
Assessment of reputational risk impact on commercial banks financial performance

Daiva Jurevičienė and Viktorija Skvarciany*

Faculty of Business Management,
Department of Economics Engineering,
Vilnius Gediminas Technical University,
Sauletekio Ave. 11, 10223 Vilnius, Lithuania
Email: daiva.jureviciene@vgtu.lt
Email: viktorija.skvarciany@vgtu.lt
*Corresponding author

Ksenija Kravec

Danske Bank Global Service Lithuania (GSL),
Markets CSD,
Saltoniskiu Str. 2, 08500 Vilnius, Lithuania
Email: ksk@danskebank.lt

Abstract: The current study aims to determine criteria linked to a bank's reputation and evaluate the effect of reputation on the commercial bank's performance. In order to estimate the impact of reputation on a commercial bank's performance, the expert evaluation method was chosen. The research was conducted in two steps: first, the unstructured (informal) interview was applied to extract the factors; second, the multicriteria decision methods such as simple additive weighting (SAW), complex proportional assessment (COPRAS) and geometric mean were employed for evaluating the determined factors. The research results showed that the weakest position of the commercial bank in terms of reputational risk implied the performance efficiency decrease. The conducted research contribute to the scientific literature by providing a methodology for assessing the impact of reputational risk on commercial bank's performance. However, the methodology could be applied to those banks that do not provide services for individual customers but work with business clients only.

Keywords: reputation; reputational risk; multicriteria decision-making methods (MCDM); SAW; simple additive weighting; COPRAS; complex proportional assessment; banking.

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Biographical notes: Daiva Jurevičienė holds a PhD in Economics and works as a Professor and a Head at the Department of Economics Engineering at Vilnius Gediminas Technical University. Her research interests include personal finances, behavioural finance, investments, banking and risk management.

Viktorija Skvarciany holds a PhD in Economics and works as an Associate Professor at the Department of Economics Engineering and as a Director at the Institute of Dynamic Management at Vilnius Gediminas Technical University. Her research interests include econometrics, decision-making process, and education.

Ksenija Kravec works as an Operations Officer in Corporate Actions and Income at Danske Bank. Her research interests include banking, organisation's reputation, reputational risk and risk management.

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1 Introduction

The importance of the organisations' reputation during the times of business globalisation has been increasing. Reputation is associated with long-term intangible assets value, which is hard to measure; therefore, the impact of reputation loss on an organisation's activities often remains undetermined. Underestimating this impact prevents the organisation from learning and developing useful risk management tools. The positive organisation's reputation reduces perceived risks and leads to progressive public associations, leading to a strong market position, new customers, generation of stable income and employee satisfaction. However, ensuring an excellent long-term reputation requires peculiar efforts and ongoing both internal and environmental analysis. Successful management of an organisation's reputation is directly related to the implementation of appropriate risk controls. An unfavourable state of reputation could negatively affect the organisation's credibility and increase the interest of external members in the organisation's activities. The wrong way of managing risks and ignoring them is often related to reputation loss.

Regarding the financial services organisations, including banks, the risk implies the possibility of losses resulting from interactions with uncertainty. The adverse reaction of counterparties, shareholders, investors, debtors, market analysts, regulators and other related parties in the market may negatively affect the bank's ability to maintain existing business relationships and access to sources of financing. As with any activity occurring in an organisation, the impact of an organisation's reputation must be appropriately measured and evaluated by the organisation's strategies. One of the ways to ensure future success is to use and apply the results of financial analysis across the entire organisation. Financial analysis provides an opportunity to understand more concretely the phenomena and processes in the company and to assess the impact of the reputational risk event on the financial performance of the organisation.

The goal of the current research is to determine criteria linked to a bank's reputation and evaluate the effect of reputation on the commercial bank's performance. In order to reach the goal, the experts' evaluation method and multicriteria decision-making approach simple additive weighting (SAW) and complex proportional assessment

(COPRAS) were used. The results showed that the weakest position of the commercial bank in terms of reputational risk implied the performance efficiency decrease.

2 Theoretical background

2.1 Concept of reputational risk

Organisation's reputation is a part of its goodwill (Bužinskienė, 2017); hence, it attracts scientists' attention. Corporate reputation is a credible signal for shareholders since if a company does not behave as anticipated according to its corporate reputation, it will lose the capital it has accumulated in this asset (Pérez-Cornejo et al., 2019). In case of banks, reputation is the public reputation which relates to its competence, integrity, and trustworthiness, which results from the perception of the group of stakeholders (customers; shareholders; external creditors; employees; business partners; competitors; in case of financial community such as rating agencies, analysts, and fund managers; government and regulatory authorities; interest groups, e.g., consumer association; and social environment) (Zaby and Pohl, 2019).

Further development of performance and reputation strategies is always accompanied by risk. The significance of reputation risk is often underestimated in terms of scale and influence. Existing and emerging risks imply not only adverse consequences for the organisation but also opportunities. A prudent and strategic model of reputation management could reduce the risk of potential threats and increase organisational capabilities (Inglis et al., 2006). Critical situations are a natural phenomenon of business conduct; therefore, proper preparation for such potential conditions is necessary to minimise reputation loss. Reputation risk could be identified as a risk that could be sensitive to the entire organisation. Reputational risk arises from self-contained actions of the organisation and the expectations of stakeholders. The reputational risk could be detrimental not only to the ability of the organisation to function but also to community-based authority (Craig, 2015). Organisational managers usually perceive reputational risk only as a threat of potential loss.

Craig (2015) explains this by the fact that reputation risk is the sum of potential profits and losses of reputable capital. According to Nguyen and LeBlanc (2018), the effects of reputational risk could be measured by the emergence of crises or problems. Crises usually occur with a lower degree of profitability, a slowdown in organisational processes, uncertainty in decision-making and urgency. The problem is treated as the difference between the expectations of the individuals involved in the organisation and the current perception of the organisation's behaviour and reaction. Usually, critical situations are unexpected and open to different types of speculative interpretations, while huge problems arise slowly and predictably, and are determined by the priority given by the people involved. In practice, critical situations force organisations to make sudden decisions and drastic changes while long-term emerging problems allow organisations to deepen the analysis of the problem sources and develop consistent learning through practical solutions. Accordingly, the emergence of a different type of exposure determines the individual model of the organisation's reputation risk management and the exceptional controls that guarantee ultimate protection against re-emergence. The definitions of the organisational reputation risk provided by the scientific literature sources are provided below (Table 1).

