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The New Approach for Risk Regulation in Banks

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ABSTRACT

The purpose of this report is to present the necessity of proceeding to new reforms in bank regulation and to increase the stability and risk sensitivity of the capital base under applying the Standardised Credit Risk Assessment Approach (SCRA) in banks. The dynamics in the bank regulation and supervision of credit risk assessment approaches are explored. In the paper, a thorough theoretical-methodological and historical-logical analysis was made of the evolution of the development and chronology of the global regulatory frameworks for banks - Basel 1, Basel 2 and Basel 3. The contemporary projections and challenges for the banks' management under the new regulatory and institutional changes are presented. The SCRA is a positive asset in bank capital regulation in contemporary banking. The revisions to the regulatory framework – Basel 3 by is a long continuous process influenced by numerous economic, social and political factors. The preparation of the Bulgarian banking system for a new reform of financial regulation is analyzed. The need for adoption of a new risk-based approach for capital assessment and the importance of transparency in bank financial reporting is proved.

Keywords: *Basel Committee on Banking Supervision, Standardised Approach (SA), Credit Risk, Bank Exposures, Risk-Weighted Assets (RWA)*

Introduction

Banks in the EU are at the verge of introducing new regulatory and institutional changes in the context of increasing the stability and risk sensitivity of the capital base under applying the Standardised Credit Risk Assessment Approach (SCRA). The Basel Committee on Banking Supervision held a number of discussions and empirical analyses, resulting in the conclusion that the risk-based approach that is applied to measuring capital is subject to criticism. Critical analyses and recommendations focus on its changing state and uncertainty when doing a more precise risk weighting of assets (BCBS, 2013). It proceeds from the fact that the applicable the

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SCRA[1] ***is based on awarded external credit ratings***. Practically, there are numerous problems in the areas described below that are arising from the relations between the credit ratings agencies, banks and supervising authorities.

- *Mechanical confidence of banks in credit ratings*. To fully address all factors influencing the quality of banks' credit portfolios, it is necessary to apply an ***advanced standardised approach*** based on the comparability (contradistinction) of the *credit ratings given by an external rating agency* and the *individual judgment (assessment) by the bank management* for the purposes of the risk weighting of exposures. It is reasonable for banks to be required to complement the work of credit rating agencies with their own research and complex checks for the purposes of banking risk supervision.
- *Lack of sufficient number of clients with assigned ratings in the bank's portfolio.* Banking models applied to exposures without credit rating are not always accurate, and because of their complexity, it is difficult to prove their accuracy to supervisors. Applying a ***new approach to standardised risk modeling*** based on ***fixed risk weights*** on specific exposure groups will improve the reliability and transparency of the risk-based approach to credit risk assessment.

Dynamics in the regulation and supervision of different approaches to credit risk assessment

The first Basel Accord was created in 1988, restricting the power of banks to applying only one approach to risk weighting of assets. The second Basel Accord was launched in 2001, including more choice in identifying the equity that needs to be set aside for credit risk - banks can use their own risk management system[2]. In doing so, the Basel Committee on Banking Supervision has allowed banks to move from the External Credit Risk Assessment Approach (ECRA) to the Internal Ratings-Based (IRB) approach. These internal risk management models are subject to the approval of the relevant national supervising authority. In this way, supervisors will ensure that the level of risk that banks are taking corresponds to the minimum required capital needed to cover future losses. By applying the internal ratings-based approach, banks are encouraged to disclose individual information about the risks in the credit portfolio. The concepts underlying in Basel 2 and subsequently in Basel 3 include three separate sections, called pillars: (1) minimum capital requirements; (2) a supervisory overview of capital adequacy; (3) market discipline. A fundamental principle in the application of the three-pillar approach is the adoption of a *"risk-based approach to institutional intervention by supervisors by creating good practice for managing and supervising the risks of banking activity"* (Feschiyan, 2005).

