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НАЦІОНАЛЬНИЙ УНІВЕРСИТЕТ «ЛЬВІВСЬКА ПОЛІТЕХНІКА»  
ІНСТИТУТ ЕКОНОМІКИ І МЕНЕДЖМЕНТУ**

**КРАКІВСЬКИЙ ЕКОНОМІЧНИЙ УНІВЕРСИТЕТ, ПОЛЬЩА  
ЛОДЗЬКИЙ УНІВЕРСИТЕТ, ПОЛЬЩА**



## **ЗБІРНИК ТЕЗ**

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Подано тези доповідей з актуальних проблем управління фінансовими ризиками, зокрема використання страхування як інструмента управління ризиком, розвитку фінансових ринків в умовах невизначеності, фінансових аспектів розвитку міст та регіонів.

Для науковців, практиків, викладачів і студентів.

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**INTERNATIONAL SCIENTIFIC CONFERENCE  
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**ABSTRACTS**

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*The collection presents abstracts on topical problems of financial risk management, in particular the use of insurance as a risk management tool, the development of financial markets under uncertainty, the financial aspects of cities and regional development.*



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**SECTION 1.**  
**INSURANCE AS A RISK MANAGEMENT TOOL**



## **BEHAVIORAL ASPECTS OF MANAGING THE RISK OF INSURANCE FRAUD IN THE ERA OF THE FOURTH INDUSTRIAL REVOLUTION**

*Maria Plonka, dr.hab., prof. CUE  
Cracow University of Economics*

The fourth industrial revolution (three previous revolutions are: steam, electricity, computers) is an effect caused by the internet and digitization in all spheres and social and economic processes, as a result of which the "people-machine" border disappears. Artificial intelligence, internet of people (social and business networks), internet of things (smart mobility), internet of services (smart networks), data internet, cloud computing implies new opportunities but also risks for risk management. The key threat is the possibility of new fraud, which manifests itself in various forms and at different stages of the business of insurance companies, implying high social costs.

The aim of the research is to identify behavioral premises and areas of fraud in the insurance sector. Therefore, the thesis was put forward that the potential areas of insurance fraud are determined by axiomatic order in society.

Against this background, the following research questions were posed:

1. Are insurance frauds rational or emotional?
2. What is the degree of social perception and acceptance of fraudulent behavior in the insurance sector?
3. What is the subjective perception of insurance fraud by potential and current participants in the insurance sector?
4. What is the degree of anomaly (inconsistency of the axiomatic system) in the case of insurance fraud?

Identifying, on theoretical and cognitive grounds, behavioral sources of insurance fraud, they were combined by two phenomena: information asymmetry (one party to the contract knows more) and moral hazard (moral hazard). Against this background, internal fraud (arising at the insurance company) and external fraud (arising among the clients of insurance companies) are distinguished.

The main areas of insurance fraud and crime were: fraud, making false declarations, illegal sale of insurance products (Ghost brokers), aiding (criminal groups), and cybercrime.

Based on research in Poland, it was found that the temptation to cheat is an emotional phenomenon and the degree of social acceptance of fraud is significant (15% of respondents do not see anything wrong in overstating the value of damages, and 75% of respondents did not perceive insurance companies as fair in paying compensation). [Moralność finansowa Polaków Financial morality of Poles Research report, 2nd Edition, A. Lewicka-Strzałecka, Conference of Financial Enterprises in Poland, Gdańsk-Warsaw 2017]. This state of social perception is conducive to pathological behavior or giving social consent to potential abuses.

## **INNOVATIVE METHODS OF PREVENTING ABUSE IN MOTOR INSURANCE IN THE ERA OF THE 4.0 INDUSTRIAL REVOLUTION**

*Jolanta Stanienda, dr.  
Cracow University of Economics*

The rapid development of the globalization process and the liberalization of the financial markets, communication, movement of people and capital, in addition to positive effects, is also reflected in the changes taking place in the sphere of crime, in particular in organized crime groups, whose structures and scope of activity are becoming increasingly international in nature. Not only do they expand the territorial scope of their stay, but they are increasingly able to conduct illegal activities far from the place of their primary location. Law enforcement authorities face a huge challenge to not only identify but also punish major criminals who are often outside the country of crime. Insurance offenses significantly impede the proper development of the insurance market and are a vivid example of the risk associated with the insurance contract that may adversely affect the rights or obligations of the insured, because ultimately acts or omissions aimed at extorting damages affect the interests of consumers through an increase in premiums and the service and ratio of companies insurance to victims. Therefore, it is necessary to indicate the basic threats, the scope of the phenomenon of insurance crime and innovative and effective methods of preventing them in the context of the concept of "Improving Performance". The following research questions were asked:

