MINIMUM CAPITAL REQUIREMENT FOR COVERING CREDIT RISK UNDER THE NEW BASEL CAPITAL ACCORD – BASEL II

Part 1

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The Basel Committee for Banking Supervision of the Bank for International Settlements (BIS) was established in 1975 with the aim of ensuring stability in the banking sector around the world. To this end it has developed approaches, methods and prudent banking rules for commercial banks. The Committee's first integrated paper was approved in 1988, entitled the Basel Capital Accord (BCA), termed also Basel I. This document has so far formed the basis for the activity and rules of national regulators around the world. With regard to the new trends in financial markets and approaches to risk management, the Basel Committee in 1999 began a widespread international consultation process for revising the BCA. The results of these five years' of endeavour, consultation and compromise have resulted in a New Basel Capital Accord (NBCA), termed also Basel II, which was approved on 26 June 2004 with effect as of 2007. This approval of the New Basel Capital Accord represents a further step towards unifying the rules for banking supervision and raising the stability and transparency of the world's banking system.

The New Basel Capital Accord (Basel II) is, in contrast to Basel I, an extensive, complex and methodologically demanding paper for prudent banking, and therefore represents a challenge primarily for banks, national regulators, as well as businesses. Preparations for implementing the Accord's rules are in full flow around the world and the leading banks began working on this task right from the very publication of the first consultation paper in June 1999.

From the aspect of its content, the New Capital Accord is based on three pillars:

Pillar 1: a minimum capital requirement for covering credit, market and operational risk,

Pillar 2: rules and the procedures of national regulators in the monitoring and assessment of banks' capital adequacy, the levels of conditions required in using the individual approaches for determining the minimum capital requirement, as well as in assessing the overall system of banks' risk management,

Pillar 3: market discipline and the disclosure of information by banks.

In this article we will deal with the minimum capital requirement for covering the credit risk from receivables towards sovereigns, banks, businesses and the retail segment, which forms the most extensive part of Basel II. Due to the extensive nature of the issue we shall here not look at security instruments and their risk-minimising effects. We shall, however, examine in detail the individual approaches contained in the New Basel Capital Accord for calculating credit risk and the minimum capital requirement. We wish also to draw attention to and quantify the advantages provided by Basel II to small and medium-sized enterprises. In the conclusion we shall examine how the cost of credit will be influenced by the introduction of individual Basel II approaches for different business ratings and sizes.

1. Minimum capital requirement for covering credit risk

Credit risk is defined as the risk resulting from the failure of the counterparty (debtor) and is connected with losses on the side of the creditor (bank). A counterparty's failure in this context is understood to mean the state reached by a debtor when it is not able or willing to settle its obligations towards the bank in accordance with the agreed conditions. The loss resulting from this risk comprises two parts:

1. expected losses from a debtor's failure (EL),
2. unexpected losses from a debtor's failure (UL).

With the aim of eliminating the transfer of these losses from the risk to the depositor, a bank must correctly identify, quantify and create funds for covering the credit risk.

While expected losses are a component of the calculated costs of a bank's credit business and are reflected directly in the interest rate, a bank should cover unexpected losses by a minimum capital requirement.

The minimum amount of a bank's own resources intended for covering credit risk, ie regulatory capital (RC), is set as in the case of Basel I at 8% of the bank's risk-weighted receivables towards the counterparty, ie the following basic relations apply:

$$\frac{RC}{RWR} = \frac{RC}{R \,.\, RW} \geq 0{,}08 \qquad (1)$$

From which: $RC_{mina} = RWR \,.\, 0{,}08 = R \,.\, RW \,.\, 0{,}08$ (2)

Where:
RC – regulatory capital of a bank in mill. SKK
R – value of receivable in mill. SKK
RW – risk weighting (expressed as a decimal)
RWR – risk-weighted receivable in SKK
$RCmina$ – minimum regulatory capital in mill. SKK

From these basic relations it can clearly be seen that a key variable in quantifying the minimum capital requirement is the receivable's risk weighting. It is primarily in the manner of determining this variable for individual receivables that lie the main differences between Basel I and Basel II, as well as between the individual approaches contained in Basel II itself. Several approaches with a varying degree of administrative demands, complexity and risk sensitivity are given in Basel II for quantifying the minimum capital requirement.

