

Czech University of Life Sciences Prague

Faculty of Economics and Management

Department of Trade and Finance (FEM)



Bachelor Thesis

Comparison of Ukrainian and Czech mortgage markets

Vladyslav Hlushko

© 2021 CULS Prague

BACHELOR THESIS ASSIGNMENT

Vladyslav Hlushko

Economics Policy and Administration
Business Administration

Thesis title

Comparison of Ukrainian and Czech mortgage markets

Objectives of thesis

The aim of this work is to compare offers of mortgage loans of selected banks of Ukraine and Czech Republic and to define options where it is more profitable for citizens to have mortgage housing.

Methodology

- The comparison of mortgage loan offers of selected banks is performed based on the following criterias: down payment, commissions, interest rate, annual and total cost of the mortgage loan.
- initial acquaintance with mortgage lending
- comparison of the variability of real estate prices in the Czech Republic and Ukraine (housing prices in the period from 2010-2020),
- analysis and comparison of dedicated banks for mortgage lending in Ukraine and the Czech Republic (based on Ukrainian banks – Privat Bank, Oschadbank and banks of the Czech Republic – Hypoteční Banka, Česká Spořitelna),
- Determination of the direction of mortgage lending in specific countries,
- Selection of the best option in terms of the specified criteria.

The proposed extent of the thesis

30-40 pages

Keywords

loans, mortgage rates, interest rates, bank, costs.

Recommended information sources

- Bankovníctví ; Finanční trh ; Finanční konglomeráty ; Praní špinavých peněz ; Centrální evidence účtů : velká novela zákona o stavebním spoření, nový zákon o centrální evidenci účtů, zásadní změny v zákoně proti praní špinavých peněz ; Stavební spoření : redakční uzávěrka 13.2.2017.* Ostrava: Sagit, 2017. ISBN 978-80-7488-217-3.
- FITCH, T P. *Dictionary of banking terms.* Hauppauge, NY: Barron's Educational Series, 2000. ISBN 0764112600.
- RITTER, L S. – UDELL, G F. – SILBER, W L. *Principles of money, banking, and financial markets.* New York: Basic Books, 2009. ISBN 978-0-321-33919-5.
- ROBINSON, E. *World economy : international trade, economic systems and development.* New York: Clary International, 2019. ISBN 978-1632408945.
- SCHMITZ, A. – MEYERS, W H. – C.A.B. INTERNATIONAL, ISSUING BODY. *Transition to agricultural market economies : the future of Kazakhstan, Russia, and Ukraine.* Wallingford, Oxfordshire, UK: CABI, 2015. ISBN 9781780645353.
- STUTZ, F P. – WARF, B. *World economy : resources, location, trade and development.* Upper Saddle River: Pearson Prentice Hall, 2007. ISBN 9780132436892.
-

Expected date of thesis defence

2020/21 SS – FEM

The Bachelor Thesis Supervisor

Ing. Olga Regnerová, Ph.D.

Supervising department

Department of Trade and Finance

Electronic approval: 3. 3. 2021

prof. Ing. Luboš Smutka, Ph.D.

Head of department

Electronic approval: 4. 3. 2021

Ing. Martin Pelikán, Ph.D.

Dean

Prague on 15. 03. 2021

Declaration

I declare that I have worked on my bachelor thesis titled "**Comparison of Ukrainian and Czech mortgage markets**" by myself and I have used only the sources mentioned at the end of the thesis. As the author of the bachelor thesis, I declare that the thesis does not break any copyrights.

In Prague 15th of March 2021

Acknowledgement

I would like to thank Ing. Olga Regnerová, Ph.D., for the expert's comments and the help she provided me during the processing of this work. Also, I would like to thank Ihor Prus, Maksym Belikov, and Karina Levina for consultations and for providing me some help.

Comparison of Ukrainian and Czech mortgage markets

Abstract

The purpose of this work is to compare the offers of mortgage loans from selected banks in Ukraine and the Czech Republic to determine options where it is more profitable for citizens of the Czech Republic or Ukraine to have mortgage housing. The comparison of offers for mortgage loans of selected banks which is based on the presented criteria such as down payment, commissions, interest rate, annual and total cost of the mortgage loan. Also, will be presented an initial acquaintance with mortgage lending and comparison of the volatility of real estate prices in the Czech Republic and Ukraine. In the Practical part will be provided an analysis and comparison of selected banks for mortgage lending in Ukraine and the Czech Republic according to basic annuity comparison of payments which are referred to Ukrainian banks such as Privat Bank, Oschadbank and Czech banks - Hypoteční Banka, Česká Spořitelna. Relying on the report of people processed from the Internet, will be formed result of the work of specific banks and their banking services, namely the quality of their work and operation speed. As a result of determining the direction of mortgage lending in given countries, will be chosen the best option according to the specified criteria.

Keywords: loans, mortgage rates, interest rates, analysis, costs, lend, bank, comparison, fees.

Srovnání Ukrajinského a Českého hypotečního trhu

Abstrakt

Účelem této práce je porovnat nabídky hypotečních úvěrů od vybraných bank na Ukrajině a v České republice a určit možnosti, kde je pro občany České republiky nebo Ukrajiny výhodnější hypoteční bydlení. Za tímto účelem jsou porovnány nabídky hypotečních úvěrů vybraných bank, které vychází z předložených kritérií, jako je záloha, provize, úroková sazba, roční a celková cena hypotečního úvěru. V práci bude dále popsán hypoteční úvěr a provedeno srovnání volatility cen nemovitostí v České republice a na Ukrajině. V praktické části bude provedena analýza a komparace nabídek vybraných bank pro hypoteční úvěry na Ukrajině a v České republice na základě anuitní porovnání plateb, které vycházejí z ukrajinských bank jako Privat Bank, Oschadbank a českých bank - Hypoteční Banka, Česká Spořitelna. Na základě analýzy názorů a zkušeností zveřejněných na internetu, bude vytvořen výsledek práce konkrétních bank a jejich bankovních služeb, zejména kvality jejich práce a rychlosti provozu. V důsledku určení směru poskytování hypoték v daných zemích a bude zvolena nejlepší možnost podle stanovených kritérií.

Klíčová slova: úvěry, hypoteční sazby, úrokové sazby, analýza, náklady, půjčka, banka, srovnávání, poplatky.

Table of content

1. INTRODUCTION	10
2. OBJECTIVES AND METHODOLOGY	11
3. THEORETICAL PART.....	12
3.1 Basic Definitions.....	12
3.2 Mortgage history of Ukraine.....	13
3.3 Mortgage history of Czech Republic	14
3.4 How does mortgage work.....	14
3.4.1 Primary and Secondary types of housing	15
3.4.2 Average sales of flats	16
3.4.3 Interest rate	17
3.4.4 Refinancing.....	17
3.4.5 Credit Risk	18
3.5 Types of mortgage loans.....	20
3.5.1 Legal term of credit.....	20
3.5.2 Types of debtors	21
3.6. How to get mortgage in Ukraine.....	22
3.7. How to get mortgage in Czech Republic	23
3.8. Negative factors affecting on obtaining mortgage.....	25
3.9. Mortgage Insurance	26
3.9.1 Mortgage Insurance in Ukraine	26
3.9.2 Mortgage Insurance in Czech Republic.....	26
4 PRACTICAL PART.....	27
4.1 Analysis of the dynamics of housing prices.....	27
4.2 Dynamic of housing prices of Ukraine in capital and province.....	27
4.2.1 Dynamic of prices of housing in province	28
4.2.2 Dynamic of prices of housing of Czech Republic in capital and province.....	30
4.2.3 Dynamic of prices of housing in province	31
4.3 Analysis of mortgage loans according to dedicated banks.....	32
4.4 Comparison of founded results by table	36
5 RESULTS AND CONCLUSION	37
6 REFERENCES	38
6.1 Online sources:.....	38
6.2 Literature:.....	39
7. LIST OF FIGURES AND TABLES	41

8. APPENDIX42

1. Introduction

Mortgages are not a new phenomenon, and many thoughts have arisen about this topic. People think that a mortgage is like a golden cage - there is a roof over your head, but there is no freedom. Is it so? The author will try to understand this topic by conducting an analytical analysis of the mortgage market in Ukraine and the Czech Republic. Is it really as bad as people think, or is a mortgage an opportunity to buy real estate without own capital?

