Identification of risks of the bank business model

Iryna Krasnova*; Vladislav Lavreniuk B; Andrii Nikitin C

A, B, C Kyiv National Economic University named after Vadym Hetman, 54/1, Prospect Peremogy, Kyiv, 03057, Ukraine

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Abstract
This study highlights the identification of risks and sources of their occurrence depending on the business areas of the bank’s activity. The analysis of financial risks is focused on the description of risks indicators of the business model of a bank, which is the object of the study, and is done by using economic and statistical methods. The study suggests to divide financial risks into significant, specific, corrective. It was noted that the proportions of risks are taken by the bank form a risk landscape. Based on a review of annual reports of the analyzed bank, the sources of potential losses for significant risks were identified. It is discovered that common sources of losses are methodological, organizational and managerial. Based on the analysis of the risk profile, it was determined that the market risk has a significant impact (31.27%), that is untypical and new for domestic banks. The classification of types of market risk according to the European experience is proposed. The structure and analysis of the “heat” risk map of the bank’s business model show that credit risk has the most significant impact in the segment of corporate and private business. It is concluded that under the conditions of acceptance by the bank of significant risks, that is reflected on the amount of the required economic capital, the transition is needed from traditional profit-oriented risk management to risk-oriented one. Such approach will contribute to the reduction of potential financial expenses and increase the bank’s soundness.

Keywords: financial risks, risk landscape, economic capital, business areas, risk profile, risk appetite, market risk.

Introduction

Over the last few decades, the financial services industry has undergone significant changes. Crisis conditions, innovative transformations, rapid development of digital technologies and communications, changes in the regulatory environment helped shape the financial ecosystem. Consequently, banking institutions face the need to adjust business management procedures, in addition to stakeholder’s risks and interests. Building effective, risk-oriented banking provides not only profit-making focus, but also consideration of risks to which the bank is exposed. Financial risk management is the risk optimization plan which aims providing for the banking institution the appropriate remuneration for accepting the risk. In terms of increasing volatility in financial markets the financial risks degree of influence for the banking institutions business results is constantly growing. This requires systematic analysis, the ability to correctly identifying and evaluate the size of available and potential financial risks, which is possible only by understanding their nature and sources. Another important aspect of risk management is to determine relationship and interaction of all risks types and manifestations by

* Corresponding author:

a Full Professor, D.Sc. in Economics, Professor at the Department of Banking and Insurance, e-mail: iryna_krasnova@i.ua, ORCID: 0000-0002-4507-6629

b Ph. D. in Economics, Associate Professor at the Department of Banking and Insurance, e-mail: Lavrenkneu@ukr.net, ORCID: 0000-0002-1069-0028

c Associate Professor, Ph. D. in Economics, Professor at the Department of Banking and Insurance, e-mail: nikitin.andrii@kneu.edu.ua, ORCID: 0000-0001-9184-6471
In the scientific literature there are different approaches to understanding the nature, sources and classification of financial risks of banks. The Basel Committee pays particular attention to the development of methodological recommendations for the management of principal banking risks. Among domestic scientists who conducted research on banking risks and methods of managing them, attention should be paid to the works of L. Prymostka & O. Prymostka (2018 2019).

An important aspect of the study of the range of problems of assessment of business model risks is to determine the causes of bank bankruptcy Thomas et al. Smith & Winakor conducted the first studies of the causes of bankruptcies and tried to find a sign of default in a comparative coefficient analysis. Teply (2009) determined that in the priority majority of cases the reason for bank defaults is exactly the realization of banking risks, in particular credit one. Banks, regardless of their business model, are required to keep risks at a level (risk acceptance) that is within the bank's risk appetite. Acceptance of risks by the bank should not create a threat to the interests of depositors, other creditors, owners, financial stability and should contribute to the effective functioning of the bank's business model. All banks, taking risks at a certain level of risk appetite, seek to achieve competitive advantages through their access to specialized resources, other available market opportunities and management decisions. The result of such actions is the formation of certain business models, which due to various special features of business is reflected in the balance sheets of banks. The correspondence between market opportunities and the bank's business model is the basis for a healthy and sustainable profitability. Finally, Roengpitya, Tarashev, Tsatsaronis & Villegas (2017) determined that the business model influences the value of the bank and is of interest to a wide range of stakeholders.