2. Approaches to quantifying the minimum capital requirement

In contrast to Basel I, Basel II provides the following three approaches to calculating the minimum capital requirement for covering credit risk:

1. Standardised Approach (SA),
2. Foundation IRB Approach (FIRB),
3. Advanced IRB Approach (AIRB).

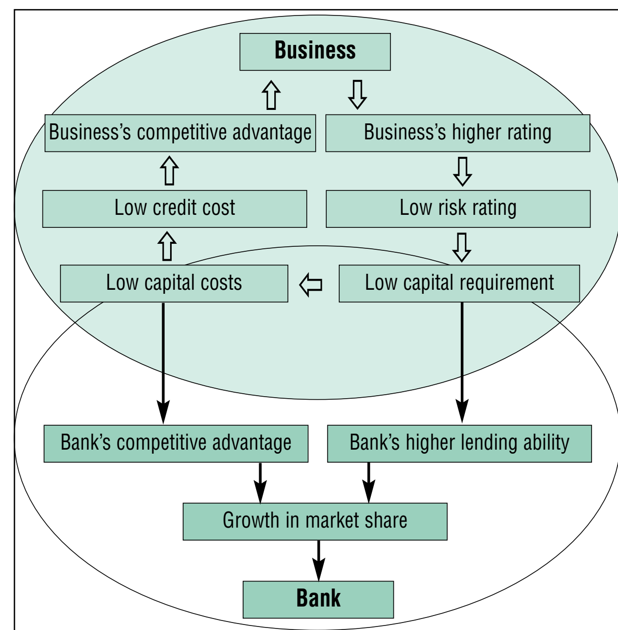
The administrative demands, implementation costs and amount of the minimum capital requirement in the case of the individual approaches differ significantly.

Fig. 1 Administrative demands, implementation costs and capital requirement of Basel I and of the individual approaches of Basel II

	Complexity and demands	Implementation costs	Capital requirement
Basel I	–	–	+
Basel II Standardised Approach			
Basel II FIRB			
Basel II AIRB	+	+	–

A successful introduction of the new rules into banks' practice will require large investments in information systems, preparatory training of professional staff and improving the overall system of risk management. The extent of this initial investment will, according to [4], depend on how the particular bank at present has its rating systems set and on which approach it opts for. According to [7], initial investments will be returned in the form of lower capital requirements. Achieving a lower capital requirement is though first and foremost conditional upon a client having a high rating. A low capital requirement should be manifested at a bank in the form of lower costs for capital and consequently a lower cost of credit for businesses, which for both sides means a competitive advantage. On the side of the bank a low capital requirement will also be manifested in the form of a growth in its lending abili-

Fig. 2 Influence of the highest rating of a business on the bank and the business itself in the Basel II Advanced Approaches



ty. A competitive advantage of low costs for credit together with a bank's high lending ability creates good conditions for the bank to increase its market share.

In this regard it must be emphasised that, conversely, a business's low rating will negatively influence the bank and business in all the mentioned ways.

2.1. Standardised approach (SA)

This approach of quantifying $RC\text{min}a$ in accordance with Basel II is a certain modification of the approach used to date and is based on an external rating of the bank's client. The difference between the SA and the approach used to date lies in the more sensitive, more differentiated and more objective approach to risk, ie to assigning risk weightings to individual receivables. The Standardised Approach divides receivables from loans into several categories according to the counterparty and for each of them sets the procedure quantifying the minimum capital requirement.

2.1.1. Receivables towards sovereigns and banks

For receivables towards sovereigns and banks risk weightings under Basel I were set on the basis of the so-called club principle, ie whether or not they were OECD members and according to in which currency the loan was provided. For example, while a receivable from a loan in a foreign currency to the central government of an OECD member state had a risk weighting of 0%, in the case of a non-member state this weighting was up to 100%. This leads, according to [6], to such paradoxical situations that covering a receivable towards Singapore, with an AAA rating* requires a greater volume of capital than covering receivables towards Turkey, with a B- rating. In a similar vein a receivable towards a commercial bank seated in an OECD member state has under Basel I a risk weighting of 20%, while a bank seated in a non-member state has a 100% risk weighting. Basel II removes such shortcomings through the fact that it allows receivables towards states to be assigned risk weightings on the basis of their actual risk assessed and set by their rating, and this from 0% in the case of the highest rating and 150% in the case of the lowest rating.