Nowadays, this topic has a significant influence on the currently living people and the economy. Moreover, as world experience shows us, mortgages are very tightly connected with support and solutions of social regulations, explicitly providing a person or a citizen of a particular country with a modern and high-quality housing space. Providing high-quality housing contributes to the development of citizens' labor. It stimulates effective growth of a benevolent attitude towards the country, for how long the state is the main sponsor of realizing the fundamental law for citizens' housing.

It is always important to remember that the undersigned mortgage loan is a commitment for a very long time and usually one of the most significant investments in your life. Before making one of the most important financial decisions, which is based on most of the population, however, it is necessary to understand that this is a long-term financial burden that affects day-to-day activities. The author also needs to think about the future risks that come with a mortgage. Therefore, it is necessary to master as much information as possible about mortgage lending, after which it will be possible to assess its advantages and disadvantages. Nowadays, it is not easy for a client to admit the countless number of mortgage loans. Between the parameters of all banks and directly choose the best financial product for them.

2. Objectives and methodology

2.1 Objectives

The aim of this work is to compare offers of mortgage loans of selected banks of Ukraine and the Czech Republic and to define options where it is more profitable for citizens to have mortgage housing.

The partial aim is to compare the obtained results on the basis of annuity payments/calculations.

2.2 Methodology

The comparison of mortgage loan offers of selected banks is performed based on the following criteria: down payment, commissions, interest rate, annual and total cost of the mortgage loan. Providing an initial acquaintance with mortgage lending, comparison of the variability of real estate prices in the Czech Republic and Ukraine (housing prices in the period from 2010-2020), analysis and comparison of dedicated banks for mortgage lending in Ukraine and the Czech Republic (based on Ukrainian banks - Privat Bank, Oschadbank and banks of the Czech Republic - Hypoteční Banka, Česká Spořitelna), determining the direction of mortgage lending in specific countries, and in the end will be selected the best option in terms of the specified criteria.

3. Theoretical Part

3.1 Basic Definitions

In this area author should describe main mortgage concepts, which are important for the work and some of them will be used later during the implementation. Mortgage Dictionary:

- **Down Payment** - the amount borrower pays toward the purchase price of the real estate.[1]
- **Interest rate** – is the percentage that the borrower will pay in addition to the loan. [1]
- **Debtor** - a person who is in debt or under financial obligation to another [1]
- **Solvency** - the ability of the borrower to timely and fully fulfill the obligations assumed, including the obligations for a mortgage loan. [1]
- **Creditworthiness** - the likelihood of return by the borrower housing mortgage loan and payment of interest on the loan in full and within the terms established by the loan agreement. [1]
- **Credit history** - credit history is a measure of abilities to repay debts and displaying of responsibility in repaying them. [1]
- **Differentiated payments** - monthly, the borrower returns a fixed portion of the principal plus pays interest on the outstanding portion of the debt. The payment decreases every month. [1]
- **Annuity payments** - the borrower pays an equal monthly amount. It gradually extinguishes the principal debt, while the share in the annuity payment increases every month, and the amount of interest for the next month of using the loan decreases. [1]
- **Prague Interbank Offered Rate** - It is an indicator of the level of rates announced by the Czech National Bank based on interest rates of ten reference banks. PRIBOR is a measure of the price of short-term loans. [2]
- **Euro Interbank Offered Rate** – it is an abbreviation for which is the rate on the interbank market at which one bank offers other banks the deposit of a term deposit denominated in Euro. EURIBOR is the reference rate for economic and monetary union, which was established in 1999. [2]
- **Kiev Interbank Offer Rate** - is a daily indicative rate based on the interest rates at which banks offer to lend unsecured funds to other banks on the Ukrainian money market. [10]

3.2 Mortgage history of Ukraine

The very concept of a mortgage comes to us from ancient Greece, and, in turn, implies a view of ensuring the return of borrowed funds to which the mortgaged real property of the debtor-imposed restrictions in the form of restriction of ownership's transfer.

In Ukraine, traditional banking began to develop at a decent level in the middle of the 19th century, when the office of the State Commercial Bank began operating in Kiev. This organization had the main goal of "opening up of effective ways to the merchants to facilitate and expand commercial financial flows."

In the beginning of reigning Alexander II, the local banking system underwent tremendous changes. A few decades later, was created a central financial institution - the so-called State Bank. According to the charter of the State Bank of 1894, its goal was to improve financial flows, support through short-term loans, as well as provide support for local trade, industry, and agriculture, and facilitate the monetary credit system. The first implementations of the issued decrees of this institution were based on the issuance of loans for products and financial records; lending to settlements and land plots; registration of bills of exchange and other important duties; as well as the method of foreign exchange contributions. As a result of the currency reform, the State Bank also became the main bank issuing currency: its fixed gold, issued credit coupons and gold coins. Already at that time, he ran many savings banks created for low-income residents.

A little later, the State Bank was no longer the only option for issuing a loan. Since a significant share of the property of individuals was collected by agricultural zones, a bank appeared for the Peasants, and then for the Nobles. A typical and widespread way of obtaining cheap loans was the so-called mutual credit societies. Each member of such a society, having contributed his share, received the right to a preferential loan in the amount of a tenfold contribution. Additional income was obtained by the society due to the acceptance of real estate and securities as collateral, the execution of commissions, and so on.

Over time, the banking system began to show a well-organized mechanism and could satisfy the needs of any customers. But after the revolution, the Soviet government laid its hands on the funds of all banks, both state and private..

3.3 Mortgage history of Czech Republic

The beginning of mortgage loans dates to the 18th century in the Slezsko region. The understanding of the mortgage loan has evolved in relation to the economic growth of the kingdom. Already in the middle of the 19th century, the Mortgage Bank was founded - the first bank based on the provision of affordable loans secured by the estate. Gradually, mortgages became a stable part of the trading market and acquired a subsequent formation after the First World War. Even then, the market was dominated by savings institutions, as well as state monetary institutions formed by regional administrations with the aim of providing long-term cheap loans to increase profits. In addition, municipal economic institutions, which focused their own interests on providing for less well-off citizens, played an important role. This was primarily done to support farmers and individual entrepreneurs. After the end of World War II, types of government assistance arose that resemble mortgage services. However, the coming of the communists to power announced the end of mortgage loans for more than 40 years. The cruel situation of that time was when the current government confiscated their property from the owners or forbade them to live in them but did not release them from the obligation to repay old loans. Despite the savagery, many people, after the war, paid off mortgage debts for real estate that they could not use or did not own at all. In the early 1990s - high interest rates exceeded 15% per annum, which was a very unfavorable circumstance for debtors, but in truth, the real explosion of mortgage lending came at the turn of the century, when interest rates fell sharply, thanks to amendments to the Income Tax Law at the end 90s. Further declines in interest rates in the 2000s contributed to a sharp rise in mortgage lending, thanks to a record fall in interest rates below 2%.

3.4 How does mortgage work

Perhaps the only way to get relatively decent housing today is a mortgage loan. In fact, a Mortgage loan means taking money from a bank with an interest rate, and the guarantee of returning the money is a pledge of specific real estate. However, it is also a real tool that contributes to the development and searches for new jobs, increasing the construction volume and pace. Mortgage lending can also be invoked to purchase holiday property, property for rent, land for resale, or any other purpose. The terms of the mortgage loan depend on the chosen bank, while each bank has its criteria, such as interest rates, down payments, and so on. If the borrower stops paying the monthly mortgage payment, the creditor bank will be forced to charge fines and sanctions following the loan agreement. Subsequently, after the expiration of the term specified in the agreement, the creditor applies to the court to recover the subject of the pledge.

3.4.1 Primary and Secondary types of housing

Primary housing - is real estate for which title has not yet been established. Building firm or the government act as traders in the primary housing market. Primary housing is acquired either with participation in shared construction in the process of building a house, or in finished new buildings with apartments that are not registered in the state register of property. It is worth to consider, that the cost per square meter is minimal at the initial stage of building and grows gradually as it is completed.

Secondary housing - is real estate that is already owned by someone. Primary housing becomes secondary from the moment of receipt of the certificate of state registration. If the developer, for some reason, does not sell the apartment before the completion of construction and formalizes the ownership of himself for the purpose of its further sale, this apartment will already have the status of secondary housing. In addition, the sellers of real estate in the secondary market are not only ordinary citizens and the state, but also private individuals.

Advantages and Disadvantages:

1. *Primary housing advantages*¹

- The value of a real estate is determined by the market and the risks borne by the buyer. The higher the risks, the lower the cost. It cannot be said that the risks of equity participation in the construction of an apartment building are excessive, nevertheless they do exist.
- Opportunity to invest for profitability - equity participation in construction is an opportunity to make money on the resale of an apartment: during construction, the price of real estate rises significantly.

