Digital Technologies in Bank Retail Lending

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ABSTRACT
The subject of this study is bank retail lending and its digital transformation in the context of the information society and financial market formation and development. Obtaining, keeping, protecting, disseminating, converting reliable information into digital form and more active use of digital technologies for providing financial banking products and services to the population are becoming a driver for the banking sector development as a whole and individual banking institutions in particular.

Every year banks increase retail lending and expand loan products range. At the same time, the retail lending trends are characterized by both positive and negative factors. It is important to increase the volume of bank loans to individuals and at the same time preserve and improve the quality of bank loan portfolios, and reduce the severity of credit burden on the population.

Digitalization of all spheres of the country’s socio-economic development is on the agenda of the Russia’s government. In the context of bank interest income decrease, it is essential to introduce innovative and digital technologies in banking processes, including retail lending. It is important to understand that personal loans share in the assets structure of Russia’s banks is growing. The opportunity to get a loan in order to buy a house, car, various goods is a significant component of people's daily lives.

Keywords: bank retail lending, digitalization, digital mortgage model

1. INTRODUCTION

The subject of the study is topical because bank lending to individuals plays an important part in the progressive development of the financial market and economy as a whole. The financial market is a special, specific area of activity of traditionally existing and newly emerging financial institutions, together making up its infrastructure [10, p. 85]. Banks occupy a significant place in the financial market, offering individuals, among other things, a variety of financial and banking products, in particular, retail loans. Retail lending stimulates solvent demand, contributes to the development of the country’s banking system, revitalizes the real sector of the economy and is the key to social and economic stability. In addition, lending to individuals improves the citizens’ quality of life and contributes to human capital formation and development. In the economic literature, many Russian and foreign authors look into the issues of bank lending to individuals. However, as a rule, economists pay attention to the traditional theory and practice of retail banking lending. Modern practice of lending to individuals in the light of banking sector digitalization remains beyond the scope of full-fledged research. In our opinion, economic literature does not pay enough attention to the issues of using innovative technologies in bank retail lending. In addition, it is necessary to clarify such concepts as “consumer lending” and “retail lending”, and specify the principles of bank retail lending and its functions. It seems that in modern conditions, it is essential to explore ways of achieving a balance between several parties interests: interests of banks, seeking to provide the largest volumes of loans with a minimal risk; interests of borrowers, seeking to improve the quality of life; interests of the state, seeking to increase solvent demand without exceeding the critical level of debt burden.

The purpose of this paper is to analyze theoretical and practical approaches to bank retail lending, study the possibilities of digital transformation of lending to individuals in the context of increased banking sector competition. This competition is caused by customer requirements to speed up processing and converting information, simplify bank services, and regulate bank service charges. For this, it is necessary to solve a number of problems:

- to study the essence of bank retail lending, systematize scientific approaches to the term definition;
- to consider the methodological basis of bank lending to individuals;
- to analyze the Russia’s market of lending to individuals and the practice of bank retail lending;
- to identify the main problems of lending to individuals in Russia in the light of necessary bank activities digitalization and introduction of innovative technologies in retail lending process;
- to propose a set of measures, the implementation of which will solve the identified problems, which, in turn,
will help expand the customer base of banks and reduce bank risks.

2. RESEARCH METHODOLOGY

Works of domestic and foreign scholars on theoretical and practical aspects of bank retail lending and issues of wider introduction of digital technologies in lending to individuals served as the theoretical and methodological basis of the study. In our study we used such research methods as statistical and comparative analysis of retail loan market indicators, scientific knowledge systematization, generalization and interpretation, and the method of expert assessments. The information and empirical basis of the study was the legislative acts of the Russian Federation, regulatory and statistical materials of the Bank of Russia and the Federal State Statistics Service.

Bank lending to individuals involves relations that arise when a credit institution provides a loan, including electronic means of payment, to an individual. People cannot use this loan for entrepreneurial activity as stipulated in the loan agreement and the execution of the relevant agreement [1, Art.1]. In this case, the borrower is an individual who plans to apply or is applying, or has already applied to the creditor for a loan. The creditor is a credit institution which is providing or has provided a loan [1, Art. 3]. Lending to individuals allows banks to increase their loan portfolios by giving numerous small amounts of money to the population, which increases investment diversification, leads to lower risks and less dependence on large loans. In addition, lending to individuals is one of the most profitable areas of lending for Russia’s banks.

In economic science, there are various approaches to understanding the nature of lending to individuals. The main existing points of view of Russian and foreign authors are systematized in table 1.

