









“Development of business architecture of the banking sector based on public-private partnership”

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DEVELOPMENT OF BUSINESS ARCHITECTURE OF THE BANKING SECTOR BASED ON PUBLIC-PRIVATE PARTNERSHIP

Abstract

The purpose of the paper is to identify promising areas of business architecture of the banking sector of Ukraine's economy based on public-private partnerships. Business architecture integrates risks due to the predominance in a certain period of development of the banking sector of different business models. Its development should involve the subordination of private interests of the banking business to national and public needs to achieve economic growth. Such a public-private partnership should become an institutional tool for the formation and functioning of a business architecture, based on socially responsible banking.

Development directions of business architecture of the Ukrainian banking sector based on public-private partnership are determined by the results of correlation and regression assessment of the impact of business architecture on economic growth in 2015–2020.

The generalization of the effects on gross investment and gross consumption allows identifying the following areas for targeted changes in business architecture of the banking sector in Ukraine's economy: 1) reducing the lending activity of banks with retail, corporate, and universal business models; 2) incitement the lending activity of banks with a corporate business model with retail financing and a business model of limited credit intermediation.

The paper substantiates the feasibility of transition to mesoprudential banking regulation and supervision. The main priority of this approach is to reduce systemic risks, which is determined by the propensity for similar risks within groups of financial institutions with the same business models.

Keywords

bank, business model, clustering, correlation analysis,
regression analysis, mesoprudential banking regulation

JEL Classification

G20, O16, G21

INTRODUCTION

The formation of individual strategies for the development and selection of business models of individual banks has important macroeconomic consequences, which determine the importance of joint coordination of the development of the banking sector by the central bank and bank management. The choice of banks determines their business model taking into account the principles of public-private partnership, presupposes sound mathematical calculations based on the best financial methods and economic-mathematical models.

Banks' choice of their business model determines the nature and level of their involvement in financing investments in the economy and their contribution to the formation of aggregate consumption. In Ukraine, only 3.3% of capital investments were financed by loans from Ukrainian banks and other loans in the pre-war period. At the same time, investments in fixed and working capital in the country since

2016 have had a pronounced downward trend, having halved in this period in % of GDP – from 21.7% in 2016 to 10.1% in 2021. At the same time, the level of investment in Ukraine remains almost three times lower than in other Central and Eastern European developing countries (25-30% of GDP). The level of bank lending to Ukraine's economy (on working loans) has fallen from 80% to 15% of GDP over the past 10 years. This is the lowest figure in the world among emerging markets (for comparison, Poland – 59%, Georgia – 80% of GDP). At the same time, despite the increase in balances on deposit accounts in the banking system of Ukraine in 2020–2021, their allocation for lending purposes decreased to less than 50% (which is historically the lowest level). The lack of sufficient incentives for banks to increase business risks and increase lending is evidenced by the growing share of risk-free assets in the structure of banks' assets (increased to about 40%) and return on operating assets up to 5.2%.

The general decline in investment and credit activity in the financial industry encourages countries around the world to look for ways to ensure the stable operation of the financial and credit mechanism to ensure economic growth. An important institutional component of such mechanisms in modern conditions is the business architecture of the banking sector. It determines the overall coherence of its functioning as a holistic system in which individual banks with different models of banking and different development strategies operate as a unity focused on common goals of the public-private partnership in the banking system – ensuring economic growth in the country.

1. LITERATURE REVIEW

There is still no established understanding of the concept “business architecture” at the level of economic sectors in the scientific literature. The approach to its interpretation used in the paper is the author's. It needs some justification and explanation, although it is based on the results of other researchers in the field of business modeling and management of the banking sector.

Researches on the business architecture of the banking sector have common origins with the modern understanding of the structure and organization of business in the form of “enterprise architecture”. It is a holistic vision of an object of management, which provides a business with a general view of the logic of its operation and the interconnectedness of the parts as a whole (Zynder, 2008). Thus, in particular, in the internal regulations of the IBM research laboratory, this concept is defined as “... logically related form of structures” (Business Architecture Guild, 2020).