2. *Primary housing disadvantages*²

- Deadline shift - is normal practice in the capital construction industry.
- Uncertainty about the quality of the living space - whether there will be even walls and ceilings or whether the building will collapse by accident before being put into operation.

3. *Secondary housing advantages*³

- Large price differentiation. It is in the secondary market that you can find the apartment that suits you best in all respects, including the financial side.
- The ability to minimize the risk of losing funds in the event of an unfair transaction, as well as great chances for a refund of funds by a court decision.

¹ Primary housing advantages [online]. Available at: <https://dd.net.ua/pervichnyiy-ryinok-zhilya-cto-eto-takoe/>

² Primary housing disadvantages [online]. Available at: <https://dd.net.ua/pervichnyiy-ryinok-zhilya-cto-eto-takoe/>

³ Secondary housing advantages [online]. Available at: <https://dd.net.ua/vtorichnyiy-ryinok-nedvizhimosti/>

4. Secondary housing disadvantages ⁴

Disadvantages associated with risks that can be present:

- with the legality of the transfer of property rights to the present owner, as well as to the previous owners.
- with the rights to use the living quarters of other people who are not the owners, but who lives or have previously lived in this housing.

But all these risks can be minimized to almost zero if the legal cleanliness of the housing is checked as thoroughly as possible.

3.4.2 Average sales of flats

According to author's own research, have been calculated average prices of different types of flats, in different areas of Ukraine in 2019. Based on the formula: "PPOSM * Sm² = x"; where: PPOSM – price per one square meter; s - living space.

Table 1. Average prices of flats in Ukraine.

City	1-room apartment/~45m ²	2- room apartment/~65m ²	3- room apartment/~90m ²
Kiev	~1 066 500 ₴	~1 540 500 ₴	~2 133 000 ₴
Odessa	~796 500 ₴	~1 150 500 ₴	~1 593 000 ₴
L'viv	~688 500 ₴	~994 500 ₴	~1 377 000 ₴

Source: own processing

Meanwhile using the same formula for Czech Republic we have:

Table 2. Average prices of flats in Czech Republic.

Region	1-room apartment/~45m ²	2- room apartment/~65m ²	3- room apartment/~90m ²
Prague	~3 345 240 CZK	~4 832 013 CZK	~6 690 480 CZK
Plzeňský Region	~1 060 133 CZK	~1 531 303 CZK	~2 120 265 CZK
Olomoucký Region	~961 403 CZK	~1 388 693 CZK	~1 922 805 CZK

Source: own processing

⁴ Secondary housing disadvantages [online]. Available at: <https://dd.net.ua/vtorichnyiy-ryinok-nedvizhimosti/>

Of course, real estate prices can vary depending on the location, is it a new building or an old one, and from different private developers etc.

3.4.3 Interest rate

Since the loan rate is interest that is paid on top of the loan, there are two types of rates:

- **Fixed interest rate** - system of calculating of interest, which has a constant interest rate. Loan payments are calculated based on the same interest throughout the period.⁵
- **Floating interest rate** - system of calculating interest rate, which is connected to any market indicator.⁶

“Changes in interest rates”

The fixed interest rate can only change by the terms of the loan agreement or by the parties' agreement. Unless otherwise provided by the loan agreement, the interest rate can be changed only when the borrower signs an additional document that changes the loan agreement's terms.

The floating rate usually consists of two parts, constant and variable. The first remains unchanged throughout the entire loan repayment period, and the second is related to the market indicator. In loans with a floating rate, interest is calculated at the key rate, to which the variance is added - the spread. When the market rate changes, the interest that the borrower pays on loan also changes.

3.4.4 Refinancing

In a mortgage glossary exists such a process as refinancing. This banking service provides an opportunity to take a new loan to repay the already available loan. The client can refinance in the same bank where the loan was carried out, but most of the time bank refuses. Therefore, as a rule, borrowers turn to another bank. Refinancing makes sense when there is an opportunity to save money, specifically to reduce monthly payments or the loan term.

If the client has any loan, this is a reason to calculate everything and understand if there is any benefit in refinancing the loan. With regards to mortgages, there is a chance to reduce the burden on the budget significantly. At the same time, refinancing is not charity. It is beneficial for the bank to refinance loans that fit its requirements.

There are several points to get refinancing of a credit:⁷

- Determining of loan conditions - data such as interest rate, monthly payment amount, and the total amount of interest overpayment and personal consultation with the bank are required.

⁵ Fixed interest rate [online]. Available at: <https://meduza.io/slides/chem-ddu-otlichaetsya-ot-egrp-chto-za-annuitetnye-platezhi>

⁶ Floating interest rate [online]. Available at: <https://meduza.io/slides/chem-ddu-otlichaetsya-ot-egrp-chto-za-annuitetnye-platezhi>

⁷ Getting of refinancing [online]. Available at: <https://fincult.info/article/refinansirovanie-kredita/>

- Determining a suitable bank - checking for the presence of a license, as well as determining the restrictions of banks on the availability of terms and amounts.
- Determination of third-party costs - for example re-registration of collateral.
- Providing documents - passport / identity card, income document, etc. (different banks have their own conditions).

3.4.5 Credit Risk

Banking activities are not uncommon with many types of risks, since errors in the management and measurement of risks can lead to the deprivation of banking licenses, or even lead the bank to bankruptcy. In practice, there are many types of risks that banks could face: liquidity risk, credit risk, operational risk, risk of changes in credit rates, but one of the main ones is credit risk.

Credit risk refers to the likelihood that a debtor will not pay agreed financial amounts. In a broad sense, credit risk is the likelihood of events affecting a debtor's condition to repay an obligation.

There are two groups of methods for the initial evaluation of credit risks: quantitative and qualitative.⁸

- Quantitative risk evaluation involves determining the degree of risk.
- Qualitative risk evaluation consists in identification of risk factors.

Given evaluation methods have two types of calculation for banking risks – “complex” and “private”. “Complex” risk is used with the general probability of loss of bank finances for all types of activities, while “Private” is used when receiving losses for a specific operation, measured empirically using the selected methods.⁹ In banking area, these calculations can be provided with the statistical, analytical, and expert ways. The statistical analysis includes a series of data that are investigated over a large time interval. The expert analysis is based on the collection of reports from professional banking specialists, after which a certain rating is created. The analytical analysis is the study of specific areas of risk using calculation methods. Analysis of banking risks is a process aimed at reducing losses and improving the financial position of a bank. Also, this process provides verification and calculation of the classification of receivables by risk levels, as well as the size of the required bank reserve. The risk management department analyzes and makes a decision that is aimed at increasing the approximation of a positive result.

⁸ Batkovskiy A.M, Kravchuk P.V, Mingaliev K.N., Styazhkin A.N. (2019) Russian Journal of Innovation Economics „Analysis of financial condition of innovation-active enterprises“.

⁹ Complex and Private calculations [online]. Available at: <https://www.sravni.ru/enciklopediya/info/bankovskie-riski/>

Table 3. Method of evaluation risks

	Advantages	Disadvantages
Qualitative methods	Probability evaluation of qualitative risks.	The subjectivity of the financial evaluation of enterprise risks, the conclusion of the expert opinion.
Quantitative methods	Independent conclusion of certain risks, creation of a template of changing a specific risk, which is based on statistical data.	The difficulty of the numerical representation of qualitative risks

Source: the data based on¹⁰

¹⁰ Table of evaluation risks [online]. Available at: <https://finzz.ru/finansovyy-risk-predpriyatiya-klassifikaciya-metody-ocenka-upravlenie>

3.5 Types of mortgage loans

A credit loan means money provided by a lender to a borrower based on a loan agreement. Depending on the purpose, credit loans can be divided into two groups:

1. *Specific-purpose loan*

Specific-purpose loan is provided for a specific agreed purpose in advance. Loan for the purchase of goods (household appliances, electronics). Often, a loan is issued in a trading organization, where the bank's loan officer is located, since the loan amount is small. Also, this type of mortgage loan is intended for subsequent things, such as:¹¹

Car loan - issued for the purchase of a car by an individual.

Mortgage loan - issued for the purchase of real estate (apartments, houses, cottages, etc.)

2. *Non-purpose loan*

Non-purpose loan is a loan that a bank issues to a client without the latter specifying a specific purpose for spending the loan funds. Such loans are also called consumer loans or loans for urgent needs (training, treatment, repair, or purchase of consumer goods).