The financial and economic crisis since 2007 revealed that some Tier 1 instruments failed to take on the dynamics of the banks' risk profile. According to Quignon (2011), this is

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[1] The Standardised Credit Risk Assessment Approach (SCRA) is used by the vast majority of EU banks within or outside Basel Committee jurisdictions

[2] The theoretical interpretation of the minimum capital requirements for credit risk under Basel 1 and Basel 2 is beyond the scope of this paper. For details on this, see Feschiyan, D. (2005). Accounting as a source of information on capital adequacy management of banks and the new Basel Capital Accord. Sofia: Economy; Andasarova, R. (2015). Credit risk management in commercial banks in the conditions of financial crisis (financial and accounting aspects). Dissertation for awarding the educational and scientific degree "doctor".

particularly true for privileged shares[3] in English-speaking countries. In September 2010, The Group of Central Bank Governors and Heads of Supervision announced higher requirements for minimum capital standards in the banking sector, known as Basel 3. The aim of the changes is to increase banks' ability to face challenges arising from financial and economic stress and reducing the risk of switching from the banking system to the real economy. In other words, in the framework of the Third Basel Accord, a large number of banks must maintain more and better-quality capital than the previous regulatory frameworks - Basel 1 and Basel 2.

In December 2014, the Basel Committee on Banking Supervision issued an advisory document to review the SCRA (BCBS, 2014). The proposals in the project are aimed at enhancing the effectiveness of applying the current minimal standard of capital - Basel 3 - in the following four areas:

- limiting dependence on external credit ratings;
- reducing the volatility of risk-weighted assets (RWA) between banks in different jurisdictions;
- comparability of the Standardized approach (SA) with the Internal Ratings-Based (IRB) approach;
- Increasing transparency on the application of standards.

By March 2015, a deadline was set for subsequent comments, criticism, and suggestions from the professional community. On 10 December 2015 the Committee published a second consultation paper to review the SCRA (BCBS, 2015). The document contains proposals that differ to a large extent from the original concept of limiting the use of external credit ratings. It is noteworthy that the use of external rating models is perceived as a leading requirement in the context of the risk-based approach to credit risk assessment.

In December 2017 the process of final approval and publication of the proposed *new package of reforms under the Basel 3 standard* (called Basel 4 by some authors) was completed. The new draft measure is approved by the The Group of Central Bank Governors and Heads of Supervision and will enter into force in early 2022. The main purpose of the reforms is to improve the SCRA and to limit the use of internal rating models (BCBS, 2017).

Violation of the regulatory framework leads to expensive supervisory actions that could limit the functioning of the bank. Consequently, banks have an incentive to maintain higher capital positions than required (capital buffer), as insurance against breaching the minimum capital requirement for regulatory purposes (Milne & Whalley, 2001). This theory is a reference point to the understanding of maintaining the minimum regulatory capital required by the Bank for International Settlements (BIS) through regulatory authorities.

1. Contemporary dimensions and perspectives to the revised Basel 3 framework

The need to adopt a ***new reform package under Basel 3*** is conditioned by the fact that there are jurisdictions for which a clearer guidance is needed on *certain matters* related to the lack of transparency and comparative information and *in some aspects* concerning the

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[3] This is a special security that has qualities of an equity and a debt instrument at the same time, and is generally considered to be a hybrid instrument. In order to be recognized as an equity, hybrid debt instruments must meet the criteria for loss absorption, payment flexibility and durability.

consistent application of standards globally. In particular, the critical areas that the Committee aims to improve are: improving the risk sensitivity of bank equity; revision of the internal credit risk rating model[4] to limit its application to certain categories of risk exposures; complementing the risk weighted asset approach with a revised leverage ratio requirement.

In December 2017, the Basel Committee on Banking Supervision published the proposed reforms to the current Basel 3 standard. The new rules (called Basel 4 by some authors) were designed to prevent taking too many risks from financial institutions. The revised standardised approach to credit risk compared to the existing standardised approach contains the following benchmarks:

*Applying of an advanced standardised approach for exposures to rated banks and exposures to rated corporates with credit ratings***.** The existing SA weighting approach, based on ***external credit ratings*** for exposures to banks and businesses, has not been changed from a methodological point of view. Additional rules and requirements are introduced for the external ratings awarded. The Committee and the professional community are aware of the need to implement the so-called "due diligence" analysis. It is emphasized that in the case of a higher risk weight in the process of individual analysis, banks must apply the higher risk weight for the respective exposure. The main objective is to avoid banks' mechanical confidence in external credit ratings on the one hand, and, on the other hand, to prevent and protect equity against the dynamics of banks' risk profile.