Table 1 Interpretation of concepts “lending to individuals” and “consumer credit”

<table>
<thead>
<tr>
<th>Scholars</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>L.A. Drobozina, G.G. Korobova</td>
<td>Lending to the population is a process of providing loans to people, the terms and conditions of a loan being repayment plan and interests charged</td>
</tr>
<tr>
<td>G.N. Beloglazova, L.P. Krolivetskaya</td>
<td>Lending to individuals is a set of interrelated elements, which determine the lending procedures and regulation according to lending principles and lending risk theory. Consumer credit is a kind of loan that serves as a means of satisfying consumer needs</td>
</tr>
<tr>
<td>M.S. Maramygin, E.N. Prokofieva, E.V. Strelnikov, Z.L. Garipova, A.A. Belova, P.A. Telezhnikov</td>
<td>Lending to individuals or retail lending includes consumer and mortgage loans. Individuals get consumer loans to purchase consumer goods and services for non-production purposes. Home construction and home loans are classified as mortgage loans</td>
</tr>
<tr>
<td>A.M. Tavasiev, T.Yu. Mazurina, V.P. Bychkov</td>
<td>Consumer lending or retail lending only involves lending money to individuals for non-production purposes by banks and other financial institutions</td>
</tr>
<tr>
<td>E.F. Zhukov, V.A. Borokova</td>
<td>Consumer loan is a consumer personal loan or loan taken to purchase valuable goods and consumer durables, improve housing conditions, pay for education, medical treatment, etc. Consumer loans are issued to purchase both movable and immovable property</td>
</tr>
<tr>
<td>A.V. Pechnikova, O.M. Markova, E.B. Starodubtseva</td>
<td>Retail loan is a loan issued to individuals by banks. Providing this loan, banks should consider borrowers financial needs and sufficient guarantees for the loan timely repayment</td>
</tr>
<tr>
<td>O.I. Lavrushin, I.D. Mamonova, N.I. Valentseva, E.S. Kavruk</td>
<td>Consumer lending is the sale of consumer goods by stores, which offer deferred payment, or loans provided to individuals by banks for the purchase of consumer goods, as well as for the payment of various personal expenses. Consumer loans are loans to individuals (consumers) to purchase goods (services) for personal, family, household or other needs not related to entrepreneurial activity</td>
</tr>
<tr>
<td>A.G. Gryaznova</td>
<td>Consumer lending is a form of credit that is provided to people by trade and service enterprises when purchasing consumer goods, durable goods, paying for household services on a deferred payment basis</td>
</tr>
<tr>
<td>J. Keynes</td>
<td>Consumer credit is understood as both unproductive (used to meet the personal needs of the borrower) and the productive form of credit</td>
</tr>
<tr>
<td>M. Huggins</td>
<td>Lending to individuals is lending to individuals with charged interest, selling goods on hire purchase, as a rule, with charged interest; economic value category, an integral element of commodity-money relations</td>
</tr>
</tbody>
</table>
Quite often, specialists identify the concepts of “lending to individuals” and “consumer lending” though the latter is narrower. In this regard, the authors consider it necessary to clarify these concepts. Lending to individuals or retail lending is a combination of monetary and commodity credit relations that are established between borrowers (individuals and individual entrepreneurs) and lenders (banks and companies of various types of business ownership) in order to meet the diverse needs of the population that are not related to entrepreneurial activities. Consumer, mortgage, car loans and credit card loans are separate types of lending to individuals.

The main agent, accumulating temporarily free resources and providing it for temporary use, is a commercial bank. In this regard, quite often the concept of retail lending is used to refer to a bank loan provided to individuals.

The fundamental principles of bank lending in general and retail lending, in particular, are:
- repayment plan;
- repayment term;
- payment;
- security.

The authors consider it necessary to list one more fundamental principle of bank lending to individuals, i.e. the principle of reserve, which means the need for a credit institution to create reserves for possible losses on loans.

Additional principles of bank lending to individuals are the principles of intended use and differentiation.

The main functions of bank retail lending should be as follows: accumulating temporarily free money, redistributing, issuing, stimulating and social.

3. RESEARCH RESULTS

Lending to individuals is an important area of a commercial bank business. The procedure for issuing loans to people is established by local acts of a particular bank in accordance with the Russian Federation legislation. The basis of local acts is the credit policy. The bank’s credit policy regulates the target structure of the retail loan portfolio, methods for analyzing borrowers creditworthiness, the procedure for loan issuing and servicing, the methodology for monitoring compliance with loan agreements, the process of minimizing credit risks, the procedure for monitoring problem loans and working with them, as well as the employees authority and responsibility in the field of lending to individuals [3, p. 226].

Basing on the developed credit policy, a commercial bank carries out a retail lending process, which includes six stages: attracting and advising potential customers; receiving an application and other necessary documents; analyzing solvency of a borrower, co-borrower, guarantor and proposed collateral; preparing and signing loan documentation, providing a loan; loan servicing and control.