Table 1 Concepts of reputational risk

Committee on Banking Supervision (2009)	Reputational risk is the risk arising from a negative perception of the part of customers, counterparties, shareholders, investors or regulators that could adversely affect a bank's ability to maintain existing, or establish new, business relationships and continued access to sources of funding (e.g., through the interbank or securitisation markets).
Aula (2010)	Reputation risk is a potential source for reputation loss that threatens organisations in various ways. Loss of reputation affects competitiveness, positioning, trust and loyalty of stakeholders, media relations and legality of operations.
Gudelytė and Valužis (2012)	Reputational risk is an existing or anticipated risk that may adversely affect the bank's income or capital due to unfavourable opinion on the financial institution reputation which includes business partners, depositors and investors.
Craig (2015)	Reputation risk is the sum of potential profits and losses of an organisation's reputation capital.
Hedgecoe (2016)	Reputational risk reflects a new vulnerability approach and guides managers to the need to respect and react to the new requirements for reputation management.
Walter (2016)	Reputational risk in the financial services sector is associated with the probability of loss in the going-concern value of the firm – i.e., the risk-adjusted value of expected future earnings. Reputational risk is related to the strategic positioning and execution of the firm, conflicts of interest exploitation, individual professional conduct, compliance and incentive systems, leadership and the prevailing corporate culture.
Eckert and Gatzert (2017)	Reputation risk is generally defined as a risk of risks. It could be described by the causal chain of events in that an underlying crisis event leads to negative perceptions by a firm's stakeholders (e.g., consumers, counterparties, shareholders, employees, regulators), thus deteriorating corporate reputation.
Nguyen and LeBlanc (2018)	Reputation risk treated as the possibility of harmful linking of actions and events with the consequences of an organisation. Increasing possibility lowers the likelihood of achieving the organisation's goals.

Source: Created by the authors based on the references listed

Eckert and Gatzert (2017) propose to incorporate reputation risk into an operational risk assessment, and this represents first steps to obtain a more comprehensive understanding of the impact of operational risks by making use of the mean reputation loss or by assuming a distribution for reputational losses to illustrate the impact of randomness. Moreover, reputational risk is associated with a loss of reputation that puts the organisation at risk in each area (Aula, 2010). The impact of risk is directly related to a specific event and to the organisation's ability to respond appropriately and solve problems. Reputation risk criteria are formed by factors of capital, financial, operational, social and intangible risks (Nguyen and LeBlanc, 2018). A reputation risk causes reputational loss as to the total financial loss due to, e.g., a loss of current or future customers or a loss of employees due to the injured reputation (Eckert and Gatzert, 2017). Reputational risk elements could be divided into social and political, commercial and organisational (Hedgecoe, 2016). Social and political elements relate to external standards of public behaviour, i.e., with environmental standards, labour relations, indifference towards employees, discrimination, not tact, violation of human rights,

inadequate reaction, corruption and bribery. The elements of commercial and organisational activities are of internal origin, namely the interruption of services, poor quality consulting, fraud, inefficient management, intervention by regulators, defending counterparties, internal conflicts between members of the organisation, safety issues, ill-considered strategic decisions. When a reputational problem arises, it is difficult to measure the loss correctly, as reputation is, nevertheless, attributed to intangible assets. What is more, reputational risk of large international banks arises from the intersection between the bank and the competitive environment on the one hand, and from the direct and indirect network of controls and behavioural expectations within which the bank operates, on the other hand (Walter, 2016).

2.2 Reputational significance at the level of organisation

The importance of the organisational reputation itself had increased over the decade, as the disastrous results and the accumulated experience of the examples made it possible to understand the apparent value of reputation in the context of an organisation. Reputation is treated as one of the organisation's value drivers (Titko and Shina, 2017). Heterogeneity in the context of reputation evaluation means differences or uniformity of dimensions of perception of the reputation of the stakeholder organisation (Aula, 2010). It is essential to define that the reputation of each organisation must be individual and tailored to the relevant criteria. The assessment of an organisation and its operational processes is perceived differently by each stakeholder, respectively, and the organisational reputation from each perspective may vary.

According to Aula (2010), in practice, one overall reputation assessment is impossible. Reputation is based on the apparent knowledge of the situation; therefore, the reputation perception, usually, could only be either positive or negative. Maden et al. (2012) note that reputation is the link between many elements, i.e. employees' opinion about the workplace, the consumer's attitude towards the service provider, return on the acquisition of the investors' shares. Accordingly, reputation management is planned to take into account the purpose and orientation of the organisation, which determines the individuality of the reputational risk management model and its inconsistency with the views of specific stakeholder groups. The reputation of the organisation as a social identity is widely used in the organisation's positioning strategy, as it has a significant impact on the choice of user products and services (Nguyen and LeBlanc, 2018). Besides, the well-established reputation of the company helps to attract potential investors and skilled workers and also contributes to the development and maintenance of customer loyalty. Finally, the reputation of the company has a significant impact on the competitiveness of the organisation in the market, so analysing the influence of reputation and its risks is particularly important for every organisation that seeks to maintain its competitive edge. In the context of the service organisation management, an appropriate service delivery and sales system is considered to be the foundation of the organisation that maintains and enhances the reputation level.

According to Raithel and Schwaiger (2015), the concept of reputation conceptualisation describes the impact of past actions of an organisation on its stakeholders. This kind of influence is determined by the beliefs of the stakeholders about the behaviour of the organisation concerning the behaviour of its competitors. Therefore, companies that have a positive reputation could successfully influence stakeholder decision-making processes. Good reputation, for example, reflects the quality and

reliability of the company's products or services and therefore has a positive impact on customer behaviour, satisfaction, loyalty and readiness to bear. In the labour market, a high level of corporate reputation could help attract and retain talent, reduce employee turnover and increase performance by lowering wages based on increased employee motivation. Besides, negotiation, contracting and monitoring costs in supplier markets could be reduced if the company has a good reputation (Bergh et al., 2010). Opportunities for a reputable organisation to gain access to broader capital markets are increasing as investors tend to believe that such reputable companies are reliable and valuable in terms of credit. Thus, a good reputation attracts investors and could allow the company to choose higher emission prices.

In terms of public reputation perception, the number of superior reputations depends on the opinion of various stakeholder groups (Lange et al., 2011). As mentioned earlier, since these opinions are not necessarily harmonised, a company may have a 'variety of reputation'. The perception of public reputation is explained by the indicator for many of the above-mentioned behavioural results, as the general public is made up of potential customers, employees, shareholders and competitors.

The reputation risk is one of the essential risks affecting the trustworthiness and credibility of commercial banks. The significance of reputation risk management and the quality of their valuation remain significant as the probability of the reduction in, or loss of business reputation affects the financial results and the degree of customers', partners' and stakeholders' confidence (Kunitsyna et al., 2018).

2.3 Reputation assessment opportunities

Craig (2015) imposed that the reputation of companies could be assessed relying on four groups of categories –

- value
- leadership
- management
- responsibility.

When analysing the value, the generated profit, the position in the market, the financial performance indicators are evaluated. Approach to leadership combines conclusions about organisational vision, leadership and strategic decisions. The definition of the management criterion for reputation is based on the transparency of management procedures, relationships with stakeholders and customers. The organisation's investments in finance and ideas for the well-being of employees, society and the environment ensure a positive assessment of the responsibility criterion.