3.5.1 Legal term of credit

Based on the Ukrainian legislation according to Commercial Code of Ukraine:¹²

1. In the field of management, banking, commercial, leasing, mortgage and other forms of credit can be used.

2. Loans provided by banks differ in terms of use:

- (short-term - up to 1 year)
- (medium-term - up to 3 years)
- (long-term - over 3 years)

And also, the way of providing; degree of risk; delivery methods; maturity dates; other terms of grant, use or redemption.

¹¹ PYKHTIN S., ALEKSEEVA D. (2018) Lending operations: bank lending. p. 28.

¹² Terms of credit [online]. Available at: <https://zakon.rada.gov.ua/laws/show/436-15?lang=en#Text>

Meanwhile, in the Czech Republic, mortgage loan terms are slightly different:¹³

- short-term mortgage loan (up to 1 year),
- medium-term mortgage loan (from 1 to 4 years),
- long-term mortgage loan (more than 4 years).

The first two types of loans are the least used, for one simple reason, they are often designed to renovate and renovate existing real estate.

3.5.2 Types of debtors

Based on the processed information, debtors can be divided into several categories:¹⁴

- Individual,
- Entity.

Subsequently, these two categories can be divided into sub-categories:

- entrepreneur,
- non-entrepreneur.

Ultimately, there are four options associated with different degrees of risk:

- individual entrepreneur,
- legal entity - entrepreneur,
- legal entity - non-entrepreneur,
- natural person - non-entrepreneur.

¹³ Pavelka F. (1995). *Hypoteční úvěry*. p. 80.

¹⁴ Pavelka F. (1995). *Hypoteční úvěry*. p. 80.

3.6. How to get mortgage in Ukraine

To date, to obtain a mortgage loan, there are several conditions that must be met. First, the borrower must be: ¹⁵

- a citizen of Ukraine
- over 21 years old
- have a good credit history
- have official employment and have worked at the last place of work for at least one year.

The availability of higher education can increase the chances of loan approval, and a residence permit in the same city where the property will be purchased can give privileges in obtaining a mortgage loan. Besides, apart from the bank itself, a mortgage loan can also be obtained from a construction company. Due to high-interest rates and low monthly average wages, the bank may require confirmation of the official income of not only the borrower himself but also his family members. In case one family member is unable to pay the monthly payment, then the responsibility will pass to the second family member. Often this is indicated in the clauses of the contract.

For example, to buy an apartment worth 1 million hryvnias, the borrower must have an official income of about 25 thousand hryvnias. While according to the LLC "MinfinMedia" (Ukrainian portal of finance and investments), the maximum salary, which is inherent in the capital of Kyiv, is 17 and a half thousand hryvnias. ¹⁶

In addition to a considerable number of conditions, the borrower needs to prepare the necessary package of documents, which includes: ¹⁷

- Passport and Taxpayer Identification Number
- Certified copy of the workbook
- Income statement
- Marriage certificate
- Diploma of Higher Education
- Technical passport for the car (if any)

A standard list of documents is provided here, since only a bank can issue a more detailed list. Needless to say, that the conditions and list of documents may vary depending on the bank.

¹⁵ Conditions of obtaining mortgage [online]. Available at: <https://finance.ua/mortgage>

¹⁶ Average monthly salary in Ukraine [online]. Available at: <https://index.minfin.com.ua/ua/labour/salary/average/>

¹⁷ Additional conditions [online]. Available at: <https://finance.ua/mortgage>

3.7. How to get mortgage in Czech Republic

The primary conditions are determined by the rules of the Czech National Bank. However, the bank every year increases the number of possible criteria to have the maximum opportunity and confidence that the borrower will repay the loan. In general, some types of conditions exist in all banks. However, each has its evaluation methods. For example, based on a borrower with a good credit history and even as close as possible to a particular list of criteria, some banks may provide a refusal according to personal opinion. At the same time, other banks will be able to provide mortgages without any problems..

1. “Age”

The minimum age for obtaining a mortgage is 18 years. The odds often depend on the bank's valuation methods. Therefore, the possibility of obtaining a mortgage is privileged to the able-bodied population.

There is a certain age period up to which a mortgage can be borrowed. Usually, this is under the age of 67. If a borrower at the age of ~ 60 is going to take out a mortgage loan, then either the bank will be refused or will only offer a quick form of loan repayment.¹⁸

2. “Income”

According to the Czech National Bank the monthly installment cannot exceed 50% of the net monthly income. But based on data from the Czech Statistical Office, the average monthly salary in the Czech Republic is about 35 thousand CZK. Often, this is more than enough to pay off a mortgage loan.¹⁹

The main income criteria recognized by banks on:²⁰

- Wages
- Business income,
- Various pensions (old age, disability, widow, or orphan pensions)
- Income from current or future rent,

In any case, the bank is obliged to provide information on income. Employees usually only need to prove their income, while entrepreneurs are required to submit tax returns.

¹⁸ Conditions of obtaining mortgage [online]. Available at: <https://www.banky.cz/>

¹⁹ Wages and Labour [online]. Available at: https://www.czso.cz/csu/czso/labour_and_earnings_ekon

²⁰ Conditions of obtaining mortgage [online]. Available at: <https://www.banky.cz/>

3. “Creditworthiness”

Creditworthiness is an essential criterion for obtaining a mortgage. This aspect serves as an assessment for the bank whether the borrower will be able to repay the mortgage loan.²¹

Information about the creditworthiness of the borrower and other indicators of its activity is considered when determining the category of loan quality and the size of the estimated reserve for possible loan losses.

4. “Debtor Registers”

In the Czech system, there are certain registers of debtors, which the bank checks on its own:²²

- BRKI (Bank register of customer information) - register in which every individual who has a loan agreement with a bank or a construction company, current agreement, or agreements concluded in the past is located.
- NRKI (Non-bank register of customer information) - contains this register and data on legal entities.
- SOLUS (Association for Leasing and Consumer Credit Protection) - register that is also used, for example, by telephone operators, energy suppliers, insurance companies, etc.

The bank will issue a mortgage only if major offenses are not recorded in the register.

5. “Residence in the Czech Republic”

Foreigners in the Czech Republic to obtain a mortgage loan are required:

- have temporary residence if foreigners are citizens of another state of the European Union
- have permanent residence if foreigners are citizens of another country.

6. “Value of collateral”

The property's value that serves as collateral in obtaining a mortgage loan is determined by the bank's internal or external appraiser.²³ Also, this is a form of responsibility that ensures the fulfillment of the obligation by another person (the guarantor) by taking responsibility for repaying the debtor's debt. If this debtor is unable to repay the debt subsequently, the creditor may demand its performance from the surety or enforce the obligation of both persons at the same time.

²¹ Creditworthiness [online]. Available at: <https://www.investopedia.com/terms/c/credit-worthiness.asp>

²² Debtor's registr [online]. Available at: <https://www.banky.cz/>

²³ Collateral value [online]. Available at: <https://www.investopedia.com/terms/collateral-value.asp>

3.8. Negative factors affecting on obtaining mortgage

According to the previous information the author made own research and revealed some main negative criteria which affecting on obtaining of mortgage loan.

a) “Bad credit history”

This is one of the main reasons for the bank's refusal to receive a loan. Before applying for a mortgage, the client should personally familiarize himself with the credit history.

Contact the bank, after consulting with an employee, or order a paid bank service, thanks to which credit finance will help to indicate and solve minor problems, if any.

b) “Legal factors”

- Various kinds of fines
- Non-payment of alimony
- Non-payment of utility bills
- Convictions

c) “Human factors”

- Unsatisfactory mental state
- Lack of information support
- Decreased attention
- External factors

d) “Technical factors”

At this point, it is worth noting the care when registering a mortgage. Incorrectly specified data about the client or incorrectly specified data about the workplace can also affect the bank's final decision.

3.9. Mortgage Insurance

3.9.1 Mortgage Insurance in Ukraine

Mortgage insurance - is an insurance of the mortgage subject against the risks of accidental destruction, accidental damage, or damage and is mandatory. The law also provides that the subject of the mortgage must be insured for its full value. The total cost of the mortgage subject is calculated based on its actual value, which is determined by the subject of the appraisal activity.