Competent lending process procedure, which strictly meets the requirements of the legislation and commercial banks credit policy, allows credit institutions to minimize risks, reduce costs and maximize profits.

Gradual monetary policy easing, characterized by a decrease in the key rate from 11% at the beginning of 2016 to 6.5% in October 2019, and observed inflationary fluctuations positively affected bank lending rates for the population, which decreased from 18.11% in January 2016 to 12.67% in October 2019.

The decrease in interest rates and in full cost of borrowing led to a 72.8% increase in the volume of retail loans issued by credit organization if we compare 2018 and 2016.

Nevertheless, the statistics do not indicate the priority of retail lending in the credit policy of most Russia’s commercial banks (table 2).

<table>
<thead>
<tr>
<th>Indicator</th>
<th>01.01.2017</th>
<th>01.01.2018</th>
<th>01.01.2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banking sector assets, billion rubles.</td>
<td>80 063.3</td>
<td>85 191.8</td>
<td>94 083.7</td>
</tr>
<tr>
<td>Volume of loans issued to individuals, total, billion rubles.</td>
<td>7 210.3</td>
<td>9 233.7</td>
<td>12 456.1</td>
</tr>
<tr>
<td>Volume of ruble loans to individuals, billion rubles.</td>
<td>7 100.6</td>
<td>9 132.5</td>
<td>12 366.7</td>
</tr>
<tr>
<td>Volume of foreign currency loans, billion rubles.</td>
<td>109.7</td>
<td>101.2</td>
<td>89.4</td>
</tr>
<tr>
<td>Retail loans share in banking sector assets, %</td>
<td>9.0</td>
<td>10.8</td>
<td>13.2</td>
</tr>
<tr>
<td>Share of ruble retail loans in the total amount of bank loans to individuals, %</td>
<td>98.5</td>
<td>98.9</td>
<td>99.3</td>
</tr>
<tr>
<td>Share of foreign currency retail loans in the total amount of bank loans to individuals, %</td>
<td>1.5</td>
<td>1.1</td>
<td>0.7</td>
</tr>
</tbody>
</table>

The growth of bank loan portfolio by 39.6% in 2018 compared with 2016 is mainly caused by an increase in the volume of housing loans (excluding mortgages) by 68.5%, mortgage loans by 38.9% and other unsecured consumer loans by 35.6% over the same period [15].

When considering the current Russia’s market of bank lending to individuals, we should special attention to mortgage loans.
On 01.01.2019, the Russian Federation reached the maximum volume of new mortgage lending over the entire observation period. The growth rate of the number of issued mortgage loans is increasing every year: in 2017, the growth amounted to 26.9%, in 2018 to 35.4%.

Mortgage lending remains the most high-quality segment of bank lending to individuals: the overdue debt share in the total portfolio of credit institution mortgages loans decreased from 1.7% on 01.01.2017 to 1.2% on 01.01.2019. Nevertheless, despite the absolute historical minimum level of mortgage rates in 2018, the number of people with mortgages remains low. The share of people with a mortgage in 2018 amounted to about 12% [15]. The reasons for this situation are the low growth rate of real disposable cash incomes of the population (in 2018, the growth was 0.1% [14]), an increase in the debt burden, as well as a slight increase in interest rates on loans with a low down payment and a decrease in the share of approved loans with down payment from 10 to 20%, caused by the tightening of macroprudential measures of the Bank of Russia.

4. DISCUSSION OF THE RESULTS

The intensification of bank retail lending further development is hindered by a number of external and internal problems. The main external problems for banks are a certain imperfection of the regulatory framework governing relations in this area, macroeconomic uncertainty, high level of concentration in the credit market, insufficient financial literacy and low public confidence in the banking system, incomplete and false information provided by credit bureau reports [17]. The key internal problems are the decline of potential borrowers’ quality, imperfection of the system for approving loan applications, provision of incomplete information on lending terms by credit institution employees, irrevocability of loans to individuals provided by the bank, and insufficient digital technologies use in bank retail lending.

In our study, we tried to find ways of solving the problems of retail lending digitalization:

- further implementation of the lending process using the retail conveyor technology, applying it to mortgage loans as well;
- development of remote banking services technologies:
  - improvement of mobile and Internet banking, custom programming;
  - robotic process automation, implementation of document recognition technologies;
  - more active use of remote identification technologies;
  - integration of existing service channels into a single system of continuous communication with a client (omnichanneling);
- development of a uniform insurance policy format for all insurance companies and the rules of comprehensive mortgage insurance, electronic document exchange with insurance companies.