According to Matuleviciene and Stravinskiene (2015), the condition of an organisation's reputation could be assessed based on the reputation dimensions. Zaby and Pohl (2019) chose the following drivers of overall bank reputation and used them in a suggested controlling model for reputational risk management in banks: *social requirements, financial, quality of internal processes* and *customer satisfaction*.

Conclusions by Fombrun et al. (2015) prove that reputation factors could be divided into the following six dimensions:

- 1 *financial performance dimension*: profitability, organisational investment risk, competitiveness, growth prospects
- 2 *vision and leadership dimension*: future vision, governance, market opportunities
- 3 *the dimension of goods and services*: progress, quality, value for money and value of goods and services, innovation
- 4 *the dimension of the working environment*: right working conditions, good workers, a fair system of remuneration for employees
- 5 *social responsibility dimension*: governance, attractive employer status, good employee network
- 6 *emotional attraction dimension*: positive emotions with the organisation, admiration, trust in organisation and respect.

The indicators of reputation evaluation presented in Table 2 reflect the essence of the six critical dimensions of corporate reputation assessment – indicator groups are based on financial values of results, vision and leadership, goods and services, the work environment, social responsibility and emotional attractiveness that create a collective reputation. Evaluating financial performance could describe the degree of reputation and reflect the repercussions of reputation on an organisation's activities. Every profit-making organisation, first and foremost, focuses on its performance and effectiveness, so most of the standard business units understand the repercussions of their reputation only if they notice the result through the prism of financial achievement or loss. The results of financial performance analysis may not only testify to the loss that has already occurred, but also predicts what the prospects of the organisation are for the event of reputational risk.

The opinion of many authors, evaluating the attributes related to the organisational reputation overlaps – there is a set of six elements in the literature, which forms the model of the reputation index (Lange et al., 2011; Raithel and Schwaiger, 2015). The model includes criteria such as emotional attractiveness, work environment and employer image, vision and leadership, social responsibility, financial results, products and services. Authors believe that proper management of these criteria could ensure business success. However, it could be noted that Nguyen and LeBlanc (2018a) suggest understanding the influence of reputation through dynamism, time, bilateralism of the relationship, and the ranking of the organisation on the contrast of its competitors; the diversity of the organisation's reputation, based on the organisation's economic, social and personal background. Summing up the listed author's characteristics, it could be concluded that the organisation's reputation is the public's comprehensive assessment of the organisation over time. By systematising the opinions of the authors on the significance of reputation, it could be concluded that there is more significant support in the literature for the approach based on the expectations of external and internal participants, which motivate the appearance of reputation factors and, consequently, their instant assessment. It could be noted that according to Helm (2007), reputation could be perceived differently depending on the way the external parties join the group. However, the formation of individual opinion is usually determined by the attitudes of other external events and parties, so in practice, reputation assessment based merely on an approach construct that exists solely on an individual basis is not possible.

Table 2 Breakdown of organisational reputation evaluation dimensions

<i>Indicators</i>	<i>Dimensions</i>
Business results, profitability, competitiveness, growth, the threat of bankruptcy, degree of inadequacy	Good financial performance
Organisational past and future actions, clear vision, clear short and long-term strategies	Business strategy
Ability to adapt to change, risk management, coordination, flexibility and communication with the outside	Business strategy implementation
Market leadership, recognition, development.	Leadership
Excellent quality of goods and services, implementation of quality management systems, innovation, value creation, orientation towards consumers.	Organisational products
Focus on consumers, listening to offers, effective advertising	Customer focus
Installation of product and service development programs, investment in research and development, new and unusual distribution channels	Innovation and value
Teamwork and openness to change, environmental credibility, respect for the culture promoted by the organisation	Organisational culture
Ability to attract and retain talented employees and nurture them, right working conditions, employee satisfaction and motivation.	Human resources
Honesty, transparency, avoidance of aphorisms, corruption and fraud, promotion of ethical behaviour of employees	Fair and ethical activity

Source: Petrokaitė and Stravinskienė (2014)

3 Research methodology

In order to research the impact of both external and internal reputational factors, the expert evaluation method was applied to assess the determined factors that were going to be identified using the interview method. For identifying the most affected year of the financial company's activity, the multi-criteria decision-making methods (MCDM) were employed.

The first step is to select the experts. The experts had to meet the following criteria:

- experience in risk management and customer relationship fields (at least three years)
- work experience with the financial organisation operations
- workplace in a commercial bank
- project work related to the evaluation of a bank's financial/reputational performance.

The number of experts was selected according to Libby and Blashfield (1978) and was equal to three. Two of them were team-leaders, and one of them took up the position of the risk management operations officer in the commercial bank. In order to identify the reputational factors, the informal interview was organised. Such type of interview was chosen as makes the interviewees feel relaxed and unassessed (Qu and Dumay, 2011). Despite that fact, the interview was focused on particular items.

The experts' evaluations were processed using SAW and COPRAS methods. Two methods were chosen in order to compare the results and prove their validity.

The SAW method is treated as one of the most commonly used methods. The method is calculated S_j criterion shows the idea of quantitative multi-criteria methods, i.e., combining values of indicators and their weights into one size (Podvezko, 2011). First of all, the normalisation procedure is made by applying the following formula (1) (Ginevičius and Podvezko, 2008):

$$\bar{r}_{ij} = \frac{r_{ij}}{\sum_{i=1}^m r_{ij}}, \quad (1)$$

where

r_{ij} : value of the i th index for the j th object

\bar{r}_{ij} : normalised value of the i th index for the j th object.

After the normalisation procedure S_j criterion is calculated (see formula (2)):

$$S_j = \sum_{i=1}^m w_i \bar{r}_{ij}, \quad (2)$$

where

w_i : weight of the i th criterion

\bar{r}_{ij} : normalised i th criterion's value for j th object; $i = 1, \dots, m$; $j = 1, \dots, n$

m : the number of criteria used

n : the number of objects (alternatives) compared.

The drawback of the SAW method is that all the criteria ought to be maximising; hence, the minimising criteria should be converted to the maximising ones (see formula (3)):

$$\bar{r}_{ij} = \frac{\min_j r_{ij}}{r_{ij}} \quad (3)$$

The transformation formula used for transformation of maximising criteria is as follows (see formula (4)):

$$\bar{r}_{ij} = \frac{r_{ij}}{\max_j r_{ij}} \quad (4)$$

Another disadvantage of the method is that all the criteria values r_{ij} are positive. In other words, the negative values have to be converted to positive by using the below-presented formula (see formula (5)):

$$\bar{r}_{ij} = r_{ij} + \left| \min_j r_{ij} \right| + 1 \quad (5)$$

Another method used for the research was COPRAS. The method allows to compare and rank the data (Kraujalienė, 2019). The criterion significance q_i is proportionally divided

for all alternatives a_j , depending on their values x_{ij} . The first step is to calculate the sum of normalised indices for each element j . The alternatives are described in both the reducing indexes S_{-j} and the increasing indexes S_{+j} . Amounts of normalised indices are calculated according to the following formulas (see formulas (6) and (7)) (Ginevičius et al., 2008; Podvezko, 2011):

$$S_{+j} = \sum_{i=1}^m d_{+ij}; \quad S_{-j} = \sum_{i=1}^m d_{-ij}; \quad i = \overline{1, m}; j = \overline{1, n} \quad (6)$$

where

d_{ij} : sum of non-subjective obtained values.