The concept of “business model” or “strategic group” was used in the work of Hunt (1978). This concept was used mainly in the field of management (Zott & Amit, 2011). Since then, the business model has been understood as the bank’s strategy, which is reflected in financial statements. Research of banking business models can be traced in the early works of Amel & Rhoades (1988) and Mehra (1996). Only recently have quantitative approaches to identification and analysis of banks' business models been systematized. A number of scientists focus on the correlations between banks’ incomes and their profitability. Stiroh & Rumble (2006) and Köhler (2015) studied banking holding companies from the standpoint of their profitability components. The bank's income changes over time due to market drivers, even if the bank’s strategy does not change. In general, most authors agree that a business model is “how companies / banks conduct their business” (Zott & Amit, 2011). When studying business models, authors often distinguish different levels of attention (Brillinger, 2018): 1) from the standpoint of products and services (different business models for different goods and services can be used within one bank/company, especially within “business model innovation” (BMI)); 2) from the standpoint of modularity of the business model (business model of the bank/company consists of several elements, which in most cases include value creation, transfer and estimation) (Clauss, 2017). This approach distinguishes the concept of “template/canvas/sheet of the business model”, which represents nine components of the business model of the bank/company and includes the description of five areas of business: infrastructure, supply, customer relationships and finance (Osterwalder & Pigneur, 2010).

In turn, the issue of identification of bank business models taking into account the risk profile and peculiarities of business is widely covered in numerous publications: Ayadi et al.
Our study continues the ideas of the above researchers and focuses on the quantitative assessment of business model risks, using Deutsche Bank as an example. However, many scientists in studying the special features of business models of banks ignore the issue of business model risk. One of the existing approaches in the scientific literature in respect of bank business model risks involves the approach in which the risk management (RM) system is integrated into the BMI process or a high level of business model risk assessment is ensured (de Reuver et al., 2009; Shi & Manning, 2009). Other authors focus on studying the risks of the entire ecosystem of the business model of the bank/company (Adner, 2017; Brillinger, 2018). Many papers pay particular attention to business model risk management through experiments with the bank's risk management system (Ganguly & Euchner, 2018), suggesting measures to reduce the level of business model risks through ensuring corporate sustainability (Lueg, Pedersen, & Clemmensen, 2015), or through the creation of an integrated risk management system in the structure of the bank’s business model (Girotra & Netessine, 2011).

1. The analysis showed that to date no scientific work has presented a comprehensive approach to assessment of bank business model risks. Practical aspects of quantitative risk assessment are grouped on ISO (2018). Successful application of international standards makes it possible to effectively understand and identify the risk factors of the business model and allows you to manage risks by making appropriate management decisions within the business model. In general, business model risks are “all risks within a business model that may threaten the profitability and sustainability of the business model itself or the goals and value of the bank/company” (Brillinger, 2018). Such definition includes all possible risk events, in particular such as the general failure of functioning of the bank’s business model (Johansson & Malmstrom, 2013), loss of reputation (Markides & Charitou, 2004) and drops in profits (Tanzi, Aruanno, & Suardi, 2018; Roengpitya R., Tarashev N., Tsatsaronis K. & Villegas A. (2017).

Importantly, bank business models are under special supervision of central banks as part of the implementation of risk-based supervision according to the SREP methodology. The issue of risk management of business models of banks is regulated by a number of regulations of the European Central Bank. In particular, the introduction of CRR/CRD IV capital requirements forced European banks to mobilize additional resources for additional capitalization, or to change the business model on the whole (European Central Bank, 2013; European Parliament, 2013).

The European Central Bank pays great attention to risk-oriented supervision of significant supervised entities under the SSM (European Central Bank, 2018). In particular, the regulation of significant supervised entities involves assessment of importance from the standpoint of significant banking risks, in particular: business model risk, credit risk, operational risk, market risk, interest rate risk of the banking book, liquidity risk. Deutsche Bank, chosen for analysis of business model risks, was included by the European Central Bank in the list of significant supervised entities (European Central Bank, 2019).

Based on a variety of scientific studies and in addition to legislation principles it was found that in the terms of the introduction of risk-oriented banking management, some questions as determining the profile and risk tolerance evaluation, identifying sources of potential losses on financial risks in accordance with the business model chosen by the bank require in-depth research.

The purpose of the article is to identify of the sources and the financial risks value in section by business areas of banking which will contribute making the right management decisions in order to provide the stress resistance of a banking institution.
To achieve the purpose of the study, a set of general scientific and special research methods was used: a systematic approach – to substantiate the identified risks generated by the bank's business model and the sources of their occurrence; analysis and synthesis – to assess the overall risk profile of the bank's business model by business areas in the dynamics; economic modeling - to build the “heat” risk map of the bank's business model.