The insurer bears the issue of compensation for losses within the limits of the amounts determined by an agreement. List of mortgage insurance risks: ²⁴

- natural disaster
- falling of poles, lighting masts, other structures, except for cases arising from their improper installation or mounting;
- illegal actions of third parties: hooliganism, theft, robbery, robbery

According to Order No. 358, not every mortgage item specified in the Law of Ukraine on Mortgage can be insured. The following objects are not subject to insurance: ²⁵

- property rights, rights to lease or use real estate
- real estate, which will become the property of the mortgager after the conclusion of the mortgage agreement
- property located in a war zone

3.9.2 Mortgage Insurance in Czech Republic

Based on Act 190/2004 Coll. The pledged property must be insured. Accordingly, the insured property must be located on the Czech Republic territory or a member state of the European Union. Since insurance is one of the main reasons for obtaining a mortgage loan, this process is mandatory for all banks. Insurance of mortgaged real estate protects against risks such as natural disasters (fire, explosion, or plane crash). If the pledged property was not insured and was destroyed, the bank loses the guarantee that the borrower will repay the loan. Real estate insurance is also in the property owner's interests in the event of such a problem. The borrower is also left with nothing. The insured amount must be at least equal to the amount of the loan provided so that in the event of an insured event, it would be possible to fully reimburse the number of expenses necessary to restore the original condition of the property.

²⁴ Insurances risks [online]. Available at: <https://zakon.rada.gov.ua/laws/show/358-2011-%D0%BF#Text>

²⁵ Objects which are not to be insured [online]. Available at: <https://zakon.rada.gov.ua/laws/show/358-2011-%D0%BF#Text>

4 Practical Part

4.1 Analysis of the dynamics of housing prices

In today's world, many factors affect the mortgage market, so it is impossible to draw a specific conclusion about what exactly affects it. Since the mortgage market is very dynamic, it can be affected by changes in interest rates, financial crises, and increased competition in the market among loan providers.

If, for example, before quarantine, banks could willingly issue mortgages, then at present, doubts will be very high.

4.2 Dynamic of housing prices of Ukraine in capital and province

Kyiv is one of the largest cities in Europe. It is the administrative, economic, scientific, cultural, and educational center of Ukraine. Kyiv is dynamically developing and restoring; therefore, it attracts more and more tourists. Based on state data, the average population in 2020 is 2,964,770 residents. First, the author should analyze the behavior of housing prices in the markets, how the situation can and could change, and have a general picture. Since the Ukrainian government does not have publicly available information about average housing prices or per square meter of building, the author is forced to refer to the Informational and Analytical Portal of Ukraine with his statistics. Based on this, an analysis was carried out, and the approximate average cost of housing in the capital of Ukraine was derived. Further work will also present a similar analysis of another settlement in Ukraine.

Based on the formula: "PPOSМ * Sm² = x"; where: PPOSМ – price per one square meter; s - living space. This formula will also be used in further work.

Table 4. Dynamics of housing prices in Kiev.

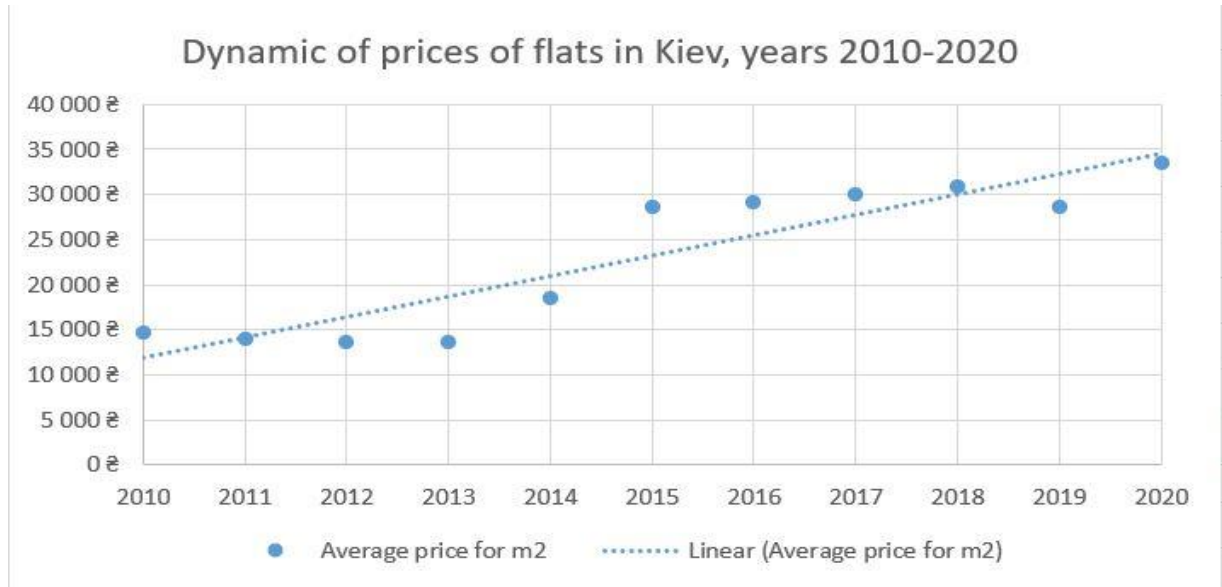
Year	Average price for m2	1room apartment/45m2	2room apartment/65m2	3room apartment/90m2
2020	33 500 ₴	1 507 508 ₴	2 177 511 ₴	3 015 015 ₴
2019	28 692 ₴	1 291 121 ₴	1 864 953 ₴	2 582 243 ₴
2018	30 877 ₴	1 367 411 ₴	1 975 150 ₴	2 734 823 ₴
2017	29 940 ₴	1 347 300 ₴	1 946 100 ₴	2 694 600 ₴
2016	29 161 ₴	1 312 245 ₴	1 845 465 ₴	2 624 490 ₴
2015	28 677 ₴	1 290 450 ₴	1 863 983 ₴	2 580 900 ₴
2014	18 523 ₴	833 531 ₴	1 203 990 ₴	1 667 063 ₴
2013	13 587 ₴	611 426 ₴	883 171 ₴	1 222 853 ₴
2012	13 635 ₴	613 594 ₴	886 302 ₴	1 227 188 ₴
2011	14 006 ₴	630 259 ₴	910 374 ₴	1 260 518 ₴
2010	14 606 ₴	657 253 ₴	949 379 ₴	1 314 525 ₴

Source: own data processing, based on²⁶

²⁶ Dynamics of housing prices [online]. Available at: <http://domik.ua/nedvizhimost/dinamika-cen>

The author also provided a visual representation of changes in housing prices in the form of the trendline.

Figure 1.. Trend line (Dynamic of prices of flats in Kiev).



4.2.1 Dynamic of prices of housing in province

Lvov (L'viv) - a city of regional subordination, located in the western part of Ukraine, cultural, scientific, and educational center of the country. Based on the official website of the city of Lvov the average population in the year 2019 is approximately 754,521 thousand residents.²⁷

Using the same formula author got the average results of dynamic of housing prices in Lvov.

Table 5. Dynamic of housing prices in Lvov.

Year	Average price for m2	1room apartment/45m2	2room apartment/65m2	3room apartment/90m2
2020	23 183 €	1 043 235 €	1 506 895 €	2 086 470 €
2019	21 815 €	981 675 €	1 417 975 €	1 963 350 €
2018	21 665 €	974 925 €	1 408 225 €	1 949 850 €
2017	21 737 €	978 165 €	1 412 905 €	1 956 330 €
2016	23 769 €	1 069 605 €	1 544 985 €	2 139 210 €
2015	23 045 €	1 037 025 €	1 497 925 €	2 074 050 €
2014	11 328 €	509 760 €	736 320 €	1 019 520 €
2013	8 504 €	382 680 €	552 760 €	765 360 €
2012	9 601 €	432 045 €	624 065 €	864 090 €
2011	8 822 €	396 990 €	573 430 €	793 980 €

Source: own data processing, based on²⁸

²⁷ Population of Lvov [online]. Available at: www.032.ua

²⁸ Dynamics of housing prices [online]. Available at: <http://domik.ua/nedvizhimost/dinamika-cen>

The author also provided a visual representation of changes in housing prices in the form of the trendline.

Figure 2.. Trend line (Dynamic of prices of flats in Lvov).



Based on the first part of the analysis, it can be determined that the specific rise in prices per square meter has increased minimally by one and a half times since 2014. According to the State Statistics Service, the volume of construction work performed in Ukraine in 2014 decreased by 19.3%.

One of the main reasons was the political problem between Russia and Ukraine, by which citizens began to invest their national currency in real estate.