The relative significance Q_j of each alternative a_j is calculated by the formula (Podvezko, 2011):

$$Q_j = S_{+j} + \frac{S_{-min} \sum_{j=1}^n S_{-j}}{S_{-j} \sum_{j=1}^n \frac{S_{-min}}{S_{-j}}}; \quad j = \overline{1, n}. \quad (7)$$

Based on the calculated relative Q_j values, the priorities of the alternatives are determined. The higher the value of Q_j , the higher is the priority of the alternative. The significance of the alternative a_j in Q_j shows how much the chosen alternative corresponds to the pattern of the variation of the reputation size. Meanwhile, the significance Q_{max} describes the most appropriate alternative.

To know if the experts' evaluations could be used for the research, Kendall's coefficient of concordance ought to be calculated (see formula (1)) (Volkov et al., 2019).

$$W = \frac{12S}{r^2 m(m^2 - 1)}, \quad (1)$$

where

- R_i : sum of the rankings of each criterion required for calculation of the S_i indicator.
- S_i : the difference between the sum of the criteria rank R_i and the average R of all criteria rankings.

4 Empirical findings

Based on the structured theoretical concepts related to the reputational consideration, it could be said that the level of organisational reputation may depend on both internal and external factors. Each of the listed groups could also be attributed to the results of the financial performance, strategy implementation, quality of services, working environment, social responsibility and emotional experience. Internal reputational factors could be characterised by indicators such as employees number, generated loss or operating expenses, labour productivity. Meanwhile, external factors affecting the reputation levels could be explained by the involved parties' reaction on the organisation

activity combined with the outlook on the market and economic events. The empirical study includes expert research, which allows identifying the way the reputational impact could be measured. In the current study, one investigated bank (hereinafter referred to as the Bank) and two banks competitors (hereinafter referred to as bank I and bank II), operating in Lithuania, are investigated. The results reached during the informal interview with three experts within the financial banking services in the investigatory bank reflect the possibility to evaluate the impact of reputation through market ratings. While evaluating the reputational impact of a bank, it was proposed by the interviewers to rely on such widely known and usable ratings as:

- Brand finance global banking
- Global 100 most sustainable corporations
- Most valuable Nordic brands top 50
- Green ranking global top 100
- Moody's ratings.

To identify the year that was mostly affected by the reputational factors, the mentioned ratings' results are included in the multi-criteria study. From the list of reputation factors proposed by the scientific studies, during the informal interview with the experts, it was approved to include such factors as:

- the level of organisation expenses
- number of employees in the Bank and its competitors' banks
- social responsibility indexes: environmental, social and governance.

The decision to involve the reputational factors into further study was taken when all three experts approved that significance in the reputational context is valid. Therefore, in order to evaluate the performance year that mostly affected by the reputational factors, multi-criteria assessment models include the following elements:

- Ratings: Brand Finance Global Banking 500 (100)
- Ratings: Global 100 Most Sustainable Corporations
- Ratings: Most Valuable Nordic Brands Top 50
- Ratings: Green Ranking Global Top 100 (Nordics)
- Development in the number of job ads over time Denmark
- Social responsibility: Environment
- Social responsibility: Social
- Social responsibility: Governance
- Income statement: Operating expenses, DKK
- Number of employees: the Bank

- Number of employees: competitor bank I
- Number of employees: competitor bank II
- Moody's rating: Issuer Outlook (positive/negative)
- Moody's rating: Class History – Counterparty Risk Assessment
- Moody's rating: Issuer Rating
- Moody's rating: Commercial Paper
- Moody's rating: Short Term value
- Moody's rating: Baseline Credit Assessment
- Moody's rating: Bank Deposits Frequency.

Analysing the position of the Bank, it could be seen that the ratings vary over time (Table 3). “Brand Finance Global Banking” rating is conducted by the Brand Finance company founded in 1996 – for now, the company is leading independent branded business valuation and strategy consultancy, presenting in 20 countries. The reports on the brand are based on detailed research into the world's most valuable brands and other intangible assets. It could be seen that the analysed bank position in this report is pointed at the 67–75 place. The most efficient year for the bank in terms of brand strength is 2016, while the year when the bank's brand has become less attractive was 2018. The “Global 100 Most Sustainable Corporations” report is executed by the Corporate Knights Inc. company, which has a research division that produces rankings and financial product ratings based on corporate sustainability performance. It could be noted that according to this report, the Bank takes up quite high positions – the granted places varied from 4th in 2017 to 23rd in 2018. As far as the Bank is established in Denmark as well as the principal operations activity covers the Nordic market, the bank risk management rely on the ranking of most valuable Nordic Brands prepared by the Branding Institute CMR company which helps companies to brand itself by transforming academic insights into business solutions. The purpose of the stated ranking is to outline the most valuable and hard-working Nordic brand portfolios and to estimate the value generated by each company. It is noted, that analysed bank is placed into 13–18th position out of 50 companies during the 2014–2018 year. “Green Ranking Global Top 100 (Nordics)” rating is conducted by the same Corporate Knights company and is focused on the environmental performance valuation of the publicly traded companies. Evaluating only the environmental contribution of the subject company, it is evident that the positions are significantly lower than in the list of most sustainable corporations. The Bank is granted with 31st to 55th places during five years' period.

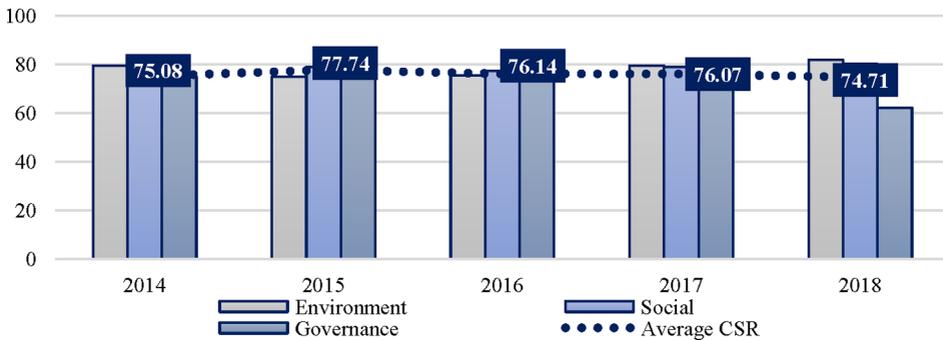
It could be noted that the Bank has lowered its position during its activity in 2018. In other words, the brand strength the bank loses its 67th position in 2017 and is granted with 73rd. Among the most sustainable global corporations, the Bank lost a position in 2018 with the difference of 19 places and was granted only with 23rd. For the most valuable Nordic brand, the Bank in 2018 made it up only to the 18th position with the difference of five places compared to 2017. By the environmental activity, the bank was ranked with 49th place in 2018 while in 2017 it was listed in the 37th place.