1. What determines the phenomenon of fraud in insurance?
2. What is the scale of crime in motor insurance?
3. What are the ways to obtain undue compensation in motor insurance?
4. What methods can effectively fight crime in motor insurance?

The speech structure includes an introduction, three parts and a summary. The first part presents the essence, causes and scale of the phenomenon of crime on the motor insurance market. The structure of complaints about insurance companies in Poland regarding motor insurance was also presented. The second part is devoted to scams in motor insurance and the liquidation of motor damage as a case study. The last part presents methods of preventing damages in motor insurance. The end of the speech are postulates (proposals) to improve the effectiveness of crime prevention methods in motor insurance.

In the face of digital transformation (the fourth industrial revolution), the use of modern technologies, both in terms of better risk estimation and new customer communication channels, will contribute to crime prevention in the field of motor insurance. Product and process innovations include:

1. Establishment of insurance fighting cells in insurance institutions.
2. Creating a database (modeled on Scandinavian and American solutions)

with credentials, technical inspections of vehicles, which will allow better risk assessment and differentiation of premiums for individual drivers.

3. Creating an insurance product in such a way as to introduce correlation relations between, for example, fines paid or dangerous driving, and the amount of the insurance premium. This may also have the additional effect of improving road safety.

4. Automating the transmission of information on drivers and vehicles, which will ensure, inter alia, easier detection of drivers driving without compulsory civil liability insurance.

5. Increasing the level of use of information exchange, statistical analysis and available data on the use of motor insurance, as it is not yet satisfactory on the Polish market.

6. Developing a model of cooperation between insurance companies, law enforcement authorities and other entities and institutions of the insurance market and the state in the area of reducing or eliminating the phenomenon of insurance crime (currently there is no cooperation, e.g. between insurance companies - the fight for clients). Joint action is necessary.

7. The use of modern and fast communication channels with the client, eg chat, which is a cheap channel, but fast. It can support other communication channels, including e-mail. Communication channels are needed when the insurer wants to contact the client (e.g. email) and others (e.g. (telephone, video chat, meeting with the agent) when the client has a problem and reports to the insurer.

8. Effective stigmatization of persons and institutions involved in extortion, including the transfer by the insurer who has detected the fraud of a person to the relevant authorities and institutions. In such a situation, the phishing scam may have a problem, e.g. obtaining a loan, and subsequent insurance for him should cost twice as much.

9. Creating a phishing insurance register accessible to every citizen (to eliminate social acceptance of such behavior) - threat of loss of honor and reputation.

10. Disclosure of methods, schemes, models of criminal activities, suspicious events, or networks of connections between events in the motor insurance industry by the Information Center of the Insurance Guarantee Fund in order to facilitate insurance companies and law enforcement authorities, conducting proceedings in this regard.

11. Prevention of insurance crime in the area of forgery of loss settlement invoices through closer cooperation of insurance companies with the Police and the Prosecutor's Office, as well as tax and fiscal control authorities.

12. Social education by raising insurance awareness, because there are large deficits in this area among customers, employees of insurance companies, brokers, employees of the prosecutor's office and police.

The temptation to abuse in insurance is more and more common due to the possibility of obtaining easy funds. In order for conditions to arise in which moral hazard may arise, it is necessary to conclude an agreement between two parties, one of which is not fully responsible for its behavior, nor fully controlled, and another condition in the form of information asymmetry between the parties, i.e. she knows how the latter behaves, so she cannot immediately oppose dishonest acts that harm her. This means that the side that has the information advantage begins to strive to maximize its own benefits, at the expense of the other side who is unaware of anything. Therefore, all methods that can prevent fraud in motor insurance and other types of insurance may not be very effective if the beneficiary of the insurance and the insurer do not act fairly.

