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COLLEGIUM OF SOCIO-ECONOMICS

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„Banks' loan loss provisions as a credit risk management instrument"

Field: Economic sciences; Major: Finance

Summary of doctoral dissertation

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Warsaw, June 2017

1. Justification for the research problem selection

Loans and advances are exposed to credit risk since the moment of granting it. Banks are not able to predict all the future credit losses that may or may not occur and materialize. Expected losses as a result of future events that the bank will likely have to bear should be reflected in the credit margin calculation and should be covered by appropriately high provisions. Unexpected losses should be covered by adequate capital (own funds) adequately to the potential losses incurred within the 12-month period by the risky business. Equity determines the scope of the bank's business with a certain margin of security holding as a cushion. As the risk increases, the amount of regulatory capital that the bank must maintain to cover risks and absorb potential losses increases too. On the one hand, the likelihood of a bank collapse is reduced, and on the other hand, it is costly because as capital increases return on equity decreases accordingly.

The creation of provisions protects against the negative effects of economic risks associated with business activity. As a sign of prudence and prevention and some kind of "security brake", provisions are limiting the excessive credit expansion in bank lending ensuring that the entity continues to operate. Provisions also determine the future opportunities for stable bank growth, securing funds for its development. They have an impact on the financial performance. By financing and reducing the negative impact of credit risk through provisions the perceived entity's economic risk is reduced and conditions are created for further safe and sound functioning of the entire bank. Banks are obliged to have backward-looking provisions to cover the risks associated with carrying out general banking activities, reserves that absorb any losses that may arise in the future as a result of undetermined (uncertain) events or valuation allowances absorbing potential losses related to credit risk on financial instruments measured at amortised cost.

Bad (troubled) debt provisions for credit risk losses (known as loan impairments, reserve for bad debts or allowance for loan losses) affects the underlying value of risky loans and advances being granted, adjusting (reducing) the amount of receivables on balance sheet statistically to the amount of expected cash flows. Clean risk generates costs or reduces revenues. In the case of bad debt, the bank pays the double cost - it is the cost of the unpaid portion of the granted loan (reduced interest income, late payments, collection expenses: the cost of taking possession or preserving) and the cost of maintaining the loan loss provisions. In extreme cases, the potential loss that a bank faces in the case of a default - materializing as a loan loss allowances – cover whole credit exposure while the maximum profit is limited to the margin. Bank must assess the extent of the losses it may incur and the impact of those losses on profitability. To measure (quantify) the credit risk, bank estimates the impact of risk materialization (the amount of possible loss) at the given probability of materializing that risk (occurrence of this loss).

Provisions for credit losses are an instrument by which banks anticipate (reflect) - at the time of their creation - the future possible but probable losses that a bank may incur due to default by customers. Their value is determined by the level of credit risk. Thanks to the adopted method of calculating and creating provisions, the bank recognizes and hedges the risk that can turn into a loss. It should be noted that although they are treated as a incurred loss (quantified credit risk), they are projections of future losses, ie reflect potential losses that the bank may incur. They do not minimize credit risk, which is objective in relation to the debtor's situation, but anticipates future losses at the time of creation by financing and mitigating the negative effects of credit risk. They are designed to hedge a portion of a financial result, thereby anticipating actual losses, ie probable capital loss or impairment of receivable. These provisions are of a compensatory nature and are determined by the credit risk with which they are closely and inseparably linked. Their object are assets exposed to credit risk that either have lost value or may lose it in the future. The purpose of the allowance is to realign the value of the future economic benefits being derived from the assets owned or controlled by a bank. Thanks to provisions, banks includes the risk of non-recovery (loss) of part or all amounts of the receivables according to the original contractual obligations.

Provisions for credit losses are a key concern for banks and are a serious burden on bank performance. Their relative level in banks is much higher than in other types of businesses. Charged to the income statement against profits (being set aside from the profits), provisions are more a deduction of profit for distribution than actual costs, ie they are an expenses on results that does not constitute a cash outlay. Since the created provisions for receivables increase the operating costs of the bank, then the gross profit of the bank decreases, which in turn affects the profitability of the action and consequently - the competitiveness of the bank. Obviously, they have an impact on the financial security of the bank itself and, consequently, on the stability of the national banking system. Even if a bank shows positive financial results, it may be at risk if it does not make careful, reliable and robust estimates of the amounts and does not create adequate provisions covering existing and estimated future credit losses.

Provisions are an estimated amounts to be lost, as at the time of their creation banks are generally unaware of the current credit exposure amounts of all borrowers' obligations. This valuation usually depends on estimates based on variable market conditions and subjective management judgment. The amount of provisions for identified and non-identified losses is determined by the level of credit risk and methodology for assessing credit risk and estimating credit losses.