Table 3 The rank of the Bank according to the 2014–2018 rating reports prepared by Brand Finance, Corporate Knights Inc., Branding Institute CMR

Year	Brand finance global banking 100	Global 100 most sustainable corporations	Most valuable Nordic brands top 50	Green ranking global top 100 (Nordics)
2014	73	12	13	55
2015	72	10	14	31
2016	75	7	15	41
2017	67	4	13	37
2018	73	23	18	49

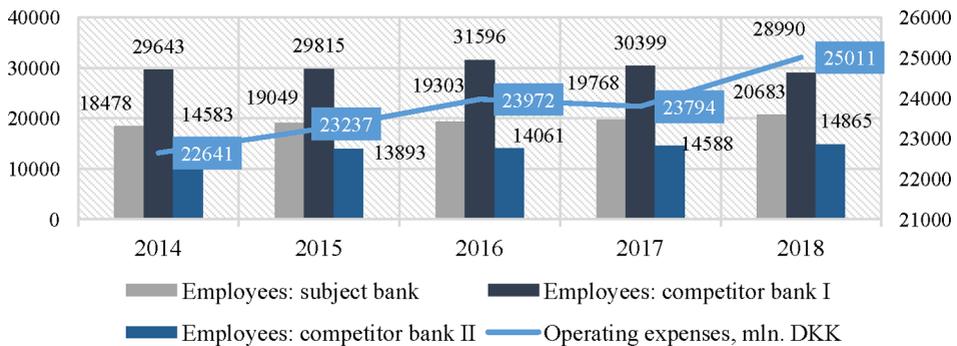
If looking deeper into the Corporate Social Responsibility indexes, the organisational contribution could be measured by three natures of the responsibilities: environmental, social, and governance. The Sustainalytics, which is a global leader in ESG and Corporate Governance research and ratings, proposes the monthly updates for the social responsibility indexes attributable to different organisations. The environmental, social and governance ratings are categorised across five risk levels, that are as follows: negligible, low, medium, high and severe Stated rating scale from 0–100%. Figure 1 shows the CSR ratings proposed by Sustainalytics of the Bank over the 2014–2018 period in the mentioned areas. It could be seen that the overall average CSR rating was lowered by 0.37% over the five years. The highest level of responsibility taken was reached in 2015 and was evaluated at 77.74%.

Figure 1 The environment, social, governance (ESG) metrics for the bank during 2014–2018 (see online version for colours)



As the experts proposed, the operating expenses and employee number in the subject and competitors bank factors are also taken into account while conducting the multi-criteria research (Figure 2). Compared to the start of the period in 2014, the expenses in 2018 has increased by 2370 mln. DKK, which means that the need of the company to integrate itself in the market after the external events, became more demanding. As for the employees’ criteria, it is noted, that in the Bank there are more full-time employees allocated than in the competitor bank II (in 2018 there were 5818 employees more in the Bank). However, the competitor bank I is stronger in terms of the workforce obtained within the organisation as in 2018, the difference with the Bank was estimated at the number of 8307 employees.

Figure 2 Operating expenses, mln. DKK and number of employees in subject and competitors bank, 2014–2018 (see online version for colours)



Another essential criterion to include is the ratings proposed by the Moody's Corporation, which reflect the reputation of the financial services companies in terms of the debt instruments and securities – what is a crucial decision-making component for investors, stakeholders, as well as large-scale clients. Moody's Corporation is providing the credit ratings, research, tools and analysis that contribute to transparent and integrated financial markets. For the Bank assessment with the advice of the experts, the following indexes are chosen:

- issuer outlook
- counterparty risk assessment
- issuer rating
- commercial paper
- short term value
- baseline credit assessment
- bank deposits.

An issuer outlook is an opinion regarding the likely direction of an overall issuer rating over the medium term. The issuer outlook rating is divided into four categories: positive, negative, stable, developing. The information provided in Table 4 indicates that during 2015–2017 years' period, the outlook of the subject company in terms of its financial instruments condition was from stable to positive, while the situation changed to negative in 2018. The next indicator, Counterparty Risk Assessment, refers to the probability of default (missed payment due to inability) on operational obligations and other contractual commitments. The performance of the Bank on the mentioned CR Assessment is evaluated at the rate of Aa2–Aa3 which means that company's obligations are considered to be of high quality and are subject to very low or low credit risk. Issuer rating is the forward-looking prediction about the company as an obligator overall creditworthiness (it may differ from the Issuer Outlook criteria due to the different variables included) – the Bank is rated at the level of A1–A2 which means that the subject financial organisation is reliable in terms of its credibility with a quite low risk involved

in operations. The parties interested in the acquisition of commercial papers are exposed to the credit risk as well – in this context the subject company is rated through the risk level by which the potential investor is exposed not to receive the new paper at the maturity point. During the four years, the Bank is rated at the level of P-1, which indicates the Prime-1 rating and means a superior ability to issue new Commercial Papers. Short term obligations of the Bank were rated on the highest level from the 2016–2018 year; however, the lowest figure was noted in 2015. Baseline Credit Assessment is reflecting the company's financial strength in the context of support by government which could include banks, sub-sovereigns and government-related corporate issuers. From Table 4 below, it could be seen that the rating of the baseline credit was switching up continually from 2015 to 2018 – the position of the bank in the eye of the governmental institutions had changed from medium-grade with moderate credit risk and possible speculative characteristics to upper-medium grade with the considerably low credit risk. The bank deposits rating include the outlook on the ability to repay the foreign and domestic currency deposits in time – the position of the Bank raised from A3 to A1 which symbolises the measures taken during four years' period to enhance the efficiency on the currency repayments.

Table 4 The Bank ratings in terms of debt instruments and securities

<i>Year</i>	<i>Issuer outlook</i>	<i>Counterparty risk assessment</i>	<i>Issuer rating</i>	<i>Commercial paper</i>	<i>Other short term</i>	<i>Baseline credit assessment</i>	<i>Bank deposits</i>
2015	Stable	Aa3	A2	P-1	(P)P-2	baa2	A3
2016	Positive	Aa3	A2	P-1	(P)P-1	baa1	A2
2017	Stable	Aa2	A1	P-1	(P)P-1	baa1	A1
2018	Negative	Aa3	A2	P-1	(P)P-1	a3	A1

Source: Moody's rating 2015–2018

The multi-criteria assessment was conducted relying on three methods: SAW, COPRAS and geometric mode. During the SAW and COPRAS methods usage, there were two scenarios applied – one scenario has an assumption that the importance weights of the factors are equal while the second one had the assumption that the importance weights which were elected by the experts do have the valid and realistic meaning in terms of reputation impact identification. The systemised results are presented in Table 5.