## **SOME ASPECTS OF ISURANCE TRANSPORT COMPANIES RISKS**

*Dobosh Nazar, PhD, Assoc. professor  
Lviv Polytechnic National University*

Modern stage of insurance market development in Europe is characterized by rapid growth. This substantially strengthens competition between insurance companies. At the same time, despite high potential of the insurance market, one can observe a fall in demand for insurance services. The main reasons standing behind this situation are low purchasing power of population, lack of awareness of necessity and advantages of insurance, negative stereotypes about insurance among consumers and many other factors. In order to overcome these stereotypes, it is necessary to increase purchasing power of population, improve reliability of insurers and financial condition of economic entities, and to make certain steps at national level.

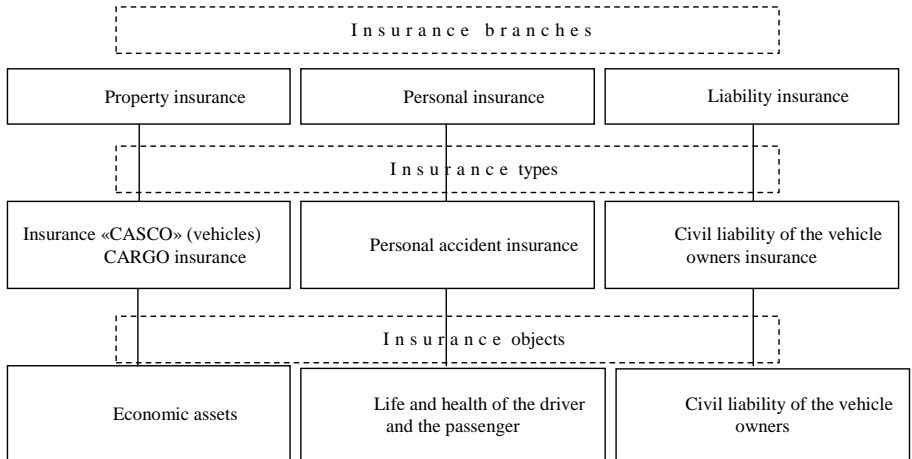
An insurance product is a complex and multidimensional instrument that represents a promise to compensate the insured party according to pre-specified terms should some well-defined event occur. However, the value of the insurance company's compensation commitment depends both on its reputation and on its financial capability. Therefore, a significant amount of information regarding the insurers' reputation, financial strength and credibility is needed in order to ensure the efficient placement of a given risk. Evidently, insurance brokers play a key role in this task.

However, not all risks can be insured, and all insurance policies will have some gaps. Accordingly, understanding the terms of your insurance coverage is important. Your organization should always read its insurance policies in light of its risks and obtain the insurance that adequately, efficiently and economically addresses its risks.

The main feature of insurance for transport companies is the variety of types of vehicles and cargo as objects of insurance. Insurance services, which relate to auto

insurance include: CASCO insurance, liability insurance, insurance against accidents on transport, cargo insurance and so on. Auto insurance is a comprehensive type of insurance. It is characterized by close interaction between the various branches of insurance: property, personal and liability insurance.

The structure of insurance for transport companies is presented in picture.



*Pic. 1 – The structure of insurance for transport companies*

Various risks influence on transport organizations during its activities. These risks can be divided into the following groups.

- 1 damage caused by the vehicle driver
- 2 the traffic accident (damage to vehicles, cargo etc.)
- 3 damage associated with theft, robbery, another attacks against vehicles
- 4 injuries or deaths of drivers because of the traffic accident
- 5 fire and other natural factors on the territory of the transport company
- 6 human errors (improper packing of the cargo, delay in delivery)
- 7 a failure of contract as a result of risks 1,2,3,4,5,6

We can determine risks that cannot be insured through legislative restrictions or other reasons (e.g., deliberate acts of the operator of the vehicle, the natural properties of the goods etc.) during developing the insurance strategy for the transport organizations. There are another risks that are usually not insured, but under certain circumstances or the wishes of the client, can be insured (for example, war risks). After that, risks that can and should be insured are classified by certain types of insurance and charged. Then it used as individual components in the specific insurance contracts.