There are three approaches to interpreting the concept of business architecture:

- 1) based on the paradigm of “DSR, Design Science Research”, which provides its interpretation from the standpoint of business in-

formatics, namely as a component of information systems design, based on the creation of innovative artifacts that can be used repeatedly to solve relevant problems. In particular, such an approach is implemented in the works of Danilin and Slyusarenko (2005), Zaremsky (2017), Kalyanov (2006), Peffers et al. (2007), and Hevner and Chatterjee (2010). This approach is characterized by the use of regulatory models of business architecture;

- 2) based on the paradigm of strategic management, which provides for its interpretation in terms of creating optimal organizational conditions for achieving strategic management goals, which is reflected in the development of mostly positive models. It is less developed than the previous one and is presented in a limited number of publications (Zinder, 2008; Kudryavtsev & Arzumanyan, 2017); and
- 3) an integrated approach based on a combination of the above two (Frank, 2006).

Given that ensuring economic growth is an important strategic task of state economic policy, in the studies of the development of the banking sector's business architecture based on public-private partnership, it is advisable to use a strategic management paradigm.

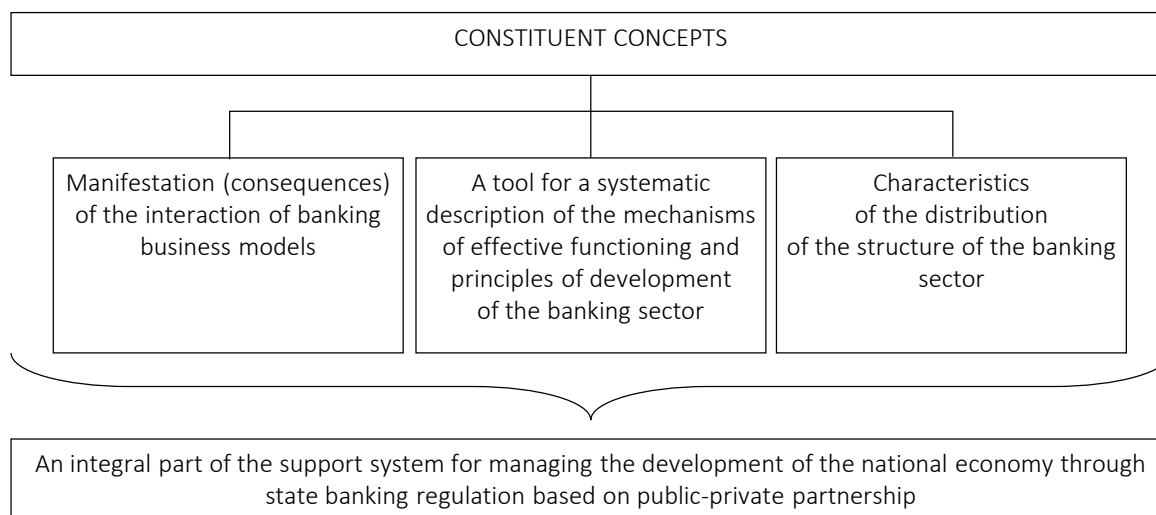


Figure 1. The concept of business architecture of the banking sector of the economy

In the economic literature, business architecture is studied mainly at the microeconomic level, where this concept is traditionally interpreted as a comprehensive model of any economic entity (including banks). It provides an insight into its activities, the holistic multidimensional business views of the organization, their relationship to strategies, products, policies, initiatives, and stakeholders. In this sense, business architecture is considered as a certain “model of business activity” (Drogobyckaya, 2014). This points to the direct connection between the concepts of “business architecture” and “business model”, and also suggests that the formation of business architecture is a consequence of business modeling and a manifestation of its impact on the structure and efficiency of the banking sector as a whole.

Analysis of literature sources (Danilin, 2005; Frank, 2006; Kalyanov, 2006; Peffer et al., 2007; Zinder, 2008; Hevner & Chatterjee, 2010; Drogobyckaya, 2014; Zaremsky, 2017; Kudryavtsev & Arzumanyan, 2017) allows identifying three areas of study of the business architecture of the banking sector of the economy (Figure 1).

The combination of these areas is a necessary requirement for the systematic support of strategic management of economic growth of the national economy based on public-private partnership (PPP).

It should be noted that public-private partnerships are mostly considered rather narrow today.