In the case of receivables towards commercial banks the Standardised Approach provides two options for assigning a risk weighting:

1. Deriving the risk weighting from the rating of the state in which the bank is seated – under this option banks may gain a risk weighting one grade higher than the state in which they are seated, up to the rating category corresponding to a risk weighting of less than 100%. In other cases banks are assigned the risk weighting of the state in which they are seated. This option is very advantageous for smaller banks seated in a state with a high rating and which have difficulty in obtaining a good rating (Table 1).

2. The assignment of a risk weighting on the basis of the rating given by the bank itself, differentiated according to maturity; below three months and above three months (Table 1).

2.1.2 Receivables towards businesses

It is in this, the largest portfolio in terms of the number of entities and lending volumes, that we find the most significant changes against Basel I. Under Basel I receivables towards businesses are assigned a flat-rate risk weighting of 100% regardless of their creditworthiness and size of the individual businesses. This leads to the cross-subsidising of businesses with a lower credit standing by businesses with better creditworthiness [8]. The Standardised Approach of Basel II allows for a differentiated approach in assigning risk weightings to businesses and this with regard to creditworthiness as well as the size of individual businesses. Large businesses are assigned a risk weighting on the basis of their creditworthiness of from 20% for the highest rating through to 150% for the lowest rating. Small and medium-sized enterprises with a total loan of up to EUR 1 million may be assigned to the retail portfolio, where the risk weighting is set at a flat rate of 75%. Given the size structure of businesses in Slovakia, a significant number of enterprises will be assigned to this portfolio and thus will be able to benefit significantly. The classification of loan receivables and their risk weightings by rating class under Basel I [9] and Basel II [10] are given Table 1.

2.1.3. Retail receivables

Besides loans of up EUR1 million for small business, we can in this portfolio also include other purpose-specific and non-purpose-specific loans to natural persons, with a flat-rate risk weighting of 75%.

The risk weighting for loans secured by real estate that is or will be occupied by the debtor is reduced from 50% to 35%.

In the case of the Standardised Approach the bank assigns to receivables towards sovereigns, banks and large businesses unable for various reasons to submit their rating, a risk weighting of 100%, 50%, or respec-

* Standard and Poor's rating

Tab. 1 Classification of receivables from receivables from loans and their risk weightings by rating class

		Basel II						Basel I	
		Rating / Risk weighting							
		AAA to AA-	A+ to A-	BBB+ to BBB-	BB+ to B-	Below B-	Without rating	OECD	OST(4)
Sovereign		0%	20%	50%	100%	150%	100%	0%	100%
Bank	A(1)	20%	50%	100%	100%	150%	100%	20%	100%
	B1(2)	20%	50%	50%	100%	150%	50%		
	B2(3)	20%	20%	20%	50%	150%	20%		
Businesses			BBB+ to BB-		Below BB-				
	20%	50%	100%		150%		100%	100%	
Retail: Small enterprises and other retail portfolio entities with a loan of up to EUR 1 million								75%	
Loans secured by real estate that is or will be occupied by the debtor							35%	50%	
Loans secured by real estate intended for purposes other than housing							100%	100%	

A(1) – derivation of risk weighting from the state of the bank's seat
B1(2) – assignment of risk weighting on the basis of the rating given by the bank itself with a maturity of more than three months
B2(3) – assignment of risk weighting on the basis of the rating given by the bank itself with a maturity of up to three months
(4) – OECD non-member states

tively 20% and 100%. Given the fact that ratings of businesses creditworthiness by external agencies is currently not very widespread in Slovakia, it may be presumed that banks will in the coming years opt more frequently to use the Basel II Standardised Approach.

After assigning a risk weighting to a receivable the $RC_{\min b}$ is calculated according to the relation (2). The variable $RC_{\min b}$, ie the calculated minimum regulatory capital ($RC_{\min a}$) pertaining to a unit of the nominal value of the receivable has in the case of this approach merely an informative nature and is calculated from the $RC_{\min a}$ as follows:

$$RC_{\min b} = \frac{RC_{\min a}}{R} RW \,.\, 0{,}08 \qquad (3)$$

We shall deal with the Advanced Approaches and the quantification of their influence on the cost of borrowing in the next article.

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To be continued in issue 11/2005