Information plays an important role on the insurance market, since it makes it possible for an insurer to regulate relations with customer. For an insurer, it can be both positive, as well as negative factor. Attraction of customers will depend on how this information is used and whether it is credible. If information is credible and

available to potential customers of insurance services, the company will gain greater customers' confidence and their number will increase. Otherwise, insurer's business will suffer, since customers will not consider cooperation with such a company.

Clients who purchase property-related insurance and certain risks insurance services will prefer more trusted companies. This trust is based on many insurer's indicators. They include assets, insurance reserves, insurance premiums earned, company's openness and access to information.

Such insurance companies deserve the trust of the clients due to openness, provision of reliable information about their activity, timely payment of insurance compensations.

## **FEATURES OF CURRENCY RISK MANAGEMENT**

*Iryna Khoma, D.Sc., Prof.  
Lviv Polytechnic National University*

With the growing uncertainty in global and international trade and creating market fluctuation higher than ever demand for management of financial risk constantly increasing due to high chance of market risk from sign of recessions, political turmoil, changes in interest rates and exchange rate in global economy. Financial globalization, international trade and open market create new opportunities and this opportunity involves new financial risk creating barriers to trade and business. To avoid these risk business are set to do risk management. One of the integral risk to business both financial and non financial today is the foreign exchange risk mostly to business who engage in international trade or which operation depends on foreign goods and services. Managing currency risk is thus related to preserving the flow of profit so as to earn an adequate return on investment, to maintain a comfortable surplus of assets beyond liabilities in view of corporation. Exchange rate risk management is an integral part in every firm's decisions about foreign currency exposure. Currency risk hedging strategies entail eliminating or reducing this risk, and require understanding of both the ways that the exchange rate risk could affect the operations of economic agents and techniques to deal with the consequent risk implications. Mitigating currency risk with targeted strategy through measurement, proper tools and methods, staying ahead of market fluctuation using instrument like forward contracts, currency swap, future contract and choice of invoicing.

Foreign exchange risk also called currency risk, risk that arises from open or imperfectly hedged positions in a particular currency. A common definition of exchange rate risk relates to the effect of unexpected exchange rate changes on the

value of the firm. In particular, it is defined as the possible direct loss (as a result of an unhinged exposure) or indirect loss in the firm's cash flows, assets and liabilities, net profit and, in turn, its stock market value from an exchange rate move. Any business that trades in foreign markets is almost compelled to exchange currency as part of its day-to-day routine. When a business sells to a foreign buyer, usually payment will be in the currency of the buyer's country. Some part of the value of the sales proceeds will be lost to the foreign exchange market. Foreign exchange rate directions are almost impossible to predict but can be managed hedge to minimize risk by employing several strategies that meet objectives and goals. Changes in exchange rates can affect a business directly or indirectly. Exposure that result in a gain or loss in exchange rate for the company, which relatively immediate affect the business balance sheet and income statement is understand to be direct effect. Indirect that is difficult to measure and control as a result of dependent on the surrounding world. Three main types of exchange rate risk: transaction risk, translation risk and economic risk [1]. Transaction risk is the risk that the exchange rate will move in a direction adverse to the business part way through a transaction. It is basically cash flow risk and deals with the effect of exchange rate moves on transactional account exposure related to receivables (export contracts), payables (import contracts) or repatriation of dividends. Translation risk is translation risk, which is basically balance sheet exchange rate risk and relates exchange rate moves to the valuation of a foreign subsidiary and, in turn, to the consolidation of a foreign subsidiary to the parent company's balance sheet. Translation risk for a foreign subsidiary is usually measured by the exposure of net assets (assets less liabilities) to potential exchange rate moves. One most important goal in risk management is identifying the type of currency risk adverse to a business. Risk can be identify by asking some question and figuring out what section of the business stand to devalue as a result of exchange rate fluctuation. Hedging strategy is possible after measuring the impact of exchange rate movement on the firm that is engaged in foreign currency denominated transaction. Measuring the level of exposure helps a firm to decide what risk to engage in and how to approach it. At present, market risk is primarily measured by a widely used method called value-at-risk (VAR) model. VAR is the maximum loss over a target horizon such that there is a low, pre-specified probability that the actual loss will be larger. There are different kinds of tools the companies can use to insure themselves from risks that occurs in times of currency changes. The hedging tools are all serving the same purpose; the currency management instruments enable the firm to take a short or a long position to minimize the risks. These tools are for example hedging with forward contract, future contract or with option, swaps and debts. When the exchange of currency is done right now to the current currency rate, it is called the spot market or spot exchange rate. Forward contract is an agreement between two parties in which the currency exchange rate is set at the same time as the agreement is written, but for a specific time in the future. This means that while the amount of the transaction, the value date, the payments procedure and the exchange rate are agreed

about in advance, no exchange of money takes place until the actual date in the future [2].