As a rule, it is reduced to a system of relations between public and private partners, in the implementation of which the resources of both parties are combined for mutually beneficial cooperation on a long-term basis to attract investment in certain objects with appropriate distribution of risks, responsibilities and rewards (Hrytsenko, 2015). When researching public-private partnership, it is advisable to take into account not only the investment opportunities of this instrument to stimulate the development of socially significant spheres of society, the implementation of structural projects, but also the organizational and managerial opportunities to manage the business environment to minimize various public risks. and not just to achieve profitability. Public-private partnership is an institutional tool for the formation and functioning of socially responsible business.

Therefore, business modeling should allow implementing a systematic approach to banking management not only at the micro-level, providing opportunities for rapid response to changes in external and internal environments, adjusting decisions, and improving the efficiency of banking, but also at the macro level – as a public-private partnership, which is implemented by reconciling business interests of banks with public needs in the process of forming business architecture of the banking sector.

This approach is the basis for creating a new type of banking supervision and regulation, mesopru-

dential, the justification of which was first carried out by scientists at the Banking University (Rudevska, 2020, 2021).

Mesoprudential approach to the regulation and supervision in the financial sector involves the detection and prevention of violations in the provision of financial services by banking sectors, which are associated with threats to the collective behavior of banks in choosing and implementing their own business model and development strategy. This collective behavior is manifested in the formation of the business architecture of the banking sector on the basis of PPP.

In this context, evaluation is a matter of improving the PPP system.

It is common practice to assess the cost-effectiveness of individual PPP projects by public authorities at the stage of their selection and preparation. It includes three areas (Barkalov et al., 2015):

- comparison of the profitability of the project with and without the involvement of a private partner;
- identification of types of risks for the implementation of PPP projects, their assessment, and determination of the form of risk management; and
- detailed economic justification of PPP.

It should be noted that the effectiveness of PPP projects is a key criterion for the private partner, especially given that approaches to evaluating PPP projects differ significantly from traditional approaches, as it is necessary to evaluate private sector investment based on financial efficiency analysis and, of course, take into account the interests of the state based on the analysis of costs and benefits in the public sector (Novikova, 2009).

Today, there is no single methodology that could comprehensively assess the effectiveness of PPP projects for both the state and the private partner. The simplest indicators used to approximate and quickly assess the attractiveness of projects are profits and costs, as well as methods for analyzing the break-even point of the

project and its payback period (payback period). However, as rightly pointed out by Andreeva (2013), these indicators have certain shortcomings, which are the assumption of the equal importance of income and expenses related to different periods of time.

However, there are other shortcomings in methods for evaluating PPP effectiveness. Such shortcomings also include the need to supplement the efficiency criteria with additional tangible and intangible benefits of private partners in order to adequately assess the private partner's interest not only in concluding an agreement, but also in the successful implementation and completion of the project (Mazharova et al., 2018). Attempts to solve these problems are presented by Kuznetsova and Pohorelenko (2021) who summarize investment, economic, financial, social and other aspects of public-private partnership in a single methodology, which reflects the assessment of all alternative income and expenditure

In world practice, methods based on the concept of the optimal ratio of project cost and quality of its implementation – VFM (Value for Money) are widely used: Cost-Benefit Analysis (CBA) – cost-benefit analysis (Germany), Public Sector Comparator (PSC) – a comparative analysis of public sector costs (Japan, Ireland, the Netherlands), and competitive bidding (France) (Kruhlov, 2018; Kruhlov & Myroshnychenko, 2017).

Taking into account the specifics of PPP projects as a special system of business-government relations, their analysis is conducted in the following areas (Makarov, 2014):

- analysis of the budget efficiency of PPP using appropriate coefficients;
- analysis of financial indicators of PPP when considering it from the standpoint of the investment project and the implementation of current activities;
- analysis of the social efficiency of the project, which considers PPP from the standpoint of the volume and quality of public goods produced and the accompanying externalities (budgetary and socio-economic efficiency).

At the same time, the factors, the use of which allows achieving the maximum economic effect from the implementation of PPP, are “balanced policy of economic and social institutional structure” and “optimality in risk management” (Gabdulina, 2012).