When the provision level does not match the level of risk actually borne by the bank, the bank's management may decide to classify credit receivables more strictly. With regard to financial security considerations, the bank may take into account different factors affecting the level of credit risk and amount of allowances, such as sector / branch prognosis or encumbrances on debtor's assets as well as the macroeconomic factors or bank behaviour. The need to increase provisions for credit losses may also be due to a decrease in the estimated collateral value based on the results of the collection process, the overestimation of collateral values and applying a more conservative approach (according to the principle of limited trust) to collaterals.

The provision for impairment of loan exposures functioning principle is based on the accounting policy adopted in the bank, which forms the main elements of the financial statements such as the balance sheet or the profit and loss account. An accounting policy that is effectively used in the financial management process should support the achievement of sub-goals of the board and enable the achievement of overarching goals such as generating profit or financial security, thereby contributing to the improvement of the bank's credibility and financial security. Banks’ own accounting policy is governed by the right of choice left by the legislator, permitted by the national law and regulations. The type of instruments used in the formal accounting policy depends on the entity's financial policy.

Provisions are considered as one of the main instruments enabling the implementation of a particular accounting policy. The size and type of provisions created is determined by fundamental accounting principles such as the prudence, matching or accrual basis principle. Due to loss events already occurred (objective evidence of impairment, the liability has been incurred), the accrual basis principle allows the creation an allowance on assets and the creation of provisions for liabilities, but only for incurred losses (ie ex-post credit risk). The effects of impairment are recognized in the reporting period to which it relates. The prudence principle justifies the creation of provisions for incurred and future expected losses. In keeping with the prudence principle, all silent (discretionary) provisions (larger than required) are created within reasonable limits, eg when there are risk indications for a particular product category. The creation of specific provisions much higher than other banks in their peer group or higher than minimum amounts set in regulatory requirements may reflect the purpose of the credit policy, consisting in hedging against the risk of business activity and demonstrating real, not paper and unattainable, profit in the books of account. If their estimation turns out to be superfluous, these provisions are being reversed which increases the financial results of the financial year in which it takes place. Excessive application of the prudence principle, when bending the principle of true and fair view, leads to the creation of overestimated and hidden provisions for (incurred and future) credit losses.

It should be emphasized that the application of the prudence principle as well as the precaution in the conducted financial policy does not entitle the commercial bank to create excessive allowances (ie, deliberately raising costs or lowering its financial result) in order to shape both its financial and material standing. This is in conflict with the overriding principle of accounting, ie the principle of fair and clear disclosure of information. On the one hand, reclassification of loan receivables to impaired loans group without a simultaneous increase in the value of impairment allowances individually or collectively assessed can be justified by obtaining adequate collateral from debtor by the bank which reduces the potential loss and increases the recoverable amount. On the other hand, allowances that were created too high in relation to the quality of the loan portfolio may distort the financial result of the bank presented in the financial statements in future at the time of reversal their unused portion.

Managers may try to manipulate provisions with different motives. They may want to show a negative financial situation (eg showing the lowest possible profit) or positive (eg showing the highest possible profit). It is clear that the bank's management is often under the pressure of capital markets, owners or prospective investors to ensure adequate levels of revenue, continued growth in financial results or value. Managers may use balance sheet instruments to achieve planned profit. Decisions on provisioning for credit losses are related to the achieved bank's financial results, shareholders' expectations and financial strategy of the bank. In addition, managers whose salary or bonus depends on earned profit (eg having stock options), with interests coherent with shareholders, may have a strong incentive to increase current market value by crossing the limits of acceptable accounting practices and choosing more favorable accounting policies for creative manipulation. They may also deliberately manipulate the amount of created provision through the ever-greening procedure or recognition of interest income on impaired or defaulted loans (impairment interest) to income (without suspension of accrual of interest income) to show higher financial returns. In practice, the value of the provisions is adjusted to the expected losses and can lead to generation a financial loss.

Risk management in bank is in practice often searching for an optimal solution between:

- profit maximization (profitability policy), ie the bank's risk appetite in order to, for example:
    - achieve higher profitability,
    - work out the planned profit,
    - faster, more dynamic development,
- and risk minimization (liquidity-oriented balance sheet policy), ie external environment for banking industry and external obligatory regulations on prudential standards, shaping the general and universal legal framework of commercial banks activities, which:
    - do not allow the use of unacceptable & inappropriate practices, illegal activities and unethical behavior,
    - limit the freedom of conducting bank activities and the taking excessive risk,
    - are fair from the customer’s perspective,
    - support general financial discipline,
    - reduce the risk of bankruptcy,
    - limit the loss of guarantee deposit protection funds,
    - allow you to keep public confidence in the bank.