According to the results of the first five months of 2014, the minimum number of transactions in the real estate market was recorded in Kyiv - 5.2 thousand (1965 thousand in the secondary market and 3266 in the primary). With the beginning of active hostilities on the Maidan in January 2014, the number of transactions in the capital's real estate market fell by 30.7% (compared to December 2013) - to 1,414 transactions. March proved that the real estate market situation could be even worse - only 688 housing transactions were carried out in the capital. For comparison, in December 2013, the number of transactions in the capital's housing market exceeded this number by almost three times - 1.3 thousand, and in the pre-crisis time, the Ministry of Justice recorded up to 3.5 thousand transactions monthly.²⁹

²⁹ Cause for the rise in prices [online]. Available at: <https://news.dtkr.ua/ru/society/real-estate/32096>

4.2.2 Dynamic of prices of housing of Czech Republic in capital and province

Prague is the capital and at the same time the largest city of the Czech Republic. It is located in the center of the Czech Republic on the Vltava River. Prague is the seat of a large part of state institutions and many other organizations and companies. According to the data of the Czech Statistical Office, the population of Prague is about 1,331,464 residents.³⁰

As in the previous examples, the author uses a formula to show the average prices of housing in Prague.

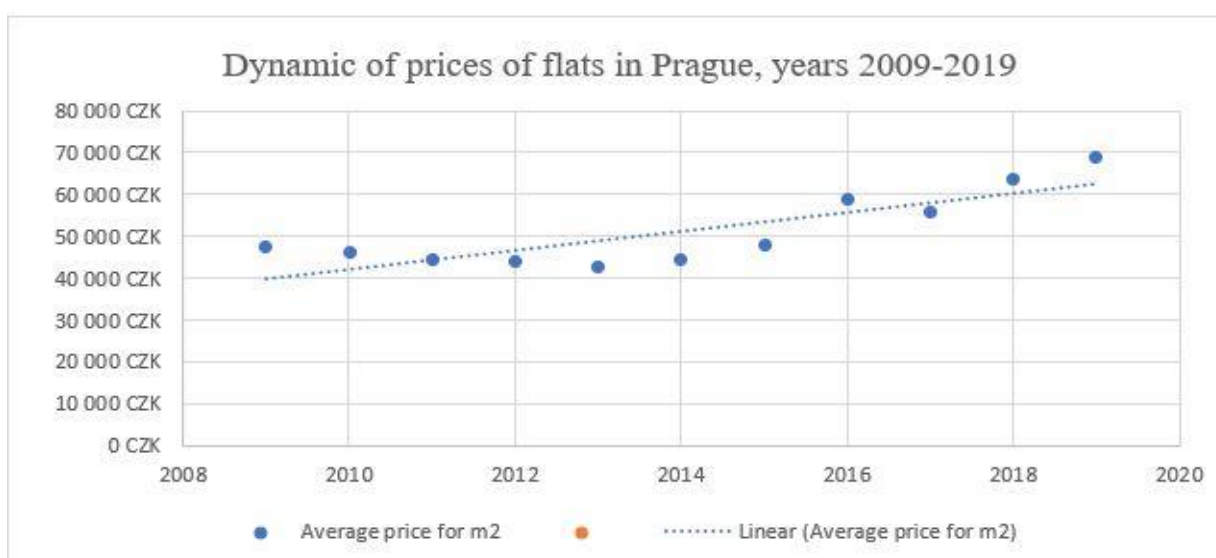
Table 6. Dynamic of housing prices in Prague.

Year	Average price for m2	1room apartment/45m2	2room apartment/65m2	3room apartment/90m2
2019	69 061 CZK	3 107 745 CZK	4 488 965 CZK	6 215 490 CZK
2018	63 736 CZK	2 868 120 CZK	4 142 840 CZK	5 736 240 CZK
2017	56 039 CZK	2 521 755 CZK	3 642 535 CZK	5 043 510 CZK
2016	58 703 CZK	2 641 635 CZK	3 815 695 CZK	5 283 270 CZK
2015	47 765 CZK	2 149 425 CZK	3 104 725 CZK	4 298 850 CZK
2014	44 635 CZK	2 008 575 CZK	2 901 275 CZK	4 017 150 CZK
2013	42 798 CZK	1 925 910 CZK	2 781 870 CZK	3 851 820 CZK
2012	43 863 CZK	1 973 835 CZK	2 851 095 CZK	3 947 670 CZK
2011	44 619 CZK	2 007 855 CZK	2 900 235 CZK	4 015 710 CZK
2010	46 021 CZK	2 070 945 CZK	2 991 365 CZK	4 141 890 CZK
2009	47 406 CZK	2 133 270 CZK	3 081 390 CZK	4 266 540 CZK

Source: own data processing, based on³¹

The author also provided a visual representation of changes in housing prices in the form of the trendline.

Figure 3. Trend line (Dynamic of prices of flats in Prague).



³⁰ Pocet obyvatel [online]. Available at: <https://www.czso.cz/csu/xp/pocet-obyvatel>

³¹ Ceny nemovitosti [online]. Available at: <https://www.czso.cz/csu/czso/ceny-sledovanych-druhu-nemovitosti>

4.2.3 Dynamic of prices of housing in province

Plzeň is an official town in the western Czech Republic and the capital of the Pilsen region. It is located at the confluence of the Radbuza, Uhlava, Uslav and Mzhe rivers, from which the Berounka River originates. The population of the city is about 174,842 residents.³²

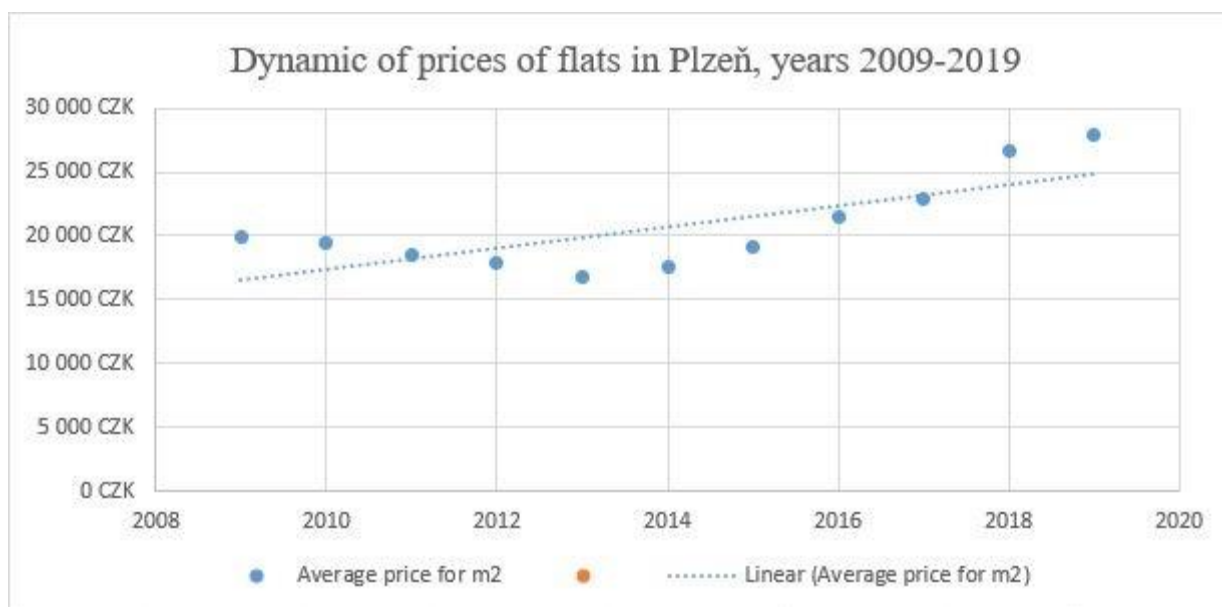
Table 7. Dynamic of housing prices in Plzeň.

Year	Average price for m2	1room apartment/45m2	2room apartment/65m2	3room apartment/90m2
2019	27 914 CZK	1 256 130 CZK	1 814 410 CZK	2 512 260 CZK
2018	26 706 CZK	1 201 770 CZK	1 735 890 CZK	2 403 540 CZK
2017	22 852 CZK	1 028 340 CZK	1 485 380 CZK	2 056 680 CZK
2016	21 490 CZK	967 050 CZK	1 396 850 CZK	1 934 100 CZK
2015	19 157 CZK	862 065 CZK	1 245 205 CZK	1 724 130 CZK
2014	17 572 CZK	790 740 CZK	1 142 180 CZK	1 581 480 CZK
2013	16 854 CZK	758 430 CZK	1 095 510 CZK	1 516 860 CZK
2012	17 948 CZK	807 660 CZK	1 166 620 CZK	1 615 320 CZK
2011	18 552 CZK	834 840 CZK	1 205 880 CZK	1 669 680 CZK
2010	19 379 CZK	872 055 CZK	1 259 635 CZK	1 744 110 CZK
2009	19 879 CZK	894 555 CZK	1 292 135 CZK	1 789 110 CZK

Source: own data processing, based on³³

The author also provided a visual representation of changes in housing prices in the form of the trendline.