According to the SAW method, the mostly affected year is chosen by the measured S_j coefficient. At first, it was decided to evaluate the reputation impact on the specific year activity when assuming that all of the criteria are equally important. This means that each of the criteria had a weight of 0.053 or 1/19 as the overall number of criteria included reaches the level of 19.

While applying the same weight assumption in SAW method completion, the measured S_j coefficient was the lowest in 2015 – **0.191**, which means that this year activity of the company was the least affected by the reputation criteria. The most considerable S_j coefficient measure is fixed at the 2018 year's activity assessment point – the level reaches the value of **0.224**, which reflects that the position of the company in 2018 was significantly affected by the reputational risk events.

Table 5 Results on the multi-criteria valuation of reputational factors

Year	SAW method when weights equal			COPRAS according to the expert valuations			Significance of alternative (Q)	Significance of alternative (Q)	Significance of alternative (Q)
	Sj coefficient	Sj coefficient	Sj coefficient	Geometric mean method	COPRAS method when weights equal	1 expert			
2014	0.197	0.205	0.203	0.187	0.197	0.205	0.203	0.201	
2015	0.191	0.200	0.190	0.184	0.192	0.200	0.192	0.189	
2016	0.197	0.194	0.189	0.186	0.196	0.193	0.188	0.193	
2017	0.191	0.187	0.179	0.184	0.190	0.187	0.178	0.182	
2018	0.224	0.215	0.239	0.214	0.225	0.215	0.239	0.234	

Source: Calculated author

Besides, the SAW method is applied, including the factors, the importance of which is assessed by the experts. When evaluating the multi-criteria methods, it is necessary to emphasise the degree of compatibility of expert opinions. If the number of experts is higher than two, the level of compatibility of the experts in the group is determined by Kendall's coefficient of concordance W . Three experts were asked to assess the significance of the criterion from 0.01 to 1.

While calculating the coefficient of concordance W , it is necessary to perform the ranking of expert evaluations, which is performed by assigning the best-evaluated criterion to the first rank, the second weighting by the second rank, and so on.

Table 6 Data needed for calculation of Kendall's coefficient of concordance

<i>Criteria</i>	<i>Expert evaluation (ranking)</i>			R_i	S_i	S_i^2
	<i>1</i>	<i>2</i>	<i>3</i>			
Ratings: Brand finance global banking 500 (100)	3	2	1	6	-23.3158	543.626
Ratings: Global 100 most sustainable corporations	1.5	1	4	6.5	-22.816	520.560
Ratings: Most valuable Nordic brands top 50	5.5	3	2	10.5	-18.816	354.034
Ratings: Green ranking global top 100	4	4	3	11	-18.316	335.468
Development in the number of job ads over time Denmark	14	16	16	46	16.684	278.363
Social responsibility: Environment	19	19	19	43	13.684	187.258
Social responsibility: Social	16	18	10	44	14.684	215.626
Social responsibility: Governance	17	17	11	45	15.684	245.994
Income statement: Operating expenses, DKK	5.5	7	5	20	-9.316	86.784
Number of employees: the Bank	11	8	6	24	-5.316	28.258
Number of employees: competitor bank I	8	6	8	21	-8.316	69.152
Number of employees: competitor bank II	7	5	7	18	-11.316	128.047
Moody's rating: Issuer Outlook (positive/negative)	15	14.5	17	37	7.684	59.047
Moody's rating: Class history – counterparty risk assessment	1.5	11	9	31.5	2.184	4.771
Moody's rating: Issuer rating	12	10	12	33	3.684	13.573
Moody's rating: Commercial paper	10	12	14.5	38.5	9.184	84.350
Moody's rating: Short term value	18	14.5	18	50.5	21.184	448.771
Moody's rating: Baseline credit assessment	9	9	14.5	32.5	3.184	10.139
Moody's rating: Bank deposits frequency	13	13	13	39	9.684	93.784

Source: Authors' calculations

Table 6 includes the ranks assigned to each of the factors by the experts as well as the components of the formulas needed to obtain the value of Kendall's coefficient of concordance. According to the assigned ranks, it could be seen that the 1st expert pointed

out the significance of the “Global 100 most sustainable corporations” and “Counterparty risk assessment” as equally highest among all of the factors. According to the 2nd expert most crucial factor while valuing the reputation is “Global 100 most sustainable corporations” rating as well. The 3rd expert believed that the bank’s position in “Brand finance global banking 100” ratings is the most valuable factor to assess. As for the least important factors, all of the experts had chosen the factor of social responsibility ranking in terms of environmental impact. The 18th rank is assigned to social responsibility rating in terms of the social impact by the 2nd expert and the short term (commercial papers issuance) obligations rating by first and third experts.

It could be seen that there are additional data required for calculations of the Kendall coefficient of concordance $W - R_i, S_i, S_i^2$. R_i is the sum of the rankings of each criterion required for calculation of the S_i indicator. Meanwhile, S_i is the difference between the sum of the criteria rank R_i and the average R of all criteria rankings. The sum of all S_i^2 is used to calculate the concordance coefficient W . With the calculated R_i , the average of all factors’ rankings that determine the reputation level: $R = 29.316$. Having the calculated S_i and S_i^2 , the sum S of S_i^2 measured for each factor = 3707.6. Kendall’s coefficient of concordance is equal to 0.72, which shows the high similarity level of experts’ evaluations. Hence, it could be concluded that there is an agreement between the experts. It means that the study involving the estimates proposed by the experts could be continued.

Taking into account the valuation of the experts while assessing the SAW method for multi-criteria assessment, it could be noted that the 1st place is taken by the 2018 year’s activity (Table 7). The most significant effect on the Bank by the chosen reputational factors is measured at the level of 0.2145 by the first expert, 0.23918 by second expert and 0.23392 by the third expert – which are the highest among other valuation years’. Another most significant significance S_j coefficients are assigned to the 2014 year of the bank’s activity – 0.20451 by the first expert, 0.2025 by second expert and 0.2012 by the third expert.

The least affected year according to SAW method with weights taken based on the experts’ opinion is 2017, which means that reputational risk occurrence during this year was the lowest in terms of bank’s activity.

When using the average geometric method, it is essential to use normalised data to calculate the significant coefficients. It is worth to note that the use of weights is not relevant for this method; therefore, the effect of equal or expert weights on results is not emphasised based on the geometric mean method. The first step to obtain Π_j significance criteria are to calculate the multiplied normalised values obtained by multiplying all of the normalised values for each year assessment criteria. Since the number of available criteria is equal to 19, the 19th-degree root is extracted from the normalised value product.

The average geometric method gives an insight that the most affected year by the reputation is 2018 with the significance value of 0.2135. While the year which activity has not been affected by the reputational events was 2015 – the measured Π_j value reaches the level of 0.1835.