Banks need to be profitable (which determines their competitiveness) and financially secure and stable (which determines customer's confidence). Reconciling the conflicting interests of the bank’s supervisory board and financial supervision authority is not so much about the avoidance of conducting risky business (avoiding losses and thus limiting the scope of running activity), but wise, rational and informed acceptance of a certain level of risk, its monitoring and accurate estimation of potential losses within a portfolio of loans - that bank might experience due to credit risk - at the level of specific business lines or bank products. These activities aim at optimizing the impact of risk on economic and financial performance by increasing revenue and improving the bank's performance measured by, for example, cost to income factor, solvency ratio, net profit growth rate or return on equity (ROE).

The direct premises for taking up consideration in dissertation is the universality of opinions about the provisions as the most important instrument for realization of given financial policy, either to maximize profits / profitability (aggressive policy) or to maximize financial security and liquidity (conservative policy). They provide a wide range of opportunities to create a financial and wealth situation.

System solutions implemented in individual banks use more complex mathematical and statistical models to assess the likelihood of risk realization under a given conditions and assess the effects of this realization (severity assessment of risk realizing). These solutions are also shaped by a certain level of discretion permitted by the regulatory system for determining the level of provision adequate for incurring credit risk. The lack of a standardized approach to loss events, loss identification periods, conditions for reversal of impairment allowances, or estimation of future cash flows by the entity itself, results in various approaches for determining credit losses between banks. This makes it difficult to assess the quality of commercial bank management in the area of lending and balance sheet policies, which for the purpose of the dissertation will be aligned with the accounting policy that has an impact on the financial statements and gives the management the opportunity to improve their image.

One must emphasize the important point - even the most experienced supervisory board is not able to predict the future well. The process of setting an adequate (prudent, cautious but not excessive) level of credit losses, requires intuition, reasonableness and a high level of skills in assessing the debtor's situation and comprehensive credit portfolio analysis. There is no single best way to measure credit risk. Banks may use a variety of models often coupled with advanced analytics[1] to estimate credit losses, taking into account all known and relevant internal factors, external unstructured data or economic, political, geographic, and environmental (sector, industry) information available at the balance sheet date and affecting the valuation of provisions.

The adopted concept of work is related to the incurred loss model used to recognize impairment. IAS 39 requires that banks establish - at each balance sheet date - whether there is objective evidence of impairment of an individual asset or group of assets measured at amortized cost. This method does not recognize the expected losses, even probable, that may arise as a result of future events, unless there is a premise (so-called initiating / triggering event) such as a default.

Regulations on the functioning principles of loan loss provisions evolve and are subject to constant improvements and unification in order to strengthen market discipline and financial system security, prevent crises and limit the discretion and scope for freedom of action left to banks to set their own rules for the functioning principles of provisions against credit risks in the banks. The scope of regulations and supervisory practices should continue to expand in breadth and depth.

2. Objective and hypotheses

The purpose of this doctoral theme is to review the literature on the aspects of the dissertation, to organize and synthesize views on credit loss provisions and the complexity of using these loan loss provisions for the purposes set by the Governing Board. The empirical part is to show that loan loss provisions - thanks to a certain extent of the bank's freedom to set up its own functioning principles of provisions - provide the management board with a wide range of opportunities to generate financial results. The aim of this dissertation is to demonstrate that, by using loan loss provisions, managing board may try to shape both their financial and material standing, impacting the financial result at any point in the reporting period and at the desired level and reflecting current and most reliable estimates of provision is prone to subjectivity. Formulation of the principles of creating impairment allowances for receivables and presentation of factors that have a direct or indirect impact on the amount of allowances and instruments giving the greatest possible impact on the amount of impairment losses on loans & advances is to verify the main objective of this thesis. The author's intention is this dissertation to have as practical and interdisciplinary character as possible, and a multifaceted analysis of the rules of the

[1] Big data and machine learning have an important implication for risk management techniques used for example for better credit-risk decisions (credit underwriting), credit portfolio monitoring and early warning, fraud detection and prediction of credit losses.

provisions functioning, together with the role of provision for credit losses in the implementation of a particular financial policy, exploited the author's professional experience of this area.

It may be assumed that this dissertation will create a premise for further discussion on the role of bank loan loss provisions in the bank's financial policy and determining the adequacy of provisions for impaired receivables.

The bank's methodology for estimating loan loss provisions and calculating loan loss allowances affects the value of net receivables, as reported in the financial statements, what undoubtedly affects the bank's financial position. It may also cause additional repercussions for changes in balance sheet structure and profit and loss account. Sometimes it significantly changes the image of the bank resulting from the analysis of the financial statements. With the use of loan loss provisions and the appropriate mechanism for their creation, commercial banks may deliberately distort (shape / create) their financial statements (acting in accordance with accounting principles) affecting the financial result at any point in the reporting period and in the selected amount.