It is expedient to change the approach to assessing public-private partnerships to take better account of tangible and intangible benefits of not only public and private partners, but also to take into account macroeconomic consequences, risks, and potential losses, incurred by society as a whole in the event of abandonment of public-private partnership. In the case of a study of the business architecture of the banking sector, such risks and negative consequences are associated with the loss of financial stability and restraint of economic growth. Financial stability contributes to economic growth, which, along with price stability and employment, is the main process of the national economy on the path to macroeconomic stability (Kantsir, 2016).

Among scholars, it is common to identify many factors that influence the formation of business architecture and its subsequent changes, as well as changes in banks' business models. Thus, Piddubna (2018) singled out the following list of factors that influence the change of business models of banks: the attractiveness of servicing the corporate sector of the economy; low level of household income, bank assets are growing faster than deposits, there is a “funding gap”; increase in the share of overdue credit debt; development and implementation of innovative products that are not always profitable and competitive; growth of investment activity of banks.

Rudevska (2021) divides all factors of business architecture formation into two groups: general – factors influencing the formation of the business architecture of the banking sector in general, and specific – factors influencing the formation of business architecture related to individual business models of banks. This division is important for studying the impact of the banking sector's business architecture on economic growth and financial stability. However, the composition of these groups of factors requires additional research and justification, in particular, by correlation and regression analysis of economic growth

and performance of the banking sector as a whole and individual group of banks with similar business models.

Therefore, important tasks for research are to identify those business models of banks, the predominance of which in the structure of the banking sector stimulates the acceleration of economic growth. This is the basis for substantiating promising directions for developing business architecture of the banking sector and developing recommendations for improving public banking regulation and supervision on the basis of public-private partnership and social responsibility of banks.

The aim of the paper is to identify promising directions for the development of business architecture of the banking sector of Ukraine's economy based on public-private partnerships.

The basic assumptions on which the assessment of the impact of changes in the business architecture of the banking sector on economic growth and the identification of directions for the development of business architecture are carried out are as follows:

- 4) business architecture of the banking sector of the economy is characterized by the distribution of banks according to the chosen type of business model, and its change – by the structural changes in this distribution;
- 5) each group of banks in the banking sector affects the country's economy and its development in different ways of end-use of GDP to different degrees, as the bank's business model reflects its predominant focus on change or consumption or investment, as well as exports and imports;
- 6) for each group of banks there is a set of indicators of banking activity, in the formation of the aggregate indicator (by the banking sector of the economy) of which these banks are the main ones and, accordingly, play a greater role, which is expressed in higher than other groups of banks, indicators of specific weight;
- 7) a change in the business architecture of the banking sector (which is expressed both in

its elements and in the relationships between them) leads to a change in the structure of banking performance in terms of individual groups of banks by type of a business model.

2. METHODS

Business models of banks, the predominance of which in the structure of the banking sector stimulates the acceleration of economic growth, are determined by the results of correlation and regression assessment of the impact of business architecture of the banking sector of Ukraine on economic growth. The information base was the statistical data of the National Bank of Ukraine for 2015–2020. Business architecture of the banking sector was considered as a result of the clustering of banks by the type of business models of the banking activity based on the methodological approach described in Vovchak et al. (2019). Clustering of banks to study business architecture of Ukraine's banking sector provided for their division into five groups according to the chosen corporate business model, namely retail, corporate, universal, corporate with retail financing, and the model of limited credit intermediation.

As already mentioned, in modern conditions, PPP in the banking sector is not limited to the issue of project financing, but also involves a review of approaches to internal corporate governance of banks. Banking management should be socially responsible and based on the ability to subordinate private interests to the needs of minimizing public risks and ensuring public interests and needs. At the national level, these interests are reflected in the main goal of state economic policy – ensuring economic growth. Therefore, for correlation-regression analysis, traditional indicators for measuring the economic growth of the national economy were chosen as an indicator of the result affected by the change in the banking sector's business architecture.

The impact of changes in the business architecture of the banking sector on economic growth is measured by the absolute value of one percent of real GDP growth, which allows us to estimate the acceleration (or deceleration) of real GDP growth over the year. The absolute value of one percent of real GDP growth ($\Delta\% \text{GDR}$) as a key indicator of

economic growth characterizes the importance of each percent of real GDP growth and is calculated as the ratio of absolute growth to the growth rate of the indicator.