**Results and discussion**

A banking institution assumes the risks, provided that they are justified, understandable in terms of business processes, measurable, containable and consistent with the business strategy of the bank. Along with justified, expected risks, banks face unexpected losses caused by unintentional actions, regulatory changes, uncertainty and volatility of the financial market, economic turbulence. The range of threats and risks, increasing concentration of which can lead the bank to insolvency and bankruptcy, is constantly expanding. That is why it is important to reduce such significant and specific risks, and, where possible, to eliminate them at all.

Any risk is associated with possible financial losses or other negative consequences for the business of a banking institution. Accordingly, we distinguish: significant risks, which include financial risks of the bank’s business model; specific, depending on the business model of the bank, and are not significant (namely, business risk); corrective (model, concentration) (Figure 1).

![Figure 1. Classification of bank business model risks](image)

*Source: Prepared by the authors*

Operational risk is closely related to the specifics of the bank’s business model and therefore occupies a cross-sectional position among other risks. Operational risk is significant in the activities of any bank, but may acquire certain specifics, in some cases, depending on the business model of the bank.

It should be emphasized that in practice some banks ignore business risks in the practice of risk management. Business risk arises in cases where the bank in its activities is less successful than it used to be or than it was expected. One of the main tasks of risk management is to minimize business risk by ensuring the effective functioning of processes (including their automation), thorough study of banking markets and flexible response to changes in these markets.

In view of the specifics of business risk, we believe that it includes strategic and legal risks. In particular, strategic risk should be understood as the risk of losses as a result of errors (faults) made in making decisions that determine the strategy of the bank's activities and development (strategic management). The main causes of strategic risk are: 1) failure to take into account or insufficient consideration of possible dangers associated with strategic management that may pose a threat to the bank's activities; 2) incorrect or insufficient substantiation of the determined promising business areas in which the bank can achieve an advantage over competitors; 3) lack or insufficiency of necessary resources (financial, logistical, human) and organizational measures (management decisions) that must ensure the achievement of strategic goals of the bank. Strategic risk may arise as a result of changes in the competitive landscape or regulatory norms, as well as inefficient positioning of the company in the macroeconomic environment. Strategic risk may arise due to the inability to implement the strategy and/or the inability to take measures to overcome the lack of efficiency. It also implicitly includes elements of non-standard risks, namely refinancing risk and tax risk, including on deferred tax assets for temporary differences.
Legal risk is the risk of loss or imposition of fines / administrative penalties due to legal errors in carrying out business, non-compliance with regulations and concluded agreements, risks associated with the consideration of disputes in courts, violation of regulations by contractors, as well as the terms of the concluded agreements, incorrectly prepared documentation. The materialization of legal risk leads to payment of pecuniary compensations, deterioration of reputation or deterioration of the bank's position in the market.

Business risk is closely connected with the bank's business model and should be managed at the level of the bank's Management Board. Business risk management involves: 1) an iterative process of finding a balance between income and expenses of functioning of the bank's business model; 2) a comprehensive system of measures to determine trends in the development of the bank's business, taking into account the impact of other banking risks.

In Ukrainian practice, in particular the National Bank of Ukraine, for the purposes of assessment of business model risks, proposes to focus on six types of risks: 1) profitability risk; 2) credit risk; 3) liquidity risk; 4) concentration risk; 5) the risk of lending to related parties; 6) money laundering risk (Rashkovan & Pokidin, 2016). The first three types of risks derive directly from the Basel Principles. Profitability risk partially quantifies market risk under the Basel Principles. Operational risk is not included in the list, as the authors could not find the appropriate quantitative characteristic for it, but it was determined that this risk is significant. The other three types of risks relate to problems specific to the Ukrainian market and the markets of other developing countries, namely high concentration, lending to related parties and money laundering (Rashkovan & Pokidin, 2016).

The readiness of a banking institution to accept risks may differ from risk aversion to full openness depending on the chosen strategic areas of running business. The set of relevant conditions of the bank can be described as the risk landscape. Extreme conditions, when no risks are accepted, or vice versa, all risks are accepted do not occur in practice. Every bank is looking for its “golden mean”. Therefore, it can individually change the proportions of risks taken in accordance with the risk appetite, which is interpreted as the total size and types of risks that the bank is ready to accept in accordance with the current business model and strategic goals (Prymostka & Prymostka, 2019).

The combination of business operations leads to different risks taken by the relevant business units of the bank. The key risks inherent in the respective business models are measured through the overall economic capital indicator, which reflects the risk profile of each business unit and takes into account cross risks at the bank level.