In 2017, the Government of the Russian Federation approved the Program for the Digital Society and Digital Economy Development in the Russian Federation, in which digital data is a production key factor in all areas of socio-economic activity. According to the results of 2018, the Russian Federation was in the TOP-5 of digital banking leaders in the ranking of EMEA countries (38 countries of Europe, the Middle East and Africa), [11, p. 3]. 84% of Russian banks declare plans for digital transformation of both internal business processes and customer interaction processes [16]. A third of banking operations in the Russian Federation are already carried out using digital technology.

Russia’s banking digital transformation is accompanied by the introduction of automated banking systems, remote service technologies, biometric platforms, and methods for analyzing large amounts of data. Banks are more actively applying artificial intelligence and machine learning, cloud and distributed ledger technologies, robotic process automation. Gradually, banks are moving towards open interfaces and ecosystems.

The Bank of Russia has already begun its transformation into an ecosystem. In 2019, the Market Place project deposit platform was launched, which is a system of remote retail distribution of financial products, services and registration of financial transactions. The Marketplace platform provides for the consolidation of data on the proposals of financial ecosystem participants, needs analysis and personalization of offers for customers. The Bank of Russia is planning to launch platforms for mortgage and consumer loans in the near future [15]. The banking community has already started to discuss the issues of mortgage lending platform.

Figure 1 presents a proposed model of this process.

The main objects of the digital mortgage lending model are borrowers, aggregators, electronic platform “Mortgage” (the platform on which the process participants interact), commercial banks, various databases (Unified system of identification and authentication, Biometric System, State Services Portal, Federal Tax Service of Russia, Pension Fund of Russia, credit bureaus), real estate agencies, construction, appraisal and insurance companies, financial transaction registrar (registry of storage of legally relevant information on transactions).

As Brett King noted, the complexity of financial products often lies in the procedure itself since obtaining a consumer loan, credit card and mortgage requires approval which may be given only after verifying customers’ identities and their solvency, obtaining information about their jobs, etc. [6, p. 184]. The proposed model will allow individuals to obtain a mortgage loan on the most favorable conditions without a single visit to the bank office in the shortest possible time. Potential borrowers are supposed to use an aggregator showcase - an Internet resource or mobile application that provides clients with the opportunity to choose a loan...
product through the systematization and visualization of various characteristics [7, p. 24]. Then, the borrower fills out a single online questionnaire with a minimum number of boxes and gives consent to the processing of personal data such as employment information, average monthly income, credit bureau report by putting an electronic signature.

The obtained information is transferred to the Mortgage electronic platform, which completes remote biometric personal identification and requests information for considering a loan application in various state databases. Then banks, working on this platform, consider the loan application and make decisions about providing a mortgage to the borrower. The client can get the information whether banks have approved or rejected the application in the aggregator personal account.

Partnership integration of the Mortgage electronic platform with real estate agencies, developers, insurance and appraisal companies will allow borrowers to remotely select a real estate object, automatically evaluate its value, obtain the results of a legal examination, conclude, pay and renew an electronic insurance contract [13].

Signing loan documentation, obtaining borrowed funds, registering electronic collateral and property rights, and loan servicing will also be carried out online [15].

In the future, organizations providing various services such as premises renovation, interior design, burglar alarms, internet and television installation, etc. will work on this platform too [12].

![Figure 1 Proposed model of digital mortgage lending](image-url)

### 5. CONCLUSIONS

After reviewing theoretical and practical approaches to bank retail lending in Russia we can state that in the context of the information society development and bank focus shift from the price to the service, credit institutions are increasingly recognizing the importance and necessity of using digital technologies in retail lending and implementing pilot projects of individual business processes digitalization. In the future, the process of providing credit products to individuals (from submitting a loan application to supporting a remote transaction) will be fully transferred to the digital environment. Ecosystems and digital mortgage lending model proposed by the authors will facilitate this process.

It was established that the core values of a digital society are speed, convenience and security. To achieve these characteristics of products and services commercial banks should strive to transform the process of lending to individuals. The main technologies that will help achieve these goals are remote banking services, mobile technologies, remote identification and authentication technologies, big data, open interfaces, cloud technologies, distributed ledger technologies, optical document recognition, voice analytics, etc.

We proposed a model of digital mortgage lending, which should apply aforementioned technologies and relieve a potential borrower of collecting a set of documents in order to submit a loan application. This model will make the process of obtaining and servicing a loan more convenient, quick and invisible to the client, and will allow the borrower to interact with banks, real estate agencies, appraisal and insurance companies, government agencies in the “one-window mode”.

Bank retail lending digitalization means a significant reduction in costs, the number of errors and risks as well as the customer base expansion.

### REFERENCES


[16] KPMG. - URL: http://www.home.kpmg