5	110 861.2	131 135.3
Net income (million euro)	1 792.0	2.168.6	1.083.1
Deposits/loans ratio	101.7%	90.5%	83.7%
(RTA) Return on (Total) Assets	2%	2.1%	0.8%
(RE) Return on Equity	27.5%	27.4%	11.3%
Loan risks (out of overall loans given)	4.7%	3.8%	4.2%
Number of banks with a solvency ratio below 8%	1	2	6
Equity (million euro)	13 925.5	16 239.0	21 964.7
The total capital requirements, including:	8 055.6	11 935.9	14 032.7
Credit risk (million euro)	8 449.6	10 316.5	12 199.9
Operational Risk (million euro)	x	1 319.9	1 415.5
other risks, including: (million euro):	506.0	299.6	417.2
a) market risk	87.6	88.8	84.4
b) interest rate risk	197.4	177.9	169.0
c) large exposure limit risk	129.3	28.7	127.4
d) concentration risk capital	0.0	0.0	0.3
e) other	91.6	4.1	36.1
The structure of the total capital requirement:	100%	100%	100%
Credit Risk	94.3%	86.4%	86.9%
Operational Risk	x	11.1%	10.1%
Other risks	5.7%	2.5%	3.0%
Solvency ratio (13/14)	12.4%	10.9%	12.5%

Source: Komisja Nadzoru Finansowego, Warszawa 2009.

Polish banking sector and the total capital requirement

The present analysis was carried out based on the data of the Financial Supervision Commission in regular six-months-time sessions, starting in June 2007. The information presented here relates to the entire Polish banking sector, which includes 650 banks, of which 52 banks are commercial banks functioning in the form of limited liability companies, 19 branches of foreign credit institutions and 579 cooperative banks (data from 30.06.2009).

Even though the Polish banking system shows no significant risk of solvency loss, attention should be drawn to the following risks, which include the effect of the global financial crisis:

- deepening discrepancy between the state deposits, and relative faster-growing state loans. This situation can cause problems with maintaining liquidity, especially when taking into account the fact that the structure of the deposit, the percentage of the settlement accounts is around 50-55%;
- significant decline in the profitability of banks due to the fact that over the last year their net value profit decreased by half. In a condition of a noticeable increase in the number of banks and their employees, fixed costs will keep increasing, and with very limited possibilities for crediting actions (a shortage of depos-

its) the situation will contribute to a further decline in profitability;

- increase in the number of risk loans within the total number of loans given.

The result of these adverse events is a lower increase of banks' capital, which in turn is causing a growing number of banks whose equity ratio was less than 8%, despite the fact that the average solvency ratio of the sector showed the correct values, i.e. ranging between 10.9 to 12.5%.

When analyzing the structure of the total capital requirement, one should notice a dominating (over 86%) share of the credit risk. This means that banks run the risk of having the given loans unpaid. Operational risk, the amount of which has been published since 2008, represented approximately 12% of the total capital requirement and has remained stable. Before having revealed the impact of this factor on the total capital requirement, the share of credit risk was higher and was reaching up to 94.3%. The remaining risks, including market risk, interest rate risk, large exposure limit risk, concentration risk capital and others, do not exceed 3% of the capital requirement. This low importance of the "other" risks should to be neglected in terms of research and analysis as they may increase suddenly. An example of this may be the drop of the domestic currency value as compared to other, foreign currencies, which took place in early 2009.

Conclusion

As a result of the implementation of the total capital requirement under the rules for Capital Requirements Directive to the Polish banks, credit risks danger has decreased only to a small extent. This type of credit risk remains dominant, though a threat of operational risk is more and more visible. Other risks do not have a significant impact on the solvency of the Polish banks. This is mainly due to a prudent credit policy employed.

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