To assess the contribution of business architecture of the banking sector, this indicator can be defined as follows:

$$\Delta\%GDP = \frac{\Delta GDP_{BS}}{T \Delta_{GDP}}, \quad (1)$$

where $\Delta\%GDP$ is the absolute value of one percent of real GDP growth, per 1%; ΔGDR_{BS} is the absolute increase (change) in real GDP as a result of the impact of the banking sector on the formation of GDP components by the final consumption method, UAH; $T \Delta_{GDP}$ – real GDP growth rate, %.

In this case, the absolute increase (change) in real GDP as a result of the impact of the banking sector on the formation of components of GDP by the final consumption method is the sum of contributions, generalized by groups of banks with similar business models.

The condition for the formation of a business architecture of the banking sector, which allows achieving maximum economic growth (other things being equal), is the development of public-private partnership at the level of a country's banking system. As already mentioned, such a partnership is implemented by subordinating the private business interests of banks to public needs. It is manifested in the deliberate refusal of the bank's management to apply business models, which, according to the assessment of the impact of changes in the business architecture of the banking sector on economic growth, are classified by the central bank as negatively affecting economic growth and restraining the national economy.

3. RESULTS AND DISCUSSION

The impact of changes in the business architecture of the banking sector on economic growth is primarily due to changes in the contribution of different groups of banks by type of a business model of banking in shaping the structure of financial indicators of the banking sector, such as loans, net financial results, total assets, deposits (Table 1).

Table 1. Factors and directions of their impact on economic growth for different business models of banks

Source: Authors' development.

Business model of the bank	Specific characteristics	Factors	The component of GDP that is expected to have an impact on economic growth
Retail business model	Focus on lending to individuals	Volumes of loans granted Net financial result Total assets	Consumption
Corporate business model	Active cooperation with corporate clients	Volumes of loans granted Net financial result Total assets Volumes of deposits	Investments Export Import
Universal business model	Diversification of business, both in terms of major counterparties and in terms of areas of economic activity	Volumes of loans granted Pure financial result Total assets Volumes of deposits	Consumption Investments Export Import
Corporate business model with retail financing	Lending to legal entities in combination with the focus on raising funds from individuals	Volumes of loans granted Net financial result Total assets Volumes of deposits	Consumption Investments
Limited credit intermediation model	There is no active lending	Total assets Volumes of deposits Net financial result	Consumption Investments

The choice of a universal business model allows banks to claim the impact of their activities on the formation of GDP by the method of final consumption in all existing areas – consumption, investment, exports, and imports. However, when choosing a retail business model, this impact is usually limited to changes in consumption (mostly private). In turn, the corporate business model determines the impact of changes in the business architecture of the banking sector through changes in the parameters of investment, exports, and imports. The impact on the formation of real GDP through changes in consumption and investment should be characteristic of such business models of banks as the corporate business model with retail financing and the model of limited credit intermediation.

As a result of correlation analysis, it was found that the main factors influencing the change in the business architecture of the banking sector on the absolute value of 1% growth in real GDP of Ukraine are a net financial result, loans to customers, and deposits. This dependence is described by the following regression equation, which, according to estimates, explains 99.7% of the variation in the absolute value of 1% of real GDP growth in Ukraine:

$$\Delta\%GDP = 0.021X_1 + 0.014X_2 + 0.089X_3 - 99,172.6, \quad (2)$$

where $\Delta\%GDP$ – absolute value of 1% of real GDP growth, UAH million; X_1 – net profit (loss), UAH million; X_2 – loans to customers, UAH million; X_3 – volumes of deposits, UAH million.

The impact of changes in the business architecture of the banking sector on economic growth can be studied in terms of the contributions of groups of banks with different business models in the formation of aggregate indicators of the banking sector (Table 2).