Table 7 Evaluating the years of company's activity based on the reputational factors

Place	SAW method when weights equal	SAW according to the expert valuations			Geometric mean method	COPRAS method when weights equal	COPRAS according to the expert valuations		
		1 expert	2 expert	3 expert			1 expert	2 expert	3 expert
I	2018	2018	2018	2018	2018	2018	2018	2018	
II	2014	2014	2014	2014	2014	2014	2014	2014	
III	2016	2015	2016	2016	2016	2015	2015	2016	
IV	2017	2016	2016	2017	2015	2016	2016	2015	
V	2015	2017	2017	2015	2017	2017	2017	2017	

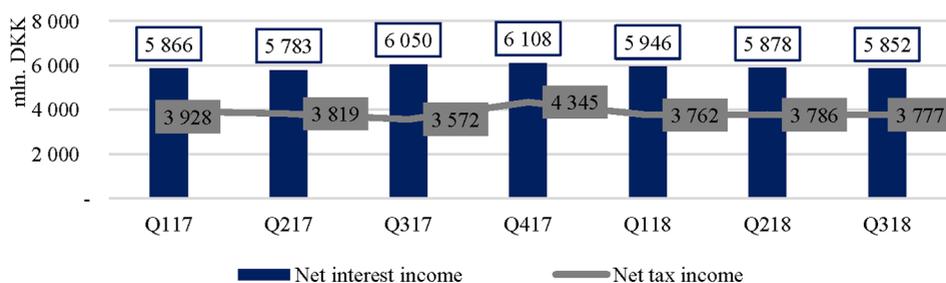
Source: Author's calculations

To ensure the accuracy of the received data, it is important to perform the reputation impact analysis by the COPRAS method and compare the results obtained with SAW and geometric mean methods – as the CORAS method provides a more accurate estimation of the calculation results. Following the same logic as while applying the SAW method, first, the study is carried out on the assumption that each of the investigated factors is equally important and significant. At this stage, in order to continue the COPRAS study, it is important to find out which of the determinants of reputation may have both a positive and a negative impact on the company's activity. In this way, Q_j indexes for reducing and increasing relative significance are determined. Analysing available factors and their potential impact on reputation, reducing indices are applied to the employees in competitors' bank I and II factors. Accordingly, increasing indexes are attributed to all other 17 reputational factors left. Further, with normalised data and set reputation reducing and increasing indices, it is necessary to measure the amounts of maximising and minimising normalised scores. Having the sums of certain effect having normalised scores, the Q_j criteria could be calculated. Applying the COPRAS method with the equal weights of 0.053 out of 1, the most affected year within the reputation is 2018 with the point of 0.2245 (which is the highest value for 2018 compared to results proposed by other methods). The lowest significance level (0.1903) confirms the results provided by the SAW method based on experts' evaluations – the year when the company avoided the reputational impact was 2017. When relying on the experts' evaluations, it could be seen, that performed analysis suggests the same significance levels which are attributable to the company's year activity by all of the experts – the most affected years are 2018 and 2014, while the least – 2016 and 2017. The significance measurement for 2018 year fluctuates from 0.214 to 0.239, while for the 2017 – from 0.178 to 0.187.

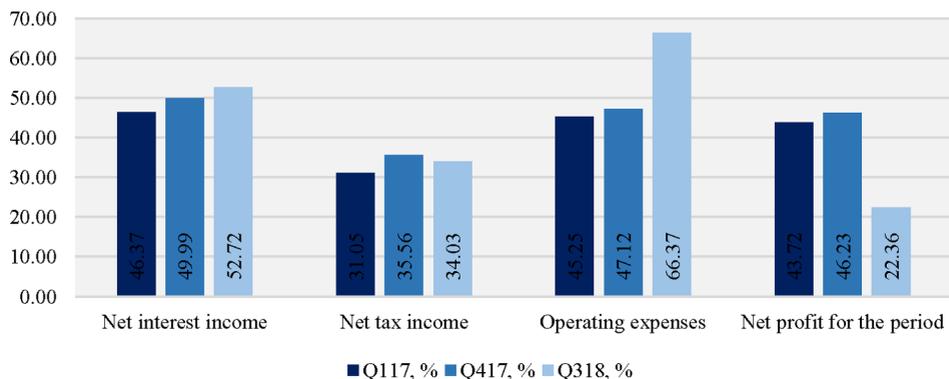
In all of the cases proposed by different methodologies used the reputational impact was at the most massive scale during 2018 and 2014 years. The calmest years for the subject financial company in terms of the reputational impact were the 2015 and 2017 – as the places for the mentioned years' differs with accordance to the methodology used in the multi-criteria assessment. The distribution of the places for the company's yearly activity is mainly influenced by the places taken by the Bank in the records of "Brand finance global banking 100", "Global 100 most sustainable corporations", "Most valuable Nordic brands top 50", "Green ranking global top 100", by the operating expenses, numbers of employees in the competitors' banks as well as by the debt instruments and securities assessment provided by Moody's. Other factors' influence was also taken into account, however, lowering its scale of the impact on the company's reputational image.

In order to evaluate the financial performance of the company during the most affected year, the estimations are made for 2018 Q1-Q3 comparing to the performance of the Bank during the 2017 year which was rated as one of the least reputation-affected years of company's activity. The horizontal and vertical analysis is performed for the balance and income statement sheets taking into account the comparison of the 2017–2018 year performance.

From Figure 3, it could be seen that the result of the net taxable income indicator did not change significantly during the analysed period, but in 2017 a significant one-time increase of the indicator was recorded by the difference 10.62%. Since the last quarter of 2017, the net tax revenue indicator declined by 13.08%. The same tendency is noticed in the dynamics of the net interest income during the 2017–2018 year.

Figure 3 Dynamics of net interest income and net tax income, 2017–2018 (see online version for colours)

From Figure 4, it could be seen that the relative weights were not stable at different times. Despite the fact, that the net interest income, which accounts for the largest share of income at all times, has changed positively during 2018, the share of operating income from total income in 2018 has increased by as much as 20%. It explains the organisation's increased customer retention costs and the strengthening of the anti-money laundering department as well as attracting new employees. The net tax income ratio did not change significantly during the analysed period – the share of income was at the level of 31.05–34.03%. Meanwhile, the share of net profit from the total revenue since the end of 2017 has changed negatively by 23.87% and at the end of 2018 amounted to only 22.36% (Figure 4).

Figure 4 Dynamics of relative weights for income statement indicators, 2017–2018 (see online version for colours)

From the horizontal analysis of the balance sheet items, it could be stated that during 2017 the most significant changes occurred in cash and deposits with central banks (42.99%), non-core business unit assets (−73.56%), current tax assets (−53.23%) and current tax liabilities (168.41%).

The recent changes impose the organisation's cash growth and strategic holding of it in order to settle for unpaid taxes and fines quickly. The decline in the non-core business unit's assets is natural, as the organisation's strategy was changed from 2017 onwards, shifting it from non-core activities to focusing on Nordic operations, so the negative change implies the liquidation or transfer of existing assets.

Although the number of current tax assets decreased in 2017, the ratio of current tax liabilities has increased, which means possible changes in the tax system and the bank's payment settlement method.