The Basel Committee introduced the concept of economic capital to assess the overall level of riskiness of banking, which takes into account the specifics of the risk landscape of a particular bank. In other words, it is “capital at risk” (CaR) or “risk capital” necessary and sufficient to cover possible financial losses at a given level of risk appetite (Prymostka, Krasnova, Lavrenjuk & etc., 2018). The actual size of aggregate risk accepted by the bank by covering with economic capital (RWA) determines the risk profile of the bank.

For clarity, let’s consider the risks of the business model of Deutsche Bank, the choice of which is due to its significant presence in international financial markets (Figure 2). Working under conditions of high volatility of financial markets and economic uncertainty, the banks' risk landscape is very changeable and requires a reassessment of market positions.

![Figure 2. Deutsche Bank risk profile for 2018](Source: Calculated by authors according to the data of Deutsche Bank Annual Report 2018 (2019))
The probability of unexpected losses is most characteristic of credit, market, operational and business risks associated with the turbulence of economic development of Europe, competition and volatility of financial markets. Such ratio quite logically corresponds to the strategy of Deutsche Bank, which positions itself as a relevant participant of the global financial market. The ratio between these risks varies depending on:

- the business model of the banking institution and strategic tasks set by the management and stakeholders;
- external conditions: the state of the financial market, macroeconomic environment, political factors, etc.

Under the conditions of economic turbulence, the most significant impact on the risk profile of the bank measured by economic capital is produced by external conditions. In particular, the improvement of the economic situation in the EU and the reduction of volatility in the financial markets had a positive influence on the reduction of the need of Deutsche Bank in economic capital in 2018 by 1.02 billion Euros or 3.76% as compared to the same period in 2017 (Table 1). This is due to the improvement of the quality of the loan portfolio and market risk reduction. The reduction of economic capital by business risk in 2018 was positively influenced by the improvement of market prospects and the growing ability of the bank to generate profit by business areas.

### Table 1. Dynamics of the economic capital of Deutsche Bank by risks

| Risk            | Period       | Changes          | %  |
|-----------------|--------------|------------------|----|
|                 | 2018         | 2017             | Euro bln. |    |
| Credit risk     | 10.61        | 10.779           | -0.159 | -1.476% |
| Market risk     | 10.341       | 10.428           | -0.087 | -0.834% |
| Operational risk| 7.359        | 7.329            | 0.030  | 0.409%  |
| Business risk   | 4.758        | 5.677            | -0.918 | -16.171% |
| Diversification effect | -6.960 | -7.074            | 0.114  | -1.612% |
| Total economic capital | 26.108 | 27.129           | -1.020 | -3.760% |

*Source: Calculated by authors according to the data of Deutsche Bank Annual Report 2018 (2019).*

The bank’s ability to protect itself from external risks is limited, and their impact may have unpredictable consequences. The size of economic capital depends on the probable losses of banking activities in accordance with the bank’s development strategy. That is why it is important to identify the sources (certain conditions and circumstances) of potential losses on financial risks (Figure 3). This is an integral element of the process of business planning of the bank’s strategy, monitoring of sensitivity to financial risks and limiting risk appetite within the capital and strategic goals.

### Figure 3. Sources of potential losses for significant risks of the bank’s business model

*Source: Calculated by authors*
Banking business is characterized by diversity, since each business area has certain specific features, including a certain level of risk or probability of financial loss. In view of this, it is expedient to carry out identification and distribution of financial risks by business areas of the bank. We distinguish the following business areas by types of customers/markets:
- Corporate & Investment Bank (hereinafter “CIB”) – sale of banking products (services) to corporate clients, transactions with securities on its own behalf and using own funds, underwriting, etc.;
- Private & Commercial Bank (hereinafter “PCB”) - creation and sale of banking products and services for certain categories of individual customers of the bank, services for individuals;
- Asset Management (hereinafter “AM”), or work in the financial markets – service area, this is trust services of fiduciary management and disposal of funds and securities of bank customers in their interests, their securities and other assets circulating in the financial market;
- Corporate & Other (hereinafter “C&O”) - internal corporate business and branches, which includes servicing corporate relations between the bank’s units, branches and outlets, in accordance with defined powers; transfer agreements on purchase and sale of resources between separate units of the bank; servicing shareholders.