A comparative characteristic of the risk weights for exposures to banks and companies determined under the Basel 3 methodology and applying the new credit risk assessment rules is presented in the following table (Table 1):

Table 1. Risk weights for exposures to rated banks and exposure to rated enterprises (before applying the "due diligence" analysis) in applying the SCRA

Exposures to banks	**Risk weight of assets under Basel 3**		**Risk weight of assets under the revised Basel 3 framework**	
	Exposures maturing up to 3 months	Exposures maturing over 3 months	Short-term exposures (with residual maturity up to 3 months)	Base risk weight
AAA to AA-	20%	20%	20%	20%
A+ to A-	20%	50%	20%	30%
BBB+ to BBB-	20%	50%	20%	50%
BB+ to B-	50%	100%	50%	100%
Lower than B-	150%	150%	150%	150%
General corporate exposures	Base risk weight		Base risk weight	
AAA to AA-	20%		20%	
A+ to A-	50%		50%	
BBB+ to BBB-	100%		75%	
BB+ to B-	100%		100%	
Lower than B-	150%		150%	
Unrated	100%		100%	

Source: BCBS, 2017 and Regulation 575/2013/EC

[4] Regarding the application of the internal ratings-based approach, the Basel Committee on Banking Supervision makes it possible to use two options: - to apply a Foundation IRBA where the bank can only assess the probability of default /PD/, and to use data from the supervisor and an Advanced IRBA for the other risk parameters, which allows, depending on the specificity of each risk component, banks to use their own estimates of risk Parameters (PD, LGD, EAD and M) subject to prior approval by the national supervisory authority.

*Introducing a new standardised credit risk approach for exposures to unrated banks***.** The new risk assessment model provides a modern toolbox that enables supervisors to easily track risk-weighted assets without having to prove and analyse their internal risk management rules and models. To this end, banks should group their exposures into three separate sections called classes. Three classes of exposures are defined, and the risk-weighted value is obtained by multiplying by the corresponding risk weight, which varies between 20% and 150% (Figure 1 and Table 2).