Figure 4. Trend line (Dynamic of prices of flats in Plzeň).



This analysis shows that real estate in the Czech Republic increases in value as it is claimed. However, the most significant increase can be seen from 2015 to 2016. One of the main factors is human labor due to the increase since this increase in wages by increasing property prices.

³² Pocet obyvatel [online]. Available at: <https://www.czso.cz/csu/xp/pocet-obyvatel>

³³ Ceny nemovitosti [online]. Available at: <https://www.czso.cz/csu/czso/ceny-sledovanych-druhu-nemovitosti>

In addition to human labor, the rise in prices for materials, transportation, and the complication of various rules increase the price of obtaining real estate.

Housing in large cities is much more priority for most people since it has more opportunities for employment, study, as well as high wages. In this regard, many foreigners generate demand with fewer offers, which causes real estate growth.

4.3 Analysis of mortgage loans according to dedicated banks

Basic information and history of each bank:



- a) **ПриватБанк PrivatBank** was founded in 1992, it is a commercial bank (which became state-owned), and it is the leader of the Ukrainian banking market. PrivatBank is one of the most innovative banks in the world. For example, more than ten years ago, the bank became one of the first in the world to use one-time SMS passwords. The latest innovations that have received recognition around the world include products such as a mini payment terminal, access to the Internet bank via a QR code, online cash collection, as well as dozens of different mobile applications.³⁴



- b) **ОЩАДБАНК Oschadbank** is a Ukrainian commercial bank, 100% of whose shares belong to the state. It is the oldest Ukrainian bank, whose history dates to the savings banks that began operating in Ukraine in the 19th century. The National Bank registered it on December 31, 1991. Currently, Oschadbank is the second-largest financial institution in the Ukrainian market, with the most significant number of branches.³⁵

³⁴ Privat bank about [online]. Available at: <https://privatbank.ua/ru/about>

³⁵ Oschadbank about [online]. Available at: <https://www.oschadbank.ua/ua/about>



- c) **Česká spořitelna** is the largest bank in the Czech Republic. It was founded in 1825. The bank has a long tradition in the Czech market. The bank provides services to individuals, small and medium enterprises, cities, and municipalities. Many of the bank's products and services rank first on the Czech market. It has been part of the Central European Erste Group since 2000.³⁶



- d) **Hypoteční banka** is the bank that providing mortgage loans to individuals. The bank was founded on January 10, 1991, under the name “Agrobanka” in Hradec Králové. Initially, it acted as a universal commercial bank of a regional character. In 1995, the bank moved its headquarters from Hradec Kralove to Prague.³⁷

The author will take the primary housing market as a main.

1. The first in the calculation will be a “Privatebank”, based on the dynamics of real estate prices. The author uses a simple option with a one-room apartment worth 1,507,508 million hryvnias. According to the annuity payment formula, the author calculates the monthly installment, the amount of total interest, and how much the client will overpay to the bank.

$$A = K * S,$$

Where: A - monthly annuity payment, K - annuity coefficient, S is the loan amount.

The annuity rate is calculated using the following formula:

$$K = i * (1 + i)^n / ((1 + i)^n - 1)$$

Where: i - monthly interest rate on the loan (= annual rate / 12 months), n - the number of periods during which the loan is paid.

³⁶ Česká Spořitelna o nas [online]. Available at: <https://www.csas.cz/cs/o-nas>

³⁷ Hypoteční banka o nas [online]. Available at: <https://www.hypotecnibanka.cz/o-bance/>

According to the “Privatbank” interest rate = 7%, down payment = 25% author made analysis of annuity payments for 20 years.³⁸

Table 8. Analysis of annuity payments (Privatbank).

Mortgage Loan	1 507 508 ₴	After (DP)	1 130 631 ₴
Interest Rate	7%		
Term of loan/months	240		
Down Payment (DP)	25%		376 877 ₴

Annuity Payment/Monthly	Debt's percent	
8 766 ₴	Total interest amount	
Total Annuity payments	973 154 ₴	
2 103 785 ₴		

Source: own processing

According to the calculated data, the amount of the annuity contribution equal 8,766 hryvnias, and the total annuity contribution at the end of the term equals 2,103,785 hryvnias; also total interest amount is 973,154 hryvnias.

- The second calculation will be provided with the data of “Oschadbank”. Based on real estate price dynamics, the author uses a simple option with a one-room apartment worth 1,507,508 million hryvnias. According to the annuity payment formula, the author calculates the monthly installment, the amount of total interest, and how much the client will overpay to the bank. According to the “Oschadbank” interest rate = 14%, down payment = 30% the author analyzed annuity payments for 20 years.³⁹

Table 9. Analysis of annuity payments (Oschadbank).

Mortgage Loan	1 507 508 ₴	After (DP)	1 055 256 ₴
Interest Rate	14%		
Term of loan/months	240		
Down Payment (DP)	30%		452 252 ₴

Annuity Payment/Monthly	Debt's percent	
13 115 ₴	Total interest amount	
Total Annuity payments	2 092 263 ₴	
3 147 518 ₴		

Source: own processing

³⁸ Interest rate Privatbank [online]. Available at: <https://privatbank.ua/>

³⁹ Interest rate Oschadbank [online]. Available at: <https://www.oschadbank.ua>

Based on the second calculation option, you can observe a vast difference in the ratio of costs and how much money the client will overpay depending on his choice.

- The third calculation will be already based on the Czech market. According to the data of Česká Spořitelna respectively, the author will use the calculated prices from the previous analysis “dynamics of real estate growth in the Czech Republic”, and in the same way will be provided the analysis of annuity payments. The average price for a one-room apartment is 3,107,745 million CZK. Referring to “Česká spořitelna” interest rate = 2,84%, down payment = 10% author made analysis of annuity payments for 20 years.⁴⁰

Table 10. Analysis of annuity payments (Česká spořitelna)

Mortgage Loan	3 107 745 CZK	After (DP)	2 796 971 CZK
Interest Rate	2,84%		
Term of loan/months	240		
Down Payment (DP)	10%		310 775 CZK
Annuity Payment/Monthly		Debt's percent	
15 289 CZK		Total interest amount	
Total Annuity payments			
3 669 327 CZK		872 357 CZK	

Source: own processing

- And the fourth calculation based on the data of Hypoteční banka, according to the same average price for a one-room apartment 3,107,745 CZK. Referring to “Hypoteční banka” interest rate = 2,89%, down payment = 30% author made analysis of annuity payments for 20 years.⁴¹

Table 11. Analysis of annuity payments (Hypoteční banka).

Mortgage Loan	3 107 745 CZK	After (DP)	2 796 971 CZK
Interest Rate	2,89%		
Term of loan/months	240		
Down Payment (DP)	30%		932 324 CZK
Annuity Payment/Monthly		Debt's percent	
11 945 CZK		Total interest amount	
Total Annuity payments			
2 866 895 CZK		691 474 CZK	

Source: own processing

⁴⁰ Interest rate Česká spořitelna [online]. Available at: <https://www.csas.cz>

⁴¹ Interest rate Hypoteční banka [online]. Available at: <https://www.hypotecnibanka.cz>

4.4 Comparison of founded results by table

Table 12. Final comparison table of banks.

Names of Banks	Oschadbank	PrivatBank	Česká spořitelna	Hypoteční banka
Interest rate	14%	7%	2,84%	2,89%
Total interest amount	2 092 263 ₴	973 154 ₴	872 357 CZK	691 474 CZK
Monthly annuity payment	13 115 ₴	8 766 ₴	15 289 CZK	11 945 CZK
Total annuity payments	3 147 518 ₴	2 103 785 ₴	3 669 327 CZK	2 866 895 CZK
Down payment	452 252 ₴	376 877 ₴	310 775 CZK	932 324 CZK

Source: own processing

Ultimately, after analyzing, there are four options for mortgage lending according to the annuity calculation of payments. With the naked eye, we can conclude that if we compare the mortgage market in Ukraine, then based on the comparison table, PrivatBank is the clear favorite.

Since PrivatBank adheres to European standards of lending rules, the credit of trust after the nationalization of PrivatBank grew by at least 15% percent, even though it was a de facto monopoly in Ukraine.