The diversity of business areas requires identification, assessment, measurement, aggregation and management of risks in accordance with the specifics of a particular area, including through capital allocation. Each of the banking areas has its own risk appetite. The main purpose of risk appetite assessment is to strengthen financial stability by encouraging a systematic approach to management of risks, capital and reputation portfolio. The distribution of the amount of economic capital coverage (RWA) of a particular type of risk by business areas of the bank makes is possible to assess the total risk appetite (Table 2).

Table 2. RWA coverage distribution by business areas of Deutsche Bank by risk types in 2018 (%)

| Risks               | Corporate & Investment Bank | Private & Commercial Bank | Asset Management | Corporate & Other | Total     |
|---------------------|------------------------------|---------------------------|------------------|-------------------|-----------|
| Credit risk         | 24.28                        | 13.55                     | 0.20             | 2.61              | 40.64     |
| Market risk         | 18.23                        | 4.31                      | 1.42             | 15.66             | 39.61     |
| Operational risk    | 23.33                        | 3.32                      | 1.54             | 0.00              | 28.19     |
| Business risk       | 13.49                        | 0.11                      | 0.00             | 4.63              | 18.22     |
| Total               | 58.76                        | 17.71                     | 2.27             | 21.27             | 100.00    |
| Diversification effect | -20.57                     | -3.57                     | -0.88            | -1.62             | -26.66   |

Risk level scale 100% 0%

Source: Calculated by authors according to the data of Deutsche Bank Annual Report 2018 (2019).

The most significant business area that forms the main business model of Deutsche Bank is Corporate & Investment Bank (CIB), the risk characteristic of which is dominated by trading activities in respect of market initiation, structuring and creation, which generates all major risks. Credit risk is widely distributed among business units, but is most noticeable in the markets of global credit trade, deposits, trade finance and debt capital. A significant share of operational risk in the CIB risk profile reflects the high level of losses in the industry combined with internal losses. Market risk arises in the segment of trade and market activities of the bank. Business risk reflects the risk of profit volatility and is associated with a moderate improvement in projected operating income. It should be noted that in 2018 Deutsche Bank announced a reorientation of strategic and management approaches to carrying out business. In particular, management becomes focused on
significant increasing of profits for shareholders, improving the efficiency of use of assets in accordance with customer needs and risk appetite. The main objective is controlled costs and cost reduction. Thus, Deutsche Bank changes the traditional business model for a business model focused on modern transactional banking (change of profit-oriented management model for operation-oriented) and redistribution of exposures in the capital market.

The risk profile of Private & Commercial Bank (PCB) includes credit risk from retail sales, lending to small and medium-sized businesses, as well as non-trading investment risk, interest rate risk, including risk resulting from modeling customer deposits and credit spread risk. The absence of market risk in the retail portfolio is explained by the inexpediency of bringing these risks to the financial market in terms of business objectives. The costs of covering the bank’s retail portfolio with derivatives will be higher than the profits. The risks of retail business of a banking institution (namely credit one) are traditionally covered by forming a system of limits for customers.

In the area of Asset Management (AM), the bank, as a fiduciary asset manager, invests money on behalf of customers in the financial market. Thus, the risk is primarily fiduciary in nature and, therefore, is determined by operating activities. However, there is a non-commercial market risk associated with guarantee products and co-investment transactions.

Corporate & Other (C&O) business area includes mainly non-commercial market risk for structural currency risk, pension risk and equity compensation risk.

Obviously, the share of credit risk will always be high and inherent in a banking institution. Special features of credit risk in some cases also involve the use of financial market instruments. Financial assets covered by credit derivatives are credits carried at depreciated cost and off-balance sheet items, namely guarantees and liabilities. For most financial assets, the amount of credit risk coverage is secured, since lending involves the possibility of use of simple risk assessment methods that do not require significant resource costs. Non-typical agreements, mortgage loans or portfolios to which collateral measures cannot be applied can be covered by credit default swaps (CDS).

According to a set of criteria, financial assets (instruments) that bear market risk should be distinguished in terms of trading and bank (balance) book Farnè, M., Vouldis, A. (2017). The attribution criteria are the nature, purpose of acquisition and purpose of holding of the asset. Market risk is inherent, to a greater extent, in instruments that are in the trading portfolio Lautenschläger, S. (2017). The trading book includes positions created either for the purpose of obtaining trading (speculative) gain, or for hedging risk under such transactions (Prymostka & Prymostka, 2018). By trading income we understand income due to changes in the price of financial instruments or market factors in the short term.