From Figure 5, it could be noted that total assets increased from 3,543,540 up to 3,673,028 million DKK during seven quarters of the company's activity – the total change forms a difference of 3.77%. The growth in total assets is mostly affected due to improvements in Repo's lending assets and assets under gross schemes and unit-linked life insurance contracts. It is also important to note that, together with the overall increase in the assets of the organisation, the total liabilities ratio has also increased from 3,383,002 million DKK up to 3,512,325 million DKK – increase by 4.18% from the end of 2017. The equity ratio remained broadly unchanged throughout the period under review, but the indicator exception is visible at the end of 2017 when the indicator risen by 4.81%. However, the 2017 equity growth was offset by a loss of 4.49%, which was mostly affected by a 4.5% decline in shareholder equity during the three quarters of 2018.

Figure 5 Dynamics of key balance sheet indicators, 2017–2018 (see online version for colours)

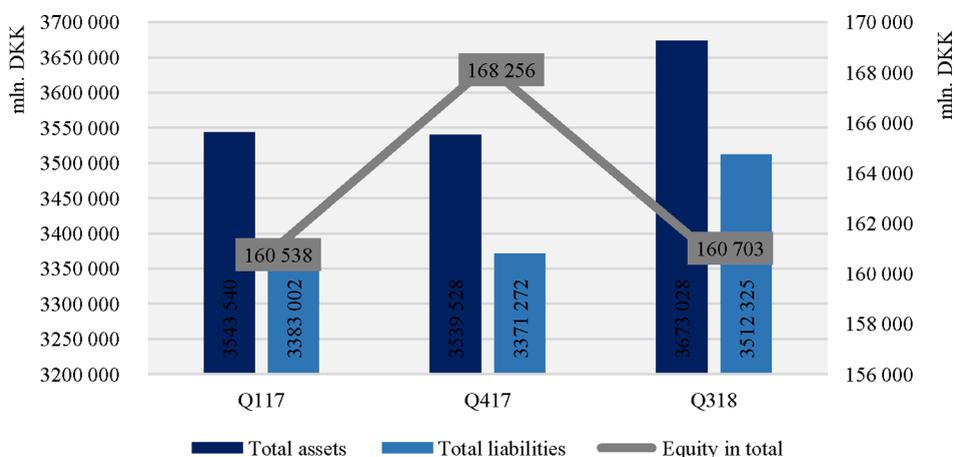
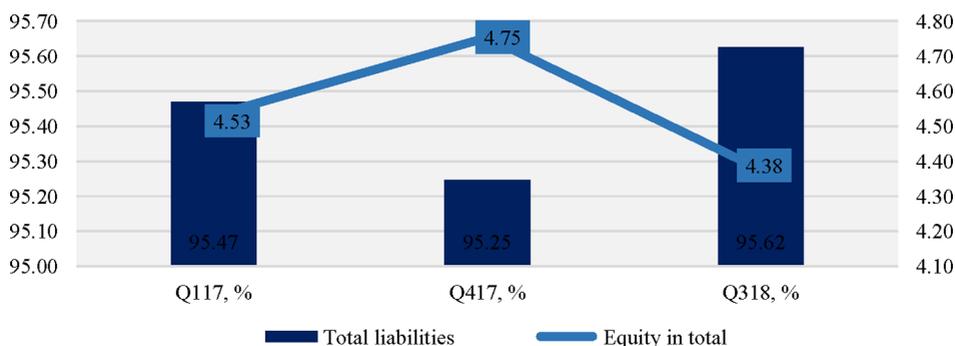


Figure 6 offers the image of the indicators in terms of the share in total assets. It could be seen that the share of liabilities from total assets in various periods ranges from 95.25% to 95.62%, while the share of total equity is not as high as 5%. The share of total equity from total assets at the end of 2017 is recorded as the highest (4.75%) during the analysed period.

Overall, the net interest income of the Bank was changing and unstable during the 7-quarter review period; however, the final result remained at a similar level. It is also noticeable that during the last three-quarters of activity in 2018, overall income before tax decreased significantly. Accordingly, the total pre-tax profit fell by 46.67% in recent years which is the result of a fall in net income and an increase in various types of costs. The third quarter of 2018 in terms of non-core profits is assessed negatively due to the experienced loss. Net interest income and operating expenses are accounted for the largest share of total income at the end of 2017. It could be noted that the share in the overall income of net profit for the period was almost as much as of operating expenses. During 2017 the most noticeable changes occurred in cash and deposits with central banks, non-core business unit assets, current tax assets and current tax liabilities.

Figure 6 Changes in comparative weights of crucial balance sheet indicators, 2017–2018
(see online version for colours)

5 Conclusions

Malfunctioned risk management could lead to loss of organisation reputation. As reputation is associated with the consequences of non-financial risk, reputational risk is assigned to the operational risk group. The reputation of an organisation could be identified with a social identity, which is particularly essential in the positioning strategy because of its significant influence on the choice of the customer's financial services. It could be said that reputational risk is the possibility of the impact of certain events on performance results, which increases the likelihood of achieving the organisation's goals. The reputation of an organisation could be assessed by reputation dimensions such as

- financial performance
- vision and leadership
- goods and services
- work environment
- social responsibility
- emotional attractiveness.

The degree of reputation and the impact of repercussions on the organisation's performance could be assessed through financial analysis. Financial analysis provides a better definition of the phenomena and processes in the company. Although the repercussions of reputational risk could be challenging to measure, financial analysis results could be used successfully in reputation risk management solutions.

The reputational factors proposed by the experts were evaluated conducting the multi-criteria analysis in terms of the most affected period of the company's activity. According to the experts' opinion, the factors which outline the reputational extent of the company are the financial, corporate sustainability, branding ratings of the bank, the position of the debt and equity instruments as well as the workforce of the market parties. The SAW, COPRAS and geometric average methodologies used had shown that the results of the analysed bank were most affected in 2014 and 2018 years. Analysing the periods when the bank had not experienced the significant impact of the reputation,

the least sympathetic activity is identified in 2015 and 2017 years. To monitor the tangible impact of the reputation on the financial condition of the company, the financial analysis for the horizontal and vertical outlook of the financial statements is executed.

Based on the results of the financial analysis, the decrease in other income and profit before taxes was the result of a decrease in net income and an increase in various types of costs. A noticeable downward trend in business results is due to the responsibility of the organisation for breaching the anti-money laundering rules. From non-core activities, the organisation has not only earned money but also suffered losses. Although net interest income accounts for the largest share of income, the share of operating expenses in total revenue has increased significantly, which is an indication of the increased cost for retaining the customers as well as strengthening risk core departments. Equity ratios represent a tiny part of total assets, which explains the principles of banking services organisations. In most of the indicator cases, compared to the performance of the bank on the start of 2017, the downgrade of the results in 2018 is estimated following by the decreased numbers in a different type of income as well as high-cost rates attributable to the bank.

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