As can be seen from Table 2, according to the factor of net financial result of the banking sector, the impact of the banking sector's business architecture on economic growth in the country is due to changes in financial results of banks that use retail, corporate, and universal business models; by the factor of the volume of loans granted to customers, the banking sector – with the help of partial indicators such as the volume of loans granted by banks with the model of limited credit intermediation; by the factor of the volume of deposits attracted by the banking sector – due to the change in the corresponding liabilities formed by groups

Table 2. Correlation coefficients of indicators of Ukraine's banking sector with the contribution of certain groups of banks by business model type to their formation in 2015–2020

Source: Calculated by the authors based on the National Bank of Ukraine (2021).

Indicator	Business model of banks in the banking sector				
	Retail	Corporate	Universal	Corporate with retail financing	Limited credit intermediation
Net profit	0.99785	0.983828	0.777623	0.669062	0.22845
Loans given to customers	-0.4076	-0.1796	0.4907	0.1473	0.8489
Volumes of deposits	0.222774	0.588025	0.566884	0.789674	0.750083

of banks with a corporate business model with retail financing.

According to the results of building a regression model of the dependence of the absolute value of 1% growth of Ukraine's real GDP on the above system of factors, the following equation is obtained:

$$\Delta\%GDP = 43,974.670 + 4.688X1 - 0.255X2 + 0.343X3 - 2.710X4 + 0.014X5, \quad (3)$$

where $\Delta\%GDP$ – absolute value of 1% of real GDP growth, UAH million; $X1$ – net profit (loss) of banks with a retail model, UAH million; $X2$ – net profit (loss) of banks with a corporate model, UAH million; $X3$ – net profit (loss) of banks with a universal model, UAH million; $X4$ – loans granted by banks with the model of limited credit intermediation, UAH million; $X5$ – deposits attracted by banks with a corporate model with retail financing, UAH million.

Based on the obtained parameters of the regression equation and calculation of partial elasticity coefficients (Table 3), it can be concluded that the impact of changes in the business architecture of the banking sector on economic growth in Ukraine is as follows:

- 1) in the retail model, the absolute value of 1% of real GDP growth changes by 0.155% in the same direction;
- 2) when the net financial result of a group of banks with a corporate model changes by 1%, the absolute value of 1% of real GDP growth changes by 0.211% in the opposite direction;
- 3) when the net financial result of a group of banks with a universal model changes by 1%,

the absolute value of 1% of real GDP growth changes by 0.045% in the same direction;

- 4) when the volume of loans granted by a group of banks on limited credit intermediation changes by 1%, the absolute value of 1% of real GDP growth changes by 0.285% in the opposite direction;
- 5) when a 1% change in the volume of attracted deposits by a group of banks with a corporate model with retail financing, the absolute value of 1% of real GDP growth changes by 0.183% in the same direction.

It should be noted that the impact of the transformation of the business architecture of the banking sector with a corresponding change in the distribution of lending structure between groups of banks with different types of business models is ambiguous and multidirectional. Given that a 1% change in gross accumulation and a 1% change in consumption expenditures correspond to different monetary estimates of changes in the country's GDP, the positive impact of changes in business architecture and, accordingly, the structure of loans by business model type of banks, investment can fully or partially be offset by reductions in consumption due to such transformations.

Table 4 presents estimating results of the residual impact of changes in the banking sector's business architecture on GDP, taking into account the different scale and directions of changes in gross accumulation and consumption costs with equal changes in the distribution of bank loans between groups of banks by the business model.

It should be noted that the more modular value of the correlation coefficient in the regression models of gross accumulation or consumption expenditure

Table 3. Elasticity coefficients of changes in the absolute value of 1% real GDP growth to changes in factors of the regression model

Source: Calculated by the authors based on the National Bank of Ukraine (2021).

Factor	Coefficient of elasticity
Net profit (loss) of banks with a retail model (X1)	0.15523774
Net profit (loss) of banks with a corporate model (X2)	0.2109259
Net profit (loss) of banks with a universal model (X3)	0.04463251
Loans granted by banks with a limited credit intermediation model (X4)	0.28509153
Deposits raised by banks with a corporate model with retail financing (X5)	0.182762662

determines which of these two components will be more affected by changes in the business architecture of the banking sector. This indicates the direction of final spending in GDP, which will change this indicator of economic growth when changing the distribution of banks by business model type.