Assets and liabilities that are not included in the trading book are included in the banking book. As a result of differences in the composition of trading and banking book items, the accepted market risks also differ significantly. The items of the banking book are the consequence of ordinary banking activities, namely attraction of deposits and granting loans, and other transactions with assets and liabilities.

Adapting the recommendations of the Basel Committee to its own business model Deutsche Bank identifies certain types of market risk (Figure 4).

![Figure 4. Types of market risk of the banking institution](Source: Prepared by the authors)
The identified risks function differently and are manifested either through the trading book or through the banking book. For the banking book, the most significant are currency and interest rate risks that arise due to differences in currencies and maturities of liabilities raised and assets created. Market risks of the banking book are imbalances arising as a result of normal banking activities. The composition of market risks in the trading book may be much broader and depends on the transactions carried out by the bank in the financial markets. Some of them are initiated by the bank, but most of them are made by the bank at the request of customers.

After the risks are identified, the question arises of assessing and taking into account their impact. According to the new BIS methodology, the magnitude of market risk is a combination of three components: default risk, residual risk, sensitivity risk. The latter consists of delta risk, vega risk and yield curve risk (for financial instruments with the nature of options). Unusual for domestic practice is separate identification of pension risk among the market risks. Since the Western pension system is mainly funded, and private pension funds are active participants in the financial market, banking institutions must take into account such peculiarities. In the USA and Europe, defined benefit pension plans are the most underfunded and therefore constitute a significant source of risk for a bank, affecting the corporation's assessment and credit rating, and may have an impact on the banking institution's business model and strategic goals. Therefore, a significant share of economic capital coverage of pension risk (25.23%) is an important factor in market risk management.

The practice of identification of pension risk as part of the market risk may be interesting for application in the present-day developments of the banking market of Ukraine, where the introduction of a funded pension system takes place. If its introduction is built in such a way that banks will keep on their balance sheets the assets of private pension funds (PPFs), this will certainly lead to a risk that, according to the European example, may be identified as a separate type.

In general, market risk is the measure of the extent to which a bank is ready to scale its business and be an active participant in financial markets. Instead, credit risk is inherent in any banking institution and its size depends on the conservatism of the business model, provided there is an adequate economic environment and business landscape. In the event of a crisis of political, economic or man-made nature, credit risk increases regardless of the bank’s expectations.

**Conclusions**

The business model determines the types and concentration of risks inherent in banking. Among these risks we distinguish significant, specific and corrective. The sources of financial risks by the field of formation were identified, the risk profile and risk appetite of the European bank were assessed by the method of coverage with the bank's economic capital. The main types of risks that require additional coverage with economic capital are credit and market ones. It was noted that there is a transition from traditional profit-oriented risk management as part of the overall bank management process to risk-oriented management in which each management decision is assessed from the standpoint of existing and potential risks. This new approach is aimed at ensuring the resilience of the banking institution, increasing transparency and manageability of risk management. For this purpose, the paper analyzes the key areas of banking business and the risks inherent in each of the areas through the example of the use of the business model of Deutsche Bank. The basic business area that determines the business model of the studied European bank is the segment of corporate and investment banking (CIB), which includes trading activities with regard to market initiation, structuring and creation, which determines the risk profile of the bank.
A review of the risk management practice of the Deutsche Bank banking group revealed certain specific features for providing proposals for implementation in the conditions of the banking market of Ukraine. The lack of a properly functioning financial market does not allow domestic banks to manage market risk in full, using the means of derivative financial instruments. Model risk is not distinguished in domestic practice at all. This situation is caused by the lack of the need for banking organizations to model risks. However, the world’s globalization trends towards openness of markets and digitalization of banking products suggest the need to apply models of balanced regulation of both credit and market risks. For a banking institution operating in Ukraine, the use of derivative financial instruments will make it possible to scale its business and offer consumers a wider and cheaper choice of banking products. Due to a defined process of identification and management of risks inherent in business models, managers will be able to make informed and reasoned management decisions.

References

Bank for International Settlements (BIS). (2019). Consultative Document «Consolidated Basel Framework». Retrieved from https://www.bis.org/bcbs/publ/d462.pdf.

Prymostka, L. & Prymostka, O. (2018). Ukrainian banking system efficiency after double reducing of the number of bank institutions, Banks and Bank Systems. Vol 13. pp. 51-60 http://dx.doi.org/10.21511/bbs.13(4).2018.05

Prymostka, L.O., Prymostka, O. O. (2019). Risk-oriented management in the bank, Financial and credit activity: problems of theory and practice. 2(29). pp. 2-6 https://doi.org/10.18371/fcapt.v2i29.172224

Thomas, L.C., Edelman, D.B., Crook, J.N. (2002). Credit Scoring & Its Applications. Second Edition. Pennsylvania: Society for Industrial and Applied Mathematics. https://doi.org/10.1137/1.9781611974560

Smith, R. F., Winakor, A. H. (1935). Changes in the Financial Structure of Unsuccessful Corporations. University of Illinois: Bureau of Business Research.

