Mortgage as a way to purchase housing in modern conditions

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Abstract. The main goal of any government is to create a system that would solve social problems. One of these problems is affordable and comfortable housing. Property prices are traditionally high enough. In this regard, most of the buyers are forced to take out a mortgage as one of the alternative ways to solve the housing problem. Mortgage allows a buyer to purchase an apartment or a house and pay its cost in installments over the next years.

1 Introduction

Currently, the housing problem is crucial in the Russian Federation and attracts attention of government authorities. The government is going to increase the annual housing construction volume up to 120 million m², while in 2017, it was about 80 million m² [1].

In this regard, the issue of the method for purchasing a house is relevant. The citizens can use their own funds, mortgage loans, or benefit from government programs, etc.

2 Materials and methods

Mortgages are attractive because they allow individuals to become
homeowners in a fairly short time, move into new apartments, register all family members, and pay mortgage loan cost over the next few years. This is much more convenient than saving money, exposing significant savings to inflation and other risks, or renting apartments, since the amount of monthly loan payments is comparable to the monthly rent for a similar apartment.

Reliability and security of a mortgage loan are due to the fact that the apartment undergoes a thorough legal review by the bank and the insurance company and passes into the ownership of the borrower upon receipt of a loan.

The advantages and disadvantages of mortgage loans are presented in Table 1.

One more advantage of mortgage is a tax deduction [2] which is a one-time tax rebate. This is the amount by which the total number of tax payments is reduced.

**Table 1.** The advantages and disadvantages of mortgage loans.

| Advantages                                                                 | Disadvantages                  |
|----------------------------------------------------------------------------|--------------------------------|
| Opportunity to borrow a large amount of money. The mortgage loan is designed | High total amount of overpayments. Depending on the size of the monthly payment and terms, it reaches 100-200% of the initial value. |
| for the purchase of real estate. Therefore, one can get larger financial resources. |
| Reduced interest rates due to the fact that the mortgage is included in the program of targeted-oriented lending and designed for people with an average level of incomes. |
| Small monthly installments. They decrease due to long payment periods. |
| Various programs. Mortgage loans are granted for primary and secondary housing, commercial real estate objects, land plots, etc. |
| Long term for debt repayment (5-30 years)                                    |

Moreover, mortgage contributes to the expansion of market capacity and contributes to the social and economic effect.
3 Results

Housing construction financing using raised funds is popular. In the developed countries, mortgage lending or German building and loan associations are popular. In many countries, the idea of own home became a national idea (e.g., in the 1930s in the USA). The economic recovery was accompanied by the slogan “Own house to every American”. [3-5]

Any potential real estate buyer conducts marketing research on the chosen bank.

It is necessary to choose an optimal mortgage program, taking into account the currency, rates and terms.

In Russia, key participants of the mortgage lending market are presented in Table 2 [6].

**Table 2.** Key participants of the Russian mortgage lending market.

| Rank | Bank          | Volume of mortgage loans for two months in 2017, billion rubles | Market share in January-February 2017, % | Volume of mortgage loans granted in January, 2018, billion rubles | Market share for January 2018, % | Increase in market share for January 2018/January 2017 |
|------|---------------|----------------------------------------------------------------|----------------------------------------|----------------------------------------------------------------|---------------------------------|------------------------------------------------------|
| 1    | Sberbank      | 90,6                                                            | 49,6                                   | 82,6                                                            | 52,1                            | +3,2 p.p.                                            |
| 2    | VTB Group     | 42,8                                                            | 23,4                                   | 25,1                                                            | 15,9                            | -7,2 p.p.                                           |
| 3    | Rosselkhozbank| 3,7                                                             | 2,0                                    | 9,0                                                             | 5,7                             | +3,9 p.p.                                           |
| 4    | Gazprombank   | 5,4                                                             | 2,9                                    | 8,1                                                             | 5,1                             | +2,0 p.p.                                            |
| 5    | Dom RF+Russian capital | 5,3                                                             | 3,5                                    |                                                                |                                  | +1,6 p.p.                                            |
| 6    | Raiffeizenbank | 8,0                                                             | 4,4                                    | 3,8                                                             | 2,4                             | -1,7 p.p.                                           |
| 7    | Deltacreditbank | 4,5                                                             | 2,4                                    | 3,5                                                             | 2,2                             | +0,2 p.p.                                            |
According to the AHML, in January 2018, the volume of mortgage loans increased 2.1 that in the corresponding period of 2017 (70 billion rubles).

The standard algorithm scheme for purchasing housing through the mortgage lending system is shown in Fig. 1.

![Algorithm for the purchase of housing through the mortgage lending system.](image)

European mortgage loans are based on the same principles. The lender lends money to borrowers in order to allow them to invest in real estate. [3-5]

Let us calculate the purchase of housing using a mortgage loan.

The family meets the following criteria: they receive salaries, agree to insure their lives and health in accordance with the requirements of the Bank.

The interest rate is 10.9%.

The required income amount is 35 000 rubles.

Table 3 shows the basic values for obtaining a mortgage loan.

| Parameter             | Value     |
|-----------------------|-----------|
| Apartment area        | 54 m²     |
| Apartment cost        | 2 650 000 RUB |
Let us calculate the mortgage constant and periodic payments using formulas (1) and (2) [7, 8]:

\[ DP = ML \times MC \]  
\[ MC = \frac{i}{1 - (1+i)^{-n}} \]

where DP – regular debt payments, RUB;  
MC – mortgage constant;  
i – loan interest rate;  
n – loan term.

Figure 2 shows the payment scheme and the ratio of the loan amount and the overpayment amount.

The maximum amount of property deduction is 260,000 rubles for the principal debt and 388,728 rubles for the amount of interest paid.

In general, at present, the interest rate is decreasing and the number of mortgage deals is increasing. More and more apartments are purchased for living rather than for investing. However, mortgage lending cannot solve housing problems of all Russian citizens. According to the calculations, to obtain and repay the loan, incomes have to be higher than the average per capita incomes of the population. You should add transaction costs (initial
installment and loan servicing payment for the entire period) to the amount of repayments. As a result, the repayment period and the amount of loan overpayment increase. Young families and borrowers with unstable incomes can choose this option if there is no chance to increase the incomes in the next 3-5 years.

There are other ways to purchase apartments. The comparison of these ways is presented in Table 4 [10].

| Table 4. Comparison of housing purchase mechanisms. |
|---------------------------------------------------|
| **Mortgage** | **Installment plan** | **Leasing** |
| Payment term | Up to 30 years | Up to 5 years | Up to 15 years |
| Initial installment | From 15 % | 50 % and more | 0 % |
| Interest rate | 7-17 % | 10-12 % | 17 % and more |
| Insurance | Obligatory | Optional | No |
| Ownership | Immediately | Immediately | After payout |

4 Conclusion

These housing purchase mechanisms are the least common, due to the lack of sellers who agree to sell real estate objects under these terms and conditions (less than 5% across the country).

The analysis of various lending schemes deepens the understanding of the decision-making process when choosing the way to meet the housing needs. At the same time, mortgage lending is one of the promising areas of lending operations. It is suitable for the entire working-age population. In Russia, more than 60% of partnership agreements are concluded with the involvement of mortgage loans. [9]

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