Since accounting policy is one of the tools by which the assumed objectives are being achieved, an important aspect of the dissertation is to demonstrate how a commercial bank can control the amount of its financial result by under-estimating or over-estimating the amount of provision for credit receivables, depending on the purpose it want to achieve and implemented a balance sheet policy. This interesting topic has not yet been presented in a systematic way. To this end, the factors influencing the loan loss provisions will be identified and analyzed. In addition, various methods of measuring, controlling and limitation of credit risk will be presented and analyzed, as well as the effects of the selection and application of the different provisioning mechanisms for the same loan portfolio and their impact on the recipients of commercial bank financial statements. It should be borne in mind that the level of loan loss provisions that provides a true and fair view of the loan portfolio may vary depending on the bank's credit risk approach, and more advanced methods may require more time and resources for implementation, deployment and monitoring (back-testing).

Desiring to tackle the original and valuable scientific problem, after critical analysis of available literature and empirical research, the thesis has been formulated as follows: **Rationally-created and managed credit loss provisions reflect the real level of credit risk in the loan portfolio and determine the credibility and financial security of the commercial ban**k.

In addition, four auxiliary hypotheses were formulated:

H1: **The Management Board affects the amount of provisions and thus the financial result by understating or overstating the amount of provisions created for loan receivables or by the creation the provisions of improper structure.**

H2: **The amount of provisions is determined by the bank's ongoing financial policy targeted at profitability (maximizing profits at the expense of increasing risk) or liquidity (reducing risk at the expense of deteriorating profitability). Bank activities fall within objectives and limitations mentioned.**

H3 : **The necessity of applying the principles of determining the level of provisions on a continuous basis, writing good (accessible, accurate and applicable to readers) documentation, continuous updating of the process of setting the provisions and basing the process of setting the provision on appropriate analyzes justifying the level of these provisions, limits the excessive discretion and ability to create the financial and material situation by the Bank's Management Board.**

H4: **The wide range of freedoms allowed by the regulation system of functioning principles of provisions, such as the interpretation of definitions or the way in which a practical solution is being implemented, defines the rules for setting the provisions adequately for level of credit risk, which makes the specific solutions used in this area differ from one bank to another.**

A number of detailed research questions were also put forward in the dissertation:

1) Is an objective evidence of impairment (that affect the size or timing of cash flows associated with asset) without recognition of impairment loss (impaired – no provisions required), an indication of impairment of the asset assessed individually?
2) What should be the limits for reducing the PSR provisions base when the credit exposure is secured by both a mortgage and collateral of another type?
3) In the case of mortgages, should the basis of the PSR provisions' calculation be reduced to the maximum or minimum value? Is reduction of the specific provision calculation base obligatory because of legal provisions or whether the possibility of taking into account recoveries from collateral (collateral valuation) is left to the bank's decision?
4) How can the difference between level of provisions determined in the incurred loss model and level of provisions which would be recognized in the expected loss model be reduced?
5) Can one treat loan loss allowances on receivables arising from authorized and unauthorized debit balances as loan loss allowances created in connection with a bank account agreement? Should the bank create provisions for authorized (overdraft) and unauthorized debits in the bank account?
6) Can the application of the definition of default at a level other than the facility (eg for a debtor, join obligations or group level) and the probation period be a response to allegations of too late identification of evidence of impairment of credit exposures in the process of financial assets quality review and credit risk assessment of these exposures?
7) Are IBNR provisions to be treated as specific credit risk adjustments or as general credit risk adjustments? Is it important to distinguish between certain and uncertain losses as a result of incurred losses but not identified at the balance sheet date?
8) Will there be a dual, heterogeneous and consistent valuation system in the future where the total impairment allowances (modeled for accounting purposes) will not be lower than the total required provisions for defaulted, non-performing receivables (for supervisory purposes), which are the sum of specific and general reserves?
9) Are objective evidence of impairment of the exposure group an IBNR premise?

3. Approach and methodology / Research methods

The work is of theoretical and empirical nature. Analyzes of the principles of the functioning of provisions for credit losses and their use for credit risk management were based on available literature of the subject, current legal status taking into account: the Banking Law, resolutions and recommendations of the Polish Financial Supervision Authority (KNF), the Ordinance of the Minister of Finance, the Corporate Income Tax Act, guidelines and Technical standards set by EBA, accounting standard setters' guidelines for IAS 39 and IFRS 9, guidelines for the Basel Committee on Banking Supervision (BCBS) and the Enhanced Disclosure Task Force (EDTF), CRR Regulation and CRD IV directive, public consultation papers and opinions of various stakeholders (including BSG comments), financial statements of selected commercial banks, tax interpretations and author's own knowledge, thoughts and experience in this area. The work has been enriched with practical examples and expert analysis of the impact of loan provisions on the implementation of a particular financial policy.