Teply, P. (2009). Three essays on risk management and financial stability. Institute of Economic Studies. Retrieved from https://ies.fsv.cuni.cz/default/file/download/id/11434

Roengpitaya R., Tarashev N., Tsatsaronis K. & Villegas A. (2017). Bank Business Models: Popularity and Performance. BIS Working Paper. No. 682. Retrieved from https://www.bis.org/publ/work682.htm

Hunt, M. S. (1978). Competition in the major home appliance industry, 1960-1970. Harvard University, Unpublished Phd. Thesis.

Zott, C., Amit, R. (2011). “The business model: Recent developments, and future research”, Journal of Management. 37(4). pp. 1019-1042. http://dx.doi.org/10.2139/ssrn.1674384

Amel, D. F., Rhoades, S. A. (1988). Strategic Groups in Banking. Review of Economics and Statistics, 70 (4). pp. 685–689. https://mpra.ub.uni-muenchen.de/id/eprint/326

Mehra, A. (1996). Resource and Market Based Determinants of Performance in the U.S. Banking Industry, Strategic Management Journal. 17(4). pp. 307-322. https://doi.org/10.1002/(SICI)1097-0266(199604)17:4<307::AID-SMJ820>3.0.CO;2-2

Stroh, K. J., Rumble, A. (2006). “The dark side of diversification: the case of US financial holding companies”, Journal of Banking and Finance 30 (8), pp. 2131–2161. Retrieved from https://EconPapers.repec.org/RePEc:eee:jbfina:v:30:y:2006:i:8:p:2131-2161

Köhler, M. (2015). “Which banks are more risky? The impact of business models on bank stability”. Journal of Financial Stability. 16. pp.
Brillinger, A.S. (2018). Mapping business model risk factors International. Journal of Innovation Management, 22 (5), 1840005. https://doi.org/10.1142/S1363919618400054
Clauss, T. (2017). Measuring business model innovation: Conceptualization, scale development, and proof of performance. R & D Management, 47 (3), pp. 385-403. https://doi.org/10.101111/radm.12186
Osterwalder A., Pigneur, Y. (2010). Business model generation: A handbook for visionaries, game changers, and challengers. Hoboken, New Jersey: John Wiley & Sons.
Ayadi, R., de Groen, D., Rey, H., Sassi, I., Mathlouthi, W., Aurby, O. (2016). Banking Business Models Monitor 2015. Center for European Policy Studies, Brussels. Retrieved from https://www.ceps.eu/cepspublications/banking-businessmodels-monitor-2015-europe.
Hryckiewicz, A., Kozlowski, L. (2017). Banking business models and the nature of financial crisis. Journal of International Money and Finance, Volume 71. pp. 1-24. https://doi.org/10.1016/j.jimonfin.2016.10.008
Soares, J. (2017). Battle of the Banks. The Fight for Profitable Business Models in Europe. Bain Brief, Bain & Company. Retrieved from https://www.bain.com/contentassets/6517c65f834c4a048e2ea45d276014b8/bain_brief_battle_of_the_banks.pdf
Farnè, M., Vouldis, A. (2017). Business models of the banks in the Euro area. ECB WP 2070, May 2017. Retrieved from https://www.ecb.europa.eu/pub/pdf/scpwps/ecb.wp2070.en.pdf
Lautenschläger, S. (2017). European banks – The quest for the best business model. Retrieved from https://www.banking.supervision.europa.eu/press/speeches/date/2017/html/ssm.sp171107.en.html
Grossmann, D., Scholz, P. (2017). Bank Regulation: One Size Does Not Fit All. Journal of Applied Finance & Banking. 79(5). pp. 1-27. Retrieved from https://EconPapers.repec.org/RePEc:spt:apfiaba:v:y:2017:i:5:f:7_5_1
Japparova, I., Rupeika-Apoga, R. (2017). Banking Business Models of the Digital Future: The Case of Latvia. European Research Studies Journal XX (3A), pp. 846-860. Retrieved from https://www.researchgate.net/publication/319458805_Banking_business_models_of_the_digital_future_The_case_of_Latvia
Kappeler, S., Bouwman, H., Haaker, T. (2009). Mobile business models: Organizational and financial design issues that matter. Electronic Markets, 19 (1), pp. 3-13. http://dx.doi.org/10.10107/s12525-009-0004-4
Shi, Y., Manning, T. (2009). Understanding business models and business model risks, Journal of Private Equity, 12 (2), pp. 49-59. http://dx.doi.org/10.3905/JPE.2009.12.2.049
Adner, R. (2017). Ecosystem as structure: An actionable construct for strategy. Journal of Management, 43 (1), 39-58. https://doi.org/10.1177/0149206316678451
Ganguly, A., Euchner, J. (2018). Conducting business experiments. Research-Technology Management, 61 (2), pp. 27-36. http://dx.doi.org/10.1080/08956308.2018.1421381
Lueg, R., Pedersen, M.M., Clemmensen, S.N. (2015). The role of corporate sustainability in a low-cost business model: A case study in the Scandinavian fashion industry. Business Strategy and the Environment, 24 (5), pp. 344-359. https://doi.org/10.1002/bse.1825
Girotra, K., Netessine, S. (2011). How to build risk into your business model? Smart companies design their innovations around managing risks. Harvard Business Review, 89 (5). pp. 100-105. Retrieved from https://hbr.org/2011/05/how-to-build-risk-into-your-business-model
Johansson, J.M., Malmstrom, M. (2013). The business model transparency paradox in innovative growth ventures: Trade-offs
between competitive advantages and agency costs. Entrepreneurship Research Journal. 3 (2). pp. 238-263. https://doi.org/10.1515/erj-2012-0011