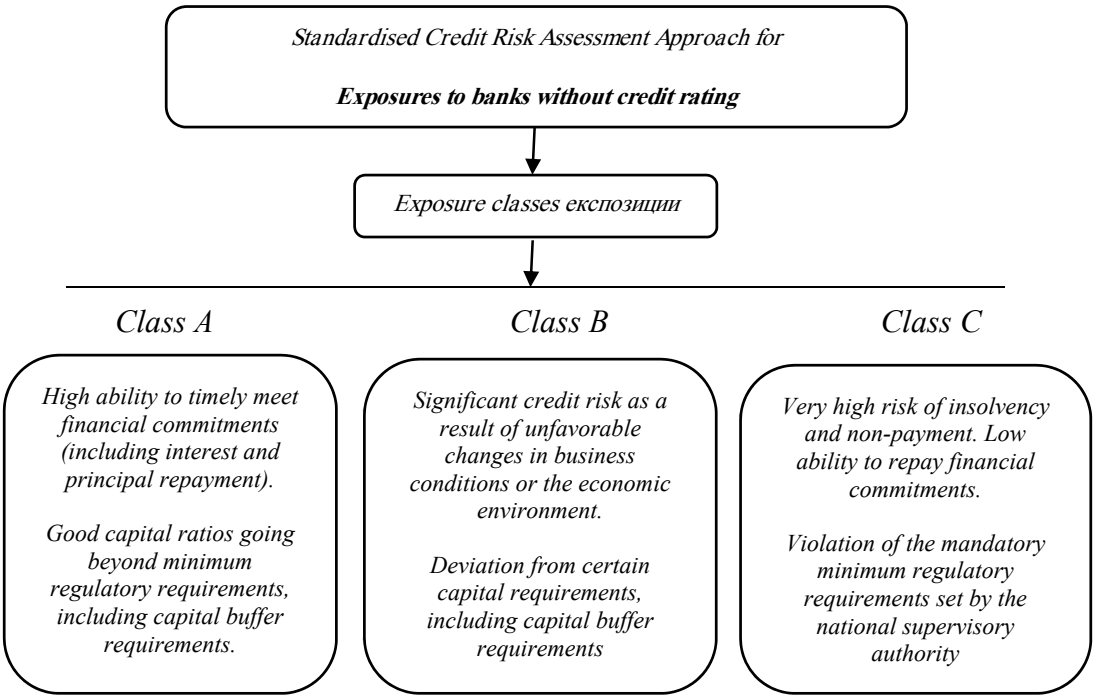

Figure 1. Exposure classes to unrated banks

Source: BCBS, 2017

These exposure classes can be used in two aspects. On the one hand, they serve as an assessment of the counterparty and, on the other hand, for assigning risk weights for supervisory purposes (Table 2).

Table 2. Risk weights for exposures to unrated banks

Credit risk assessment of the bank counterparty	Class A	Class B	Class C
Base risk weight	40%	75%	150%
Risk weight for short-term exposures (residual maturity up to 3 months)	20%	50%	150%

Source: BCBS, 2017

Applying an improved standardised credit risk approach for exposures to unrated corporates For exposures to corporates a more detailed table has been developed (Table 3). A specific risk weight is applied to exposures to small and medium-sized enterprises (SMEs)[1]. In addition, the

[1] *Corporate exposures to small and medium-sized enterprises (SMEs) whose net sales revenue from the previous year is equal or does not exceed BGN 100 million.*

revised standardised approach includes self-treatment of exposures to project financing, facility financing, and the financing of the supply of raw materials and commodities.

Table 3. Risk weights for exposures to unrated corporates and for retail exposures

Exposure classes	Risk weight of assets under Basel 3	Risk weight of assets under the revised Basel 3 framework
Specific exposures to SMEs without credit rating	Unregulated	85%
Retail exposures[1]	75 %	75%

Source: BCBS, 2017 and Regulation 575/2013/EC

*Introduction of a new standardised credit risk approach for exposures secured by mortgages on immovable property***.** The calculation of the risk-weighted exposure amount is based on the new ratio proposed by the Basel Committee, which does not exist in the current framework -„***loan-to-valuation" (LTV)***. The high LTV values correspond to a higher risk asset, resulting in a higher risk weight for risk exposure that will "burden" equity significantly more and vice versa (Tables 3 and 4). When calculating and analyzing the LTV, it is not negligible that the loans granted as a separate category of a financial asset are recognized and stated in the bank's financial statements under *amortized cost* (Feschiyan et al., 2017). This circumstance clearly affects the value of the asset (credit amount) in the downward direction, and hence the lower values of the LTV indicator (in the case of unchanged collateral).

In addition, the new approach to determining the risk-weighted exposure amount for mortgage-backed exposures on real estate includes a broader range of criteria, namely:

- Applying the LTV ratio depending on:
  - *mortgage-backed exposures on real estate, for which the repayment not directly dependent on the cash flows associated with ownership of the property (rent, sale, etc.);*
  - *mortgage-backed exposures on real estate, for which the repayment is directly dependent on the cash flows associated with ownership of the property.*
- Quality and effectiveness of collateral.

Table 3. Risk weights for mortgage-backed exposures on real estate for which the repayment is not directly dependent on the cash flows associated with ownership of the property

	LTV ≤ 50%	*50% < LTV ≤ 60%*	*60% < LTV ≤ 80%*	*80% < LTV ≤ 90%*	*90% < LTV ≤ 100%*	*LTV > 100%*
Risk weight	*20%*	*25%*	*30%*	*40%*	*50%*	*70%*

Source: BCBS, 2017

Table 4. Risk weights for mortgage-backed exposures on real estate for which the repayment is directly dependent on the cash flows associated with ownership of the property

	LTV ≤ 50%	*50% < LTV ≤ 60%*	*60% < LTV ≤ 80%*	*80% < LTV ≤ 90%*	*90% < LTV ≤ 100%*	*LTV > 100%*
Risk weight	*30%*	*35%*	*45%*	*60%*	*75%*	*105%*

Source: BCBS, 2017

[1] *Including exposures to individuals and exposures to SMEs (provided that the exposure value does not exceed EUR 1 million).*

In this part of the study, as a natural extension of the previous two points, an empirical analysis of the capital requirements dynamics for credit risk is made about the applicability of the risk weighting approach of the assets in the Bulgarian banking system. The survey is based on an analysis and assessment of the official data on the banking system of Bulgaria published by the BNB in the period 2014-2017 and on the published reports from banks in 2017. An important feature of the analyzed period is the introduction of the Third International Capital Standards Accord - Basel 3, reflected in the adoption of Directives 2013/36/EC[1] and Regulation 575/2013/EU[2].