Analysis of Table 4 shows that, given the actual performance of the Ukrainian banking sector in 2015–2020, the change in the business architecture of the banking sector mainly affected the change in GDP in terms of changes in consumption expenditures. For almost all business models, except retail, the changes caused by their loans in the volume of gross lending are offset by changes that occur in the volume of consumption expenditures.

Thus, in modern conditions, the NBU can positively influence the gross accumulation in the country, while ensuring GDP growth, only by creating conditions under which banks will not choose a retail business model. Accordingly, public-private partnerships in the banking sector should provide for the voluntary abandonment of banks from this business model in order to stimulate economic growth in the country.

Table 5 clearly demonstrates the differentiation of qualitative consequences of changes in the banking sector's business architecture on GDP, taking into account the direction of final spending that has such an impact.

According to the results of the study, it can be stated that the following targeted changes in the business architecture of the banking sector will contribute to economic growth in Ukraine's economy:

- 6) reduction of credit activity of banks with retail, corporate and universal business models;
- 7) increase the lending activity of banks with a corporate business model with retail financing and a business model of limited credit intermediation.

These results are the basis for substantiating the mechanisms of implementation of a mesoprudential approach to banking regulation and supervision, focused on regulating the activities of groups of banks with certain business models based on public-private partnership.

Table 4. Assessing the residual impact of changes in business architecture of the Ukrainian banking sector on GDP

Source: Calculated by the authors based on the National Bank of Ukraine (2021).

Factor – the volume of loans granted by a group of banks	Correlation coefficients		Sum of correlation coefficients (residual impact on GDP)	The component of GDP, which forms the residual impact
	For gross accumulation	For the consumption costs		
With a retail business model	–34.559	26.108	–8.450	Investments
With a corporate business model	2.477	–4.603	–2.126	Consumption
With a universal business model	20.480	–56.652	–36.172	Consumption
With a corporate business model with retail financing	–5.233	27.617	22.384	Consumption
With a limited credit intermediation business model	–11.999	51.817	39.818	Consumption

Table 5. Consequences of business architecture change

Source: Authors' development.

Group of banks by type of business model	The component of GDP, which forms the residual impact	Changes in the volume of loans granted	
		Growth	Decrease
With a retail business model	Investments	The reduction of gross accumulation	The growth of gross accumulation
With a corporate business model	Consumption	The reduction of consumption costs	The growth of consumption costs
With a universal business model	Consumption	The reduction of consumption costs	The growth of consumption costs
With a corporate business model with retail financing	Consumption	The growth of consumption costs	The reduction of consumption costs
With a limited credit intermediation business model	Consumption	The growth of consumption costs	The reduction of consumption costs

Once again, in the study of objects above the micro level of the economy (for example, the banking sector), the concept of PPP is different from the traditional interpretation. PPP should not be considered solely from the standpoint of the tool of accumulation of investment resources and the distribution of risks and rewards for the implementation of structural projects for the development of socially significant areas of society. It is considered in this study as an institutional tool for the formation and functioning of socially responsible business, which is subordinated to the implementation of activities aimed at minimizing social risks. Accordingly, the task of banking regulation and supervision is to provide the banking business with clear signals, which management decisions in choosing a business model are expected by the state and will be positively perceived by society, as the spread of such models contributes to economic growth. In a public-private partnership, banks choose their own business model, guided not only by the criteria of maximizing their profitability and maintaining financial stability, but also considering additional constraints in this choice by the public interest. This study considers such processes of transformation of the structure of the banking sector and change of proportions of the presence of banks with different business models in it to be the development of business architecture based on PPP. The relevant policy of central banks has been called mesoprudential.

The goal of the National Bank's mesoprudential policy should be to increase the resilience of the financial system and reduce systemic risks that arise and spread within the financial system due to the interdependence of financial institutions,

which is determined by the propensity to similar risks within groups of financial institutions with the same business model type.

In this case, the relationship between macroeconomic stability and economic growth should be considered through the prism of financial aspects related to the formation and operation of the business architecture of the banking sector.