The paper also presents the impact of impairment measurement and impairment allowances on the financial and material position of a commercial bank. In order to carry out a logical argument that allows for the achievement of the dissertation's objective and verification of the examined auxiliary hypotheses, the final part of the dissertation was devoted to the presentation of factors that affect the level of provisions. There were also presented the ways in which provisions can be shaped (understated or overstated) in a short period of time for an adequate assessment of the scale of risk and shaping of the bank's image being consistent with the current legislative acts: banking law, resolutions, ordinance and regulations of the supervisor. For credit risk evaluation models needs and evaluation of both current and foreseeable in future credit risk, historical data play a key role. Research in this dissertation is limited to use mBank S.A.'s internal data on the retail loan portfolio for all outstanding debt obligations including impaired, past due, early or late arrears, defaulted or restructured exposures. Empirical data comes as of October 31, 2013, including 12 consecutive months for estimation of migration matrix.

4. The structure and content of the work

The dissertation consists of three theoretical parts which are the basis for the research and one empirical part, in which the following research issues and problems are analyzed in greater detail:

- identification of potential sources of credit risk on the borrowers and lenders side;
- an analysis and critical assessment of the ways in which banks try to control systemic risk resulting from exposures to entities in the same industry / economic sector / geographic region (country) or conducting similar activities;
- an analysis of key methods for reducing credit risk and anticipating future losses, including: improvement of credit policy and internal control mechanisms, concentration limits, levels of LTV factors, development of a restructuring strategy and loan collection, loss events catalog extension and application of established legal collateral for loan repayments and customer creditworthiness testing;

- analysis of criteria for assessing the borrower's creditworthiness including customer / debtor rating, exposure rating and early warning indicators for diminishing in quality assets;
- classification of provision for loss or impairment by: individual / portfolio, provision for significant / non-significant individual exposure, and provision for impaired loans with identified impairment and without identified impairment;
- classification of types, parameters, credit risk measures and key credit portfolio quality indicators;
- analysis of the ways in which loss given default can be modelled and the estimation of the economic value / recovery value of the asset, including the concept of the loss identification period transforming expected loss to incurred loss, the various statistics for estimation the value at risk, the different material thresholds and the risk parameters from the Basel II model;
- defining problems related to estimating the most likely future cash flows by restructuring and debt recovery / collection professionals;
- analysis of methods of estimating the likelihood of a default event taking into account the application of statistical methods eg migration matrix between credit classes;
- establishing the relationship between the bank's credit policy (expansive / aggressive, conservative / precautionary, sustainable / flexible) and the loan loss provisions / allowances reducing the net balance value for the receivable;
- an analysis of application of the different criteria for definition of default – breach a contract and failure to meet the legal obligation to pay the debt - including the use of the definition of default at the level of individual, particular credit facility (rather than at debtor / obligor level in relation to cross-default) for retail portfolio exposures, whereby a client's failure to meet one of its obligations does not result in other liabilities of the same debtor to the bank being also treated as defaulted, or technical defaults;
- analysis of the development of credit loss provisions principles, starting from the creation of specific provisions (obligatory for banks preparing reports in accordance with Polish accounting standards), through allowances for impairment of loan exposures created according to the incurred loss model used by international accounting standards (IAS 39) and ending with IFRS 9 and expected loss model.

The structure of this dissertation has been subordinated to the analysis of the doctoral thesis and the auxiliary hypotheses, and aims at the broadest possible perspective on the problem under investigation. In the theoretical chapters will be presented, among others, the discrepancies between the different banks in determining and calculation of loss given default for different scenarios, determining the probability of default in the horizon corresponding to the loss identification period, or estimating the expected utilisation / usage at the time of default. There will also be a divergence in the naming of provisions for incurred but not reported losses identified. Various practices in the implementation of default and impairment were also mentioned.

In the first chapter of the dissertation, based on the literature of the subject, a critical theoretical and conceptual overview of the subject was presented. At first, the concept of risk and uncertainty was characterized, as well as the notion of economic capital to cover unexpected losses and expected losses covered by the banks' provisions. The various types of risks a banks are exposed to are then presented, with particular emphasis on the narrow definition of credit risk as a type of bank risk that threatens the bank's existence. The essence and measures of credit risk were shown too. This risk is an inherent part of the bank's lending activities and is the subject of numerous legal regulations. Credit risk in quantified form becomes an incurred loss.