There is no significant change in the ratio of the main risks to which banks in Bulgaria are exposed during the reviewed period. ***The credit risk*** continues to determine the trends in the balance sheets of bank credit institutions. The analysis of the ***capital requirements for credit risk*** in banks shows static values for the period 2014-2017. ***The percentage share of capital requirements for its coverage is over 88% of the total capital requirements for covering all risks in the banking system*** (figure 1).

Figure 1. Capital requirements for bank risks in Bulgaria, for the period 2014-2017
Source: BNB (bank supervision: supervisory disclosure, statistical data)

Since the beginning of the last financial crisis, EU banks have been subject to numerous regulations that have led credit institutions to maintain more stable capital positions, paying much more attention to risk management, incl. credit risk. The adopted changes to the bank regulation in 2013, linked to the introduction of new global capital standards (Basel 3), contribute to achieving better results, which are a prerequisite for confidence in the banking

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[1] *Directive 2013/36/EC of the European Parliament and of the Council of 26 June 2013 on the taking up and pursuit of business of credit institutions and on prudential supervision of credit institutions and investment firms OJ L 176.*

[2] *Regulation (EU) No. 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms.*

system in the country. In this respect, during the analyzed period, the share of the capital requirements for credit risk rose by 30%, maintaining its high values - over 88% at an average of 58% in the period prior to the adoption of the Capital Requirements Directive of the EU and its Regulation (2007-2013) (Figure 2).

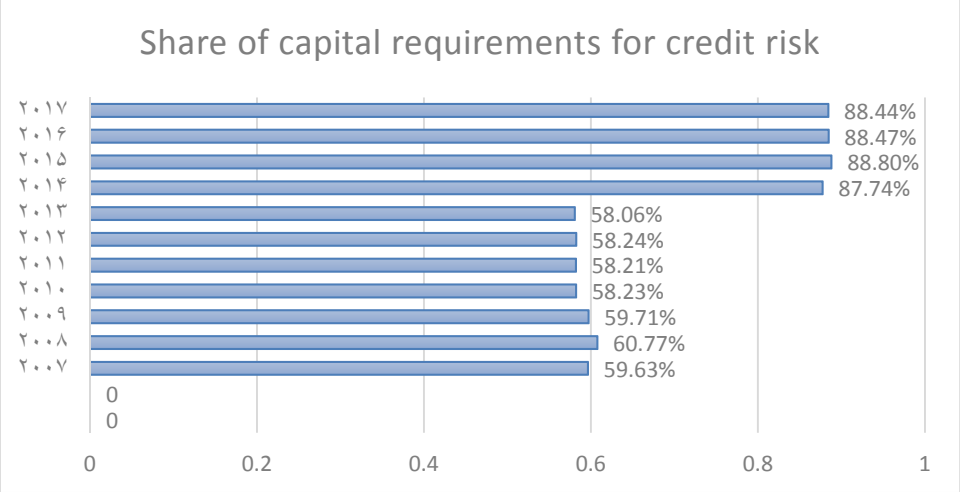

Figure 2. Dynamics in capital requirements for credit risk, 2007-2017

Source: BNB (bank supervision: supervisory disclosure, statistical data)

A fundamental principle in the calculation of minimum capital requirements for credit risk is the application of the *risk-based approach*. To determine risk-weighted assets for credit risk, banks apply the mechanism - they assess the creditworthiness of their clients by using a credit rating, and depending on how this credit rating is determined, a standardised (based on external credit ratings) or an internal (based on internal credit ratings) approach is applied. Banks in Bulgaria may use their internal credit risk rating systems provided they have received an explicit approval from the national supervisory authority. Under the new rules, banks that want to use internal models for risk measurement - for which capital requirements are lower than the standardised approach - will now need to get approval for each of these models. This is a significant change from the previous regime, according to which approvals were made for entire businesses.