Business architecture as a complex result of individual banks' individual choice of business models and development strategies, accumulates and integrates related financial threats, and thus reflects the risks of losing financial stability due to the predominance of a certain period of the development of the banking sector of certain business models of banks. Thus, business architecture in modern conditions becomes one of the determinants of financial stability, ensuring which in the economy of Ukraine is a priority goal of the central bank. At the same time, Kozyuk's approach to the definition of financial stability is correct, by which the author understands "such a development of the financial sector that would contribute to long-term growth of the economy as a whole" (Kozyuk, 2009).

The deepening of the crisis in the economy and the permanent emergence of financial crises indicate the ineffectiveness of macroprudential policies of central banks. This study tends to see one of the reasons for this inefficiency in the nature of macroprudential policy, which is directly aimed at maintaining financial stability in general – to eliminate or limit systemic risks to prevent crises or reduce losses from them.

The generally accepted main components of the macroprudential approach (Vovchak et al., 2019) are:

- analysis of the stability of the banking sector at the aggregate level, rather than at the level of individual organizations;
- focus on the entire financial sector, not just banks;
- analysis of the relationship between the system-forming banks to predict the domino effect, to understand the cross-bank positions and the risks of the crisis through the position of banks in the markets of individual financial assets;
- applied approach to decision-making on changing the settings of regulation and supervision (change of reserve requirements, capital adequacy ratios and other parameters).

The reorientation of banking regulation and supervision to reduce systemic risk and preserve systemic financial stability by identifying vulnerabilities in the country's financial system and taking measures to address them in a timely manner led to the NBU's focus on studying the activities of system-forming credit institutions and financial market institutions. This is a significant shortcoming of macroprudential policy, which prevents it from performing effectively the tasks of ensuring both financial stability and macroeconomic stability and economic growth.

Considering systemic risk as a key aspect of macroprudential regulation, Borio (2010) classifies macroprudential policy in two dimensions – temporal and intersectoral. It is the cross-sectional

dimension that is not fully implemented in the current practice of banking regulation and supervision. The cross-sectional dimension refers to how risk is distributed within the financial system, taking into account the existing relationships between institutions. To take full account of it, macroprudential policy should ensure that prudential instruments are calibrated according to each institution's contribution to the growth of systemic risk and increase the transparency of such risks. Such a calibration cannot be fully implemented without analyzing the impact of the banking sector's business architecture on macroeconomic stability and economic growth.

Indeed, the thesis of the endogenous nature and dependence of the risk of macroeconomic stability on the collective behavior of banks and institutions of the non-banking financial sector, which is the basis of macroprudential policy, is fair.

However, it is a mistake to ignore the fact that this collective behavior is manifested not only and not so much in system-forming institutions, but in institutional ties that arise within the banking sector due to individual banks' individual choice of business models and the formation of groups of banks, strategic guidelines, changes in the ratio of competitive forces of these groups. All these institutional connections are integrated into the business architecture of the banking sector.

In modern conditions, in addition to micro- and macroprudential approaches, it is necessary to emphasize the existence and active use of mesoprudential approach in the system of banking regulation and supervision.

CONCLUSION

This paper is devoted to setting development priorities for the business architecture of the banking sector of Ukraine's economy based on PPP. For Ukraine in 2015–2020, the change in the business architecture of the banking sector mainly affected the change in GDP in terms of changes in consumption expenditures. For almost all business models, except retail, the changes caused by their loans in the volume of gross lending are offset by changes that occur in the volume of consumption expenditures. According to the results of the study, it can be stated that the following targeted changes in the business architecture of the banking sector will contribute to economic growth in Ukraine's economy:

- 1) reduction in credit activity of banks with retail, corporate and universal business models;
- 2) increased lending activities of banks with a corporate business model with retail financing and a business model of limited credit intermediation.

In modern conditions, it is advisable to abandon macroprudential policy to banking regulation and supervision and move to mesoprudential. Mesoprudential policy is based on using PPP as an institutional tool for forming a socially responsible banking business. Public-private partnership identifies organizational and managerial opportunities for self-regulation of the banking sector, aimed at minimizing the risks of losing financial stability of the banking system, which may arise from redistribution of resources and performance between groups of banks that have chosen similar business models and development strategies.

These results are the basis for substantiating the mechanisms for implementing a mesoprudential approach to banking regulation and supervision, focused on regulating the activities of groups of banks with certain business models based on PPP.

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