Correct identification and measurement of risk can reduce this risk. The following part of first chapter describes the basic principles of credit policy which, together with the credit instructions, complement and detail (eg the credit rules) the bank's strategy for credit risk selected by the management. Credit policy is an instrument for implementing this strategy and a key tool for managing credit risk. The credit risk management strategy sets the framework for a credit risk management system. Internal regulations and procedures detail the credit policies for example arrears management policy, early warning / watch-list policy, NPL classification & provisioning policy, forbearance policy, debt recovery & enforcement policy, collateral valuation and management policy, write-off policy. The development and proper functioning of the credit risk management system, including the appropriate level of loan loss allowances, is the responsibility of the management board, specifically the Chief Risk Officer (CRO), who oversees and coordinates risk management across the bank.

The quality of commercial bank asset management manifests itself in some sense in the way the credit portfolio is structured and the balance sheet total is increased. At the end of the chapter ones describes the restructuring / forbearance measures aimed at restoring the proper performance of the contract. In the event that the distressed restructuring process fails, debt collection actions are taken against unreliable debtors. The location of debt collection actions on the timeline from insolvency through bankruptcy to legal bankruptcy ending, is important for a better understanding of the premise of impairment (loss event), as described in the next chapter.

The second chapter is devoted entirely to the problem of creating provisions for expected credit losses and dilemmas related to the operation of the impairment process. The chapter begins with the definition of balance sheet policy, accounting policy and financial policy. Provisions are one of the most important instruments of balance sheet policy supporting the implementation of the bank's development strategy and implementation of a specific accounting policy. When determining principles for loan loss provisions, the bank follows the assumptions of its balance sheet policies, credit risk management policies and bank management policies. Provisioning policy determines the economic viability of a bank, and a reliable way of determining the level of credit risk affects the quality of financial statements. The role of bank loan loss provisions and the determinants of their valuation are then presented.

Classification of provisions includes, among others, specific provisions created to cover risks related to the conduction of general banking operations, reserves that absorb expected losses that may arise in future as a result of near-undefined events, and allowances for amortising potential losses related to credit risk and mitigating the negative effects of credit risk when those effects materialize. The risk of default is defined by events that radically change the client's economic situation. Although in practice the discontinuation of credit contract is difficult to predict, there are loss event ([impairment] triggering events for impaired asset testing), called default events. Such a premise can be regarded as a negative economic situation in some industries or countries The reason for higher costs of risk may be a more conservative method of allowances calculation too. Term ‘default’ was defined in this chapter in various variants, taking into account the process of contagion of the exposures through the joint owner and the criteria for returning to non-default state. As it is known, the loss event precedes the occurrence of objective irrecoverability (uncollectability) of receivables. This chapter also describes the credit risk associated with off balance sheet exposures.

Obligatory rules for the functioning of the loan loss provisions can be transnational (eg IAS 39 / IFRS 9) or national (PSR). An important part of the third chapter is the presentation of the principles and methodologies of creating provisions according to Polish (PSR provisions) and international (IAS provisions) reporting standards, including the type of the provisions, the moment when the provisions are being created and released, or the amounts being created and released. In practice there are many different alternative models of credit loss provisioning, including the incurred loss model based on the IAS 39 or US GAAP assumptions, expected loss model based on assumptions included in IFRS 9 or Basel III (the Basel model), the model of general provisions used before the implementation of the incurred loss model, and the model reflecting the concept of dynamic provisioning characteristic of the Spanish banking system. Besides specific and statistic provisions, provisioning model may also include provisions for country risk. In addition to a brief summary of the issues related to the application of IAS 39 for impairment measurement, one also briefly presented new legal regulations (modifications to the rules) under IFRS 9, which were launched in 2009. The expected loss model is expected to enter into force as of January 1, 2018 replacing the incurred loss model, particularly criticized during the recent economic downturn due to the late provisioning and the sudden adjustment to the carrying values and profit and loss account (described as the cliff effect). Expected credit losses must by provisioned from the time a loan is originated. Projections for expected losses are often alleged to be excessive in value because of the way in which future and macroeconomic data are taken into account, so that their value does not necessarily correspond to actual losses. At the end of the chapter, the essence of writing down provisions for assets that do not bring economic benefits to the bank was explained.