Based on the officially published data on the banking system by the BNB in the period 2014-2017 a statistical survey of the approaches used for credit risk assessment and the effect of their application in the banking system in Bulgaria was made.

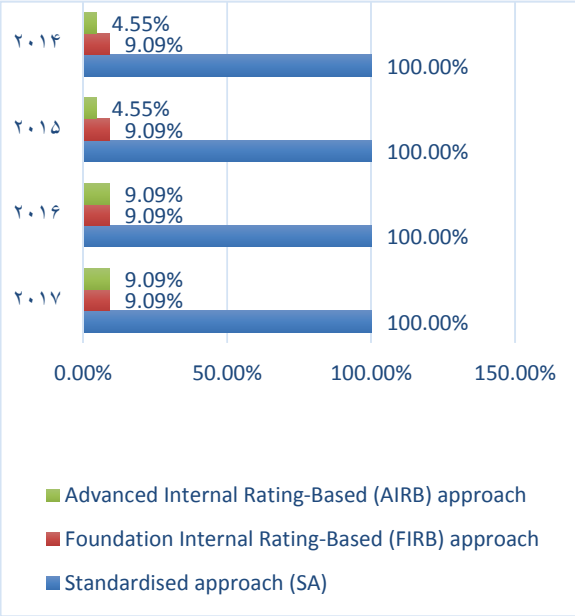

Figure 3. Normative approach to credit risk assessment for the period 2014-2017 (as a % of the total number of credit institutions in Bulgaria)

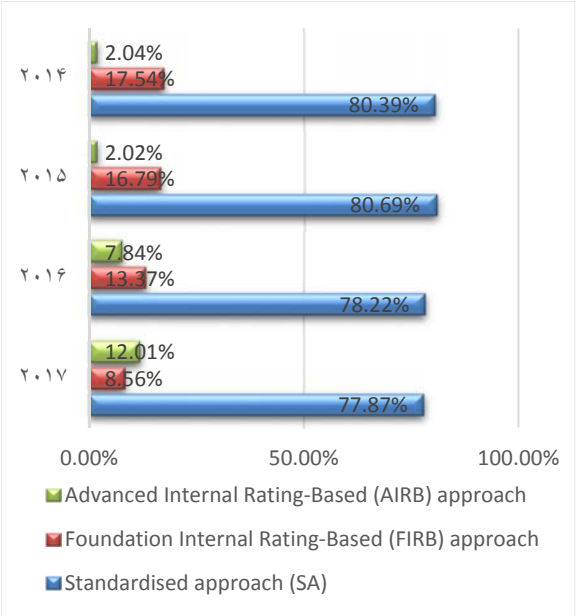

Figure 4. Normative approach to credit risk assessment for the period 2014-2017 (as a % of the capital requirements for credit risk)

Source: BNB (bank supervision: supervisory disclosure, statistical data

Experts' expectations that at the initial application of the Basel 2 requirements, and then with the introduction of Basel 3, most banks will use the standardised approach - ***based on assigned external credit ratings*** - have now been confirmed. At of the end of 2017, all banks in Bulgaria applied the SCRA. Inversely, the relative share of the applicability of the internal ratings-based approach from banks in Bulgaria is about 9% or 14% of the total capital requirements for credit risk (Figure 3 and Figure 4). As the supervisory measures taken to reduce the mechanical confidence in external credit ratings failed to meet their purpose, the Basel Committee on Banking Supervision has taken on new restrictions - adopting and implementing an ***advanced standardised approach*** based on comparability (contradistinction) of the *credit ratings given by an external rating agency* and the *individual judgment (assessment) by the bank management* for the purposes of the risk weighting of exposures.

Under Basel 3, following the Basel 2 provisions, the amount of risk weights depends on the ***class of assets*** and on the ***credit ratings assigned***. The main classes of assets (exposures) that are subject to risk weighing are those to central governments; financial institutions; corporates, retail exposures; exposures secured by mortgages on immovable property, etc. For the calculation of the *capital requirements for credit risk*, banks determine the *risk-weighted value of the exposure*. The risk-weighted value of the exposure is calculated by multiplying the exposure value by the risk weight.