Markides, C.C., Charitou, C. (2004). Competing with dual business models: A contingency approach. The Academy of Management Executive. 18 (3). pp. 22-36. http://dx.doi.org/10.5465/AME.2004.14776

Tanzi, P.M., Aruanno, E., Suardi, M. (2018). A European banking business models analysis: The investment services case. Journal of Financial Regulation and Compliance. 26 (1). pp. 35-57. https://doi.org/10.1108/JFRC-04-2016-0028

Roengpitya, R., Tarashev, N., Tsatsaronis, K. & Villegas, A. (2017). Bank Business Models: Popularity and Performance. BIS Working Paper. No. 682. Retrieved from https://www.bis.org/publ/work682.htm

European Central Bank. (2013). Council Regulation (EU) No 1024/2013 of 15 October 2013 conferring specific tasks on the European Central Bank concerning policies relating to the prudential supervision of credit institutions OJ L 287. 63–89. Retrieved from http://data.europa.eu/eli/reg/2013/1024/oj

European Parliament. (2013). Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012 Text with EEA relevance OJ L 176. 1–337. Retrieved from http://data.europa.eu/eli/reg/2013/575/oj

European Parliament. (2013). Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC Text with EEA relevance OJ L 176, p. 338–436. Retrieved from http://data.europa.eu/eli/dir/2013/36/oj

European Central Bank. (2018). European banking supervision: functioning of the SSM and supervisory approach SSM Supervisory Manual. ECB. Retrieved from https://www.bankingsupervision.europa.eu/ecb/pub/pdf/ssm.supervisorymanual201803.en.pdf

European Central Bank. (2019). List of supervised entities. Retrieved from https://www.bankingsupervision.europa.eu/ecb/pub/pdf/ssm.listofsupervisedentities20190301.en.pdf

Rashkovan, V., Pokidin, D. (2016). Cluster analysis of business models of Ukrainian banks: application of Kohonen neural networks. Bulletin of the National Bank of Ukraine. 238. pp. 13-40. https://doi.org/10.26531/vnbu2016.238.013

Prymostka, L. O., Krasnova, I. V., Lavrenjuk, V. V. & etc. (2018). Bank risk management (535 p.). Kiev: KNEU. Retrieved from https://goo.gl/k5G2RY [In Ukrainian].

Deutsche Bank AG. (2019). Annual Report 2018. Retrieved from https://www.db.com/ir/en/download/Deutsche_Bank_Annual_Report_2018.pdf

Farnè, M., Vouldis, A. (2017). Business models of the banks in the Euro area. ECB WP 2070. Retrieved from https://www.ecb.europa.eu/pub/pdf/scwp/2070.en.pdf

Lautenschläger, S. (2017). European banks – The quest for the best business model. Retrieved from https://www.bankingsupervision.europa.eu/press/speeches/date/2017/html/ssm.sp171107.en.html.