Chapter Four presents the results of empirical research conducted on the selected data derived from specific commercial bank. The assumptions used for the study and the methodology used to determine the amount of allowances were first described. Subsequently, the author attempted to implement the selected principles of the functioning of provisions for credit losses and to present factors influencing the level of provisions and the scope of freedom associated with their practical functioning. The chapter contains, among others, analyzes the impact of different variants of the splitting transition matrix buckets on the probability of default (and hence the provision value), stress tests together with the testing of financial collateral effect, and the impact of the efficiency and length of collection process on the level of allowances. The results obtained during stress tests may, in justified cases, replace the parameters computed by the model. The effect of credit portfolio split (including re-default and old-default cases), applying of different default definitions, and the adoption of different values for the loss identification period and minimum uncertainty level were also included. At the end of this chapter, the specific provisions for retail loans and allowances created in accordance with the international accounting standard using the migration matrix between credit classes to estimate the probability of a default event were compared. There is no doubt that different methods of estimating credit risk can lead to different levels of allowances needed to cover credit risk and thus different bank assessments.

5. Results and conclusions

The dissertation was aimed at critically analyzing and evaluating the principles of creating impairment allowances for loans and other receivables and, to a lesser extent, the rules for creating provisions for off-balance sheet liabilities. As is well known, the management board is responsible for ensuring the adequate level of allowances. It can be argued that the assessment of the appropriate level of impairment losses (as a result of actual risk incurred by the bank) is not devoid of subjectivity, and the management board is trying to find a golden balance between controlling (minimizing) risk and conducting profitable activity (maximizing profits). Research hypotheses have been confirmed, and the main goal - achieved.

H1:

Management board is responsible for keeping the credit risk at a "reasonable" level which on the one hand is limiting losses on the loan portfolio (limits the potential effects of a solvency migration) and minimizing the risk of occurring credit exposures at risk of impairment, and on the other hand – is letting keep the expected level of profitability.

It is undeniable that lower provisions can account for both the financial strength of the bank and the lower risk of running a banking business, sometimes giving the stakeholders the wrong conviction of bank's financial power, contrary to the actual situation. Banks typically seek to report the level of allowances in the following quarters in the way which:

- is balanced and adapted to the current market situation,
- is devoid of unusual deviations from long-term average of allowances level,
- along with stable risk costs and financial performance is similar to forecasts published by analysts (or exceeds analyst expectations)

thus giving the market a feeling of comfort and stability.

The dissertation has shown that provisions are the most important instrument that allows commercial banks to pursue their designated financial policy. External environment, such as the situation and prospects of the industry of creditor's business, and the prudent approach to impaired exposures and assessments of collateral are included in shaping accounting micropolicy for provisions. It should be emphasized that the IAS standard prevents the creation of provisions in advance in good times against potential losses in the economic downturn. Provisions for impairment can only be created when there is a premise of impairment.

The reflections in the dissertation focused primarily on presenting the ways of a more accurate (adequate) estimation of the value of the created provisions. It allows the image of the entity to be positively influenced, being in line with the true and fair view and other overarching accounting principles. Parameters that have a direct or indirect impact on the amount of allowances were also presented.

H2 :

It is evident that a balance sheet policy structured in an appropriate manner can contribute to the realization of an overarching objective that is reflected in the bank's strategy. For example, reporting a huge loss would affect bank rating (which would increase capital costs) and the response of bank customers.

Banking management requires discipline and, on the other hand, flexibility to react quickly and accurately to dynamically changing environments. The total amount of allowances, measured individually or collectively, should be adequate and should meet the requirements of appropriate accounting policies. Adequate allowances do not violate the principle of true and fair (faithful) disclosure of information or equivalence of revenues and costs principle, and lead to a fair valuation of financial assets without their overestimation, unnecessary burdening of the financial result or the creation of hidden reserves by increasing potential loss absorption buffer. They enables to create a true economic picture of an bank which reliably reflects economic facts, such as incurred costs and revenues, with a true and fair view of the financial and material situation. An effective risk management system, supported by knowledge and experience, ensures that the credit risk is maintained at a level that is adequate to the scale and nature of the bank's business, with no exceptional caution.

Adequately created allowances justified by the occurrence of credit risk are maintained at a reasonable (cautious but not excessive) level sufficient to cover the estimated credit losses before they become actual losses. They are not procyclical and do not result in delays in recognizing losses or overpayment of interest income, thereby bringing positive effects for shareholders. Adequately created allowances do not limit the profitability and competitive position of the banks too much. In addition, adequately estimated provisions have a positive effect on shareholders if they are not conducive to the own interests of the managers and do not lead to an increase in unsecured risk.

In addition to respecting accounting principles and various regulations or guidelines, the process of setting an appropriate level of credit losses requires intuition, honesty and a high level of competence in a fair, objective, comprehensive and precise assessment of the debtor's economic and financial standing, the situation and prospects of the industry and the quality of credit portfolio to reduce the effects of insolvency of borrowers and reduce the cost of unnecessary hedging. The appropriateness of the estimated allowances and provisions is verified in the backtesting process, which verifies the degree of conformance of these estimates to their empirical evidence. Financial statements based on prudent valuation of individual financial amounts (ie assets and income are not overstated and liabilities and costs not understated) can be considered as objective and reliable document.