In turn, if we compare the similar market in the Czech Republic, then, of course, Hypoteční banka is out of the competition. Obviously, when comparing the Ukrainian and Czech markets in the mortgage lending industry, Czech mortgage lending conditions are more favorable than Ukrainian ones. Based on this, Hypoteční banka has a low-interest rate of 2.89%, an average monthly installment of 11,945 CZK among the compared banks, and ultimately the client overpays the least amount of 691,474 CZK in 20 years. Even despite the identical percentage down payment, as in OschadBank, it is so large due to the correlation of real estate prices. Therefore, the choice of the optimal bank is obvious.

5 Results and Conclusion

This work carries an analytical analysis based on price dynamics and comparison of annuity payments of selected banks. Based on this, it can be determined that the Ukrainian real estate market is not as in demand as the Czech one. Therefore, every year, all records for investments in Czech real estate are broken. The main negative factors for the purchase of mortgage real estate in Ukraine are the high rates of banks on loans, from 10% to 20% per annum, and low average wages of about 15 thousand hryvnias in the capital. While in the Czech Republic, interest rates often do not exceed the 5% - 7% mark, and the average salary is about CZK 30 thousand.

Nevertheless, thanks to such programs, Privat Bank - "7% mortgage", makes the Ukrainian mortgage market closer to the European one.

Therefore, we can conclude that even in the ratio of wages to real estate prices in the Czech Republic, it is more profitable to have housing than in Ukraine.

The writing of this bachelor's work brought the author much new information from the point of mortgages and the points of statistics and economics. An elementary understanding of how the annuity settlement system for bank clients works was also achieved. Despite a large number of topics that are not covered, the author considers his goal is achieved.

6 References

6.1 Online sources:

[1]. *Basic definitions*. [online] (2020, August 15.) Investopedia.

<https://www.investopedia.com/terms>

[2]. *PRIBOR and EURIBOR definitions*. [online] Czech Wealth.

<https://www.czechwealth.cz/slovník-pojmu/pribor-prague-interbank-offered-rates/>

[3]. *Advantages and disadvantages of Primary and Secondary housing*. [online] (2018) Additional information.

<https://dd.net.ua/vtorichnyiy-ryinok-nedvizhimosti/>

[4]. *Legal term of credit*. [online] (September 21, 2012) Law Act.

<https://zakon.rada.gov.ua/laws/show/en/358-16#Text>

[5]. *Average monthly salary of Ukraine*. [online] (2021, January 21). MinFin.

<https://index.minfin.com.ua/ua/labour/salary/average/>

[6]. *How to get mortgage in Ukraine*. [online] (2021, February 28). Finance.

<https://finance.ua/mortgage>

[7]. *How to get mortgage in Czech Republic*. [online] (2021). Banky.

<https://www.banky.cz/podminky-hypoteky/>

[8]. *Mortgage Insurance Ukraine*. [online] (2012, September 7). Visnyk.

<http://www.visnuk.com.ua/ru/pubs/id/3428>

[9]. *Resolution of the Cabinet of Ministers of Ukraine*. [online] (2011, April 6). Law Act.

<https://zakon.rada.gov.ua/laws/show/358-2011-%D0%BF#Text>

[10]. *KIBOR definition*. [online]. (2010).

<https://enacademic.com/dic.nsf/enwiki/7051423>

[11]. *Mortgage insurance Czech Republic*. [online] (2006, February 15). Insurance.

<https://www.penize.cz/stavebni-sporeni/17867-vybirate-si-uver-na-bydleni-nezapomente-do-nakladu-zapocitat-i-povinna-pojisteni>

[12]. *Law Act 190/2004 Coll*. [online] (2004). Law act on bonds.

<https://www.cnb.cz/en/supervision-financial-market/legislation/issuance-and-registration-of-securities-takeover-bids-and-squeeze-outs/laws-and-regulations/>

[13]. *Average prices of square meters*. [online] (2009-2020). Dynamic of prices.

<http://domik.ua/nedvizhimost/>

[14]. *Situation on the real estate market*. [online] (2015, January 4). Growth of prices.

<https://news.dtkr.ua/ru/society/real-estate/32096>

6.2 Literature:

[1]. ZHDANOV V. Yu. and I. Y., *Financial analysis of an enterprise using coefficients and models*. Published by LLC “Prospect” 2018.

[2]. PYKHTIN Sergey, ALEKSEEVA Diana, *Lending operations: bank lending.*, published by LLC „Yurayt“ 2018. ISBN 978-5-534-10276-5.

[3]. PAVELKA, František. *Hypoteční úvěry.* published by PP Agency, 1995.

[4]. Batkovskiy A.M, Kravchuk P.V, Mingaliev K.N., Styazhkin A.N. (2019) Russian Journal of Innovation Economics „*Analysis of financial condition of innovation-active enterprises*“. Published by “First economic publishing house “ISSN 2222-0372. p. 1151.

[5] SCHMITZ, A. MEYERS, W H. C.A.B. INTERNATIONAL, ISSUING BODY. *Transition to agricultural market economies : the future of Kazakhstan, Russia, and Ukraine.* Wallingford, Oxfordshire, UK: CABI, 2015. ISBN 9781780645353.

[6] FITCH, T P. *Dictionary of banking terms.* Hauppauge, NY: Barron's Educational Series, 2000. ISBN 0764112600.

7. List of figures and tables

Table 1. Average prices of flats in Ukraine.....	16
Table 2. Average prices of flats in Czech Republic.....	16
Table 3. Method of evaluation risks	19
Table 4. Dynamics of housing prices in Kiev.	27
Table 5. Dynamic of housing prices in Lvov.	28
Table 6. Dynamic of housing prices in Prague.....	30
Table 7. Dynamic of housing prices in Plzeň.....	31
Table 8. Analysis of annuity payments (Privatbank).....	34
Table 9. Analysis of annuity payments (Osčadbank).	34
Table 10. Analysis of annuity payments (Česká spořitelna)	35
Table 11. Analysis of annuity payments (Hypoteční banka).	35
Table 12. Final comparison table of banks.....	36
Figure 1. Trend line (Dynamic of prices of flats in Kiev).....	28
Figure 2. Trend line (Dynamic of prices of flats in Lvov).....	29
Figure 3. Trend line (Dynamic of prices of flats in Prague).	30
Figure 4. Trend line (Dynamic of prices of flats in Plzeň).	31

8. Appendix

Appendix 1.

Average monthly salary by regions of Ukraine in January 2021 (UAH)

	Average salary	Change from the previous month		Deviation from the average salary in Ukraine	
Ukraine	12337	-1842	-13.0%		
Vinnitsia	10751	-1500	-12.2%	-1586	-12.9%
Volyn	10048	-1577	-13.6%	-2289	-18.6%
Dnepropetrovsk	12744	-420	-3.2%	+407	+3.3%
Donetsk	13786	-934	-6.3%	+1449	+11.7%
Zhytomyr	10111	-1694	-14.4%	-2226	-18.0%
Transcarpathian	10417	-2689	-20.5%	-1920	-15.6%
Zaporozhye	12542	-1078	-7.9%	+205	+1.7%
Ivano-Frankivsk	10558	-1529	-12.7%	-1779	-14.4%
Kyiv	12645	-1655	-11.6%	+308	+2.5%
Kirovograd	9780	-1612	-14.2%	-2557	-20.7%
Luhansk	10324	-2441	-19.1%	-2013	-16.3%
Lviv	11038	-1480	-11.8%	-1299	-10.5%
Mykolayivska	12535	-2070	-14.2%	+198	+1.6%
Odessa	10995	-1558	-12.4%	-1342	-10.9%
Poltava	11353	-1358	-10.7%	-984	-8.0%
Rivne	11406	-2682	-19.0%	-931	-7.5%
Sumy	10306	-1668	-13.9%	-2030	-16.5%
Ternopil	9922	-2024	-16.9%	-2415	-19.6%
Kharkiv	10364	-1605	-13.4%	-1973	-16.0%
Kherson	9971	-1615	-13.9%	-2366	-19.2%
Khmelnysky	10725	-2226	-17.2%	-1612	-13.1%
Cherkasy	10460	-1186	-10.2%	-1877	-15.2%
Chernivtsi	9696	-2157	-18.2%	-2640	-21.4%
Chernihiv	9877	-1044	-9.6%	-2460	-19.9%
m. Kyiv	17533	-4279	-19.6%	+5196	+42.1%

Appendix 2.

Průměrná měsíční mzda – čtvrtletní údaje (absolutní hodnoty a meziroční změny)
Average monthly wage – quarterly data (absolute numbers and year-on-year changes)