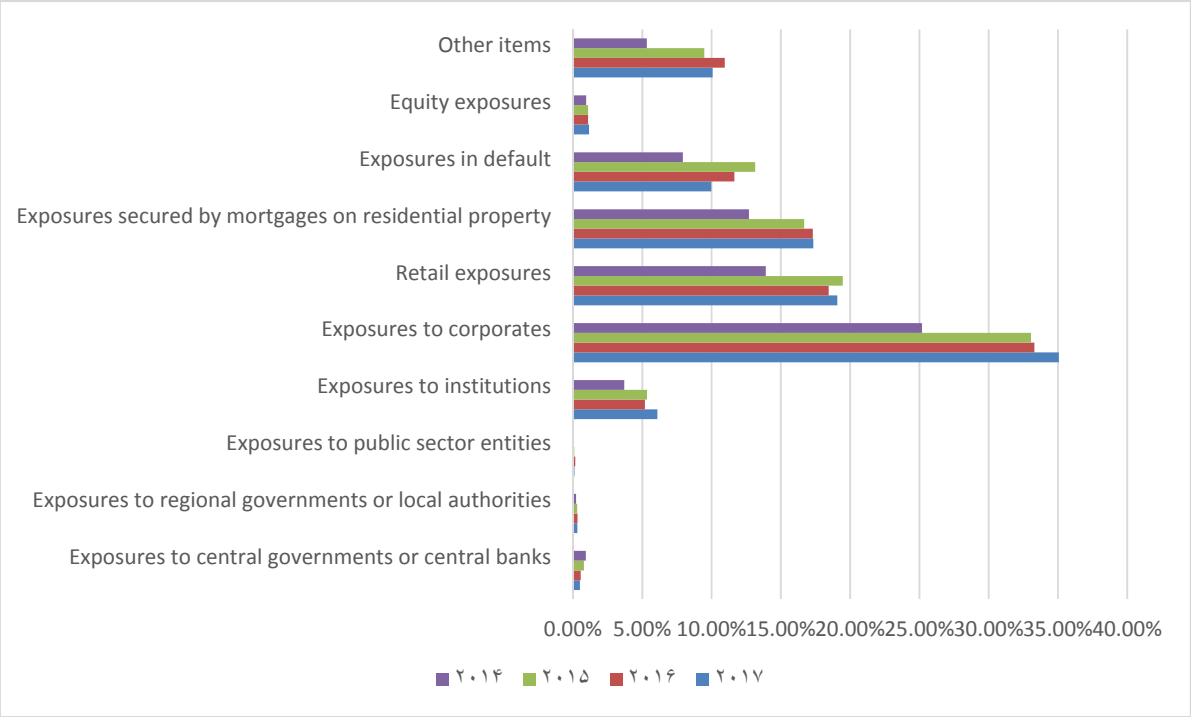

Figure 5. Dynamics of capital requirements for credit risk by exposure classes, 2014-2017
(as a % of the total amount of risk-weighted exposures under the SA)

Source: BNB (bank supervision: supervisory disclosure, statistical data)

In the surveyed period, with the highest relative share in the total amount of the capital requirements for credit risk is the "Receivables from enterprises" exposures class - 31%, followed by the “Retail exposures” class - with an average of 17% and the “Exposures secured by mortgages on immovable property” class - with 16% share. It is not to be neglected that the proposed new supervisory rules, incl. *specific rules for exposures to small and medium-sized enterprises (SMEs) without a credit rating* and *stricter regulation of mortgage-backed exposures on real estate* will affect the exposure classes with the greatest weight in determining the sensitivity of banks' equity to credit risk.

The methodology for determining risk weights when applying the SA is essential for the analysis - the use of assigned credit ratings by a recognized Credit Ratings Agency (CRA) or the application of standardised assessments subject to the requirements of Regulation (EU) 575/2013 for exposures without an assigned credit rating. The main objective is that the risk weight of each exposure reflects fairly accurately the probability of credit losses and the adequate amount of capital to the risk assumed by the bank. On the basis of the officially published supervisory data of banks in Bulgaria, it is noticeable that credit institutions use credit ratings issued by recognized CRA mainly for exposures to central governments, central banks and financial institutions as of 31 December 2017 the largest share has the "Exposures to financial institutions" class. For other classes of exposures - to corporates; retail exposures; exposures secured by mortgages on immovable property, banks in Bulgaria apply standardised risk weights, as defined in Regulation (EU) 575/2013, depending on the credit quality by classes of risk exposures (Table 6).