The assumptions used to estimate the allowances should be probable and justifiable. Factors allowing to keep the level of provisions stable include, for example, favorable macroeconomic conditions (ie GDP growth or declining unemployment). Taking into account financial security considerations for provisioning, the bank may take into account factors that may have an impact on the level of credit risk, such as industry projections and debtor's assets encumbrances. The need to increase provisions may also be a consequence of a decrease in the estimated collateral value (based on the outcome of the debt collection process) or deterioration in the situation in such sectors as shipbuilding, automotive, residential property (price uncertainty), construction or energy. The reason for higher allowances (higher risk costs) may be events occurring in Ukraine affecting corporate clients in the eastern markets, changing the methodology of calculating allowances towards a more conservative client approach, conservative accounting of newly acquired loans or creation of additional provisions for loans which have worsened standing, even though are regularly repaid.

H3:

Since different methods of estimating credit risk for the same initial portfolio may lead to different levels of allowances needed to cover credit risk (and thus different bank performance assessments), it is extremely important to verify the way each method reflects the level of empirical default of debtors and losses into historical data. Impairment losses should reflect historical losses and significant macroeconomic determinants. They should also reflect changes in relevant legislation, such as enforcement and protection of creditors.

The level of allowances should be determined in accordance with the applicable accounting standards, following the letter of the rules of standard accounting practices, the bank's accounting policy and the supervision guidelines. The purpose of the IAS 39 is to determine the value of allowances and not just indications of the need to create this allowances. Therefore, an impairment loss should be created whenever there is a risk of default (irrecoverability of receivables) without being limited only to the events described in IAS 39 standard. Assets that do not represent an economic value should not be treated as an asset element and should be written-off immediately. In limiting the motivation of creative accounting and the possibility of creating an image of the financial and material situation desired by management board which could misrepresent the true income and asset value, ethics in business plays a big role, without which even the most detailed accounting rules will be avoided.

Although the solutions applied by individual banks for determining credit losses may differ, they are subject to scrutiny and oversight by the supervisory authorities. Rules are subject to general international accounting standards and should be applied on a continuous basis. In addition, the provisioning process for credit losses must be well documented and updated as necessary.

This process should also be based on appropriate analyzes justifying the level of provisions created, including both individually and collectively assessed. Valuation should be supported by appropriate knowledge and experience.

H4 :

The principles of functioning the banks' loan loss provisions are generally broad in nature, leaving a considerable degree of discretion in determining the adequacy of risk provisions by fully covering the estimated credit losses. Internal policies describing functioning of these provisions should be tailored to the scope and nature of the bank's business and should comply with banking supervision guidelines and accounting policies.

The specific banking solutions used to estimate losses differ among banks in terms of technology tools, internal and external data (eg. social-media data, online-browsing activity, customerpayment and spending behavior: PayPal transactions, UPS shipment volume, Amazon trade information), the forecasting and retrospective model used, the scope of information (economic, political, geographic), internal and environmental factors available at balance sheet date and having an impact - according to the bank - on the valuation of provisions and current practices in the application of the regulations regarding provisions, applied simplifications or expert corrections. The differences between banks also apply to the use of expert judgment in the process of estimating and measuring the expected credit losses, particularly in terms of macroeconomic factors and other information relating to the future.

As evidenced by the arguments, the issue of the provisioning of credit losses for bad debts and determination of the optimal level of provisions, adequately adjusted to the expected loss in the portfolio, enjoys great interest in the world from supervisors, bank managers and various banking specialists and practitioners and is becoming increasingly important. It raises a lot of controversy and is the subject of constant criticism and the search for optimal valuation of financial instruments. With the development of knowledge in credit risk estimation, computational techniques (IT), increased pressure from different stakeholders on regulators and the new product exposed to credit risk development, the rules for the functioning of loan loss provisions are evolving.

The issue of determining the optimal level of provisions for unsecured receivables, appropriately adjusted to the expected loss in the portfolio, will become increasingly important. Taking into account the expected credit losses in the portfolio, while attempting to smooth out income against business cycles, does not have to be a negative phenomenon if it will have positive effects both for the shareholders and the managers of the banks and will not only favor the interests of its managers. It is also important that early provisioning for expected credit losses can mitigate the negative impact of the economic recession and reduce pro-cyclicality of provisions to credit and business cycles. On the other hand, specific provisions should not limit banks' profitability too much and thus their competitiveness.

6. Plan

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