Table 6. Breakdown of exposures by risk weights for 2017

Exposure classes	Risk weighs	Exposure amount in thousand BGN
Exposures to central governments or central banks;	0%	15 863 232
	20%	120688
	50%	239967
	100%	380
	250%	9673
	Total	**13 302 613**
	Exposures to unrated central governments or central banks	**805 652**
Exposures to regional governments or local authorities	20%	223 788
	100%	40 559
	Total	**264 347**
	Exposures to unrated regional governments or local authorities	**245 033**
Exposures to public sector entities	100%	11 588
	Total	**11 588**
	Exposures to unrated public sector entities	**11 495**
Exposures to financial institutions	0%	358 663
	20%	2 926 257
	50%	798 979
	100%	222 900
	150%	140 155
	Total	**4707512**
	Exposures to unrated financial institutions	**685 917**
Exposures to corporates	20%	1 383
	50%	16 873
	100%	5 393 298
	Total	**5 411 554**
	Exposures to unrated corporates	**5 411 554**
Retail exposures	75%	6 653 808
	Total	**6 653 808**
		6 653 808
Exposures secured by mortgages on immovable property	35%	3 128 693
	50%	1 468 150
	75%	316 520
	100%	832 267
	Total	**5745630**
	Without credit rating assigned	**5 745 630**
Exposures in default	100%	792 926
	150%	448 536
	Total	**1 241 462**
	Without credit rating assigned	**1 241 462**
Other items	0%	858 308
	20%	181 469
	100%	1 022 183
	250%	4 204
	Total	**2 066 164**
	Without credit rating assigned	**2 066 164**

Source: Supervisory reports of banks in Bulgaria

The adopted new rules for bank regulation of credit risk management (Basel 4) will find the strongest reflection in the Bulgarian banking system in the following two directions:

- Change in the SA for the "Receivables from enterprises" exposure class in the part *"Corporate exposures to small and medium-sized enterprises (SMEs) without credit rating"* by introducing additional criteria for their categorization and assignment of 85% risk weight. Compared to the current approach, *exposures to SMEs without a credit rating* that do not qualify for inclusion in the "Retail Exposures" class receive a 100% risk weight.
- Introducing a new standardised credit risk approach for mortgage-backed exposures on real estate based on the LTV (***loan-to-valuation***) indicator. Depending on the values of the indicator, banks will assign new risk weights ranging between 20% and 105%. According to data from banks' supervisory reports for 2017, the highest risk weight assigned by banks in Bulgaria for the *"Mortgage-backed exposures on real estate"* class is 100% (see Table 6).

Conclusion

Issues related to the regulation of bank credit risk management have always been the subject of analysis by a number of researchers in the field of banking and bank accounting. The concepts underlying the full and consistent adoption and application of the Basel standards are crucial to: improving the sustainability and efficiency of the banking system globally; confidence in prudential supervision and transparency of the regulatory environment for internationally active banks. During the last global financial and economic crisis of 2007, the weaknesses in the banking sector shifted to the entire financial sector and the economy as a whole. In response, the Basel Committee on Banking Supervision published a system for a new capital regulation and risk assessment requirements, known as Basel 3. Ten years later, the global economy continues to recover from its consequences. The current Basel program continues to seek a better balance between "risk sensitivity, simplicity and comparability" (BCBS, 2016). Despite the Committee's efforts, together with The Group of Central Bank Governors and Heads of Supervision, most of the interested parties lost confidence in the assets risk weighting approach, and in particular in internal rating modeling for credit risk assessment. The loss of public confidence in banks' capital ratios clearly highlights the need for tougher constraints on the way in which the risk-weighted exposure value of bank exposures is calculated and for a greater transparency in accountability.

It is important to note that the theoretical knowledge and study of the possible effects of the dynamics in the regulation and supervision of the credit risk assessment approaches as an important component determining the stability of the capital adequacy and the effective functioning of the banks is evidence of the growing role and importance of external regulation on the banking system to ensure bank investments and the efficiency of investments in bank capital.

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