A currency swap is a financial instrument that helps parties swap notional principals in different currencies and thus pay interest on the received currency. The purpose of currency swaps is to hedge against risk exposure associated with exchange rate fluctuations, ensure receipt of foreign monies and to achieve better lending rates. Currency swaps are comprised of two notional principals that are exchanged at the beginning and end of the agreement. Companies that have exposure to foreign markets can often hedge their risk with currency swap forward contracts. One possibility to reduce the foreign exchange risk is by inserting a foreign exchange clause in the contract of sale, established between the buyer and seller. The clause prescribes that after the parties have signed the contract, they should consider exchange rate variations. For example, it could be that the exchange rate is allowed to fluctuate within a specific interval, and if the exchange rate exceeds this interval the buyer needs to pay an additional amount. So therefore management of currency risk should involve the evaluation of all type of currency risk, take proper measurement of all forms of currency risk and have a strategy to mitigate all currency risk in order to stay ahead of unexpected loss and currency fluctuation.

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## **RISKS OF COMMERCIAL BANKS IN IMPLEMENTING ENVIRONMENTAL PROJECTS**

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Commercial banks' involvement in lending to any project is risky. Instead, the role of environmental projects is particularly important in the wide variety of projects. As a rule, no one talks about the high profitability of environmental activities. By their nature, they are predominantly expendable projects, the main purpose of which is environmental protection, a certain environmental mission rather than profit-sharing. At the same time, environmental programs and projects are, in the current conditions, an extremely important component of government action in many countries, as there is an awareness of the great risks of the extinction of those natural resources (especially clean air, fresh water, different types of species which live on



Earth – including animals, plants, etc.), which are important elements planet ecosystems. Their disappearance can deprive people of both food sources and useful elements, vitamins, minerals, amino acids, etc. for the vital activity of humans, animals and plants. Many scientific papers and relevant publications have been devoted to the research of these problems [1].

At the same time, it is impossible to solve a number of environmental problems only with the efforts of state and local authorities, which rely financially on the state and local budgets. It is necessary to attract businesses, industrialists and entrepreneurs. These aspects are outlined in the papers [2].

Business entities have their own methods of overcoming the environmental crisis, mainly technological processes. However, business requires financial support that it always seeks and finds in bank loans and insurance companies policies. In such cases the interests of commercial banks may be affected by the risks associated with lending to projects which main task is not the production and sale of products, but the development, testing, implementation of environmental technologies. After all, measures for the purification of solid, liquid and gaseous waste from production can not in every case be used for the production of goods. Moreover, it is hard to expect a direct economic benefit from the development and implementation of noise suppression solutions, which involve the use of noise-absorbing materials, the introduction of new innovative solutions in the design of machines and mechanisms. Studies of these problems have been published in [3].

If we consider the activities of the so-called “green banks”, which many theorists and practitioners consider to be leading in the implementation of environmental programs and projects [4-6], it is possible to identify certain problems in their activity.

Banks’ risks are dependent on external and internal factors.

Internal risks associated with the implementation of environmental measures should be measured by the probability of exceeding the costs of eco-measures by the part of the profit, that can be directed to these activities from the part of the profit intended for enterprise development. In other words, we differentiate the profit of the company into parts: the first part goes to repay loans and interest, the second one – to pay dividends to investors, the third – to incentive (bonus) payments to employees, the fourth – to the development of the enterprise, including environmental measures. Then the internal risk of implementing eco-measures can be represented as the ratio of costs and the part of profit we have determined.

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## OUTSOURCING RISK MANAGEMENT

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Outsourcing is a tool for management of industrial and economic activity of the enterprise, which involves the transfer to an outside organization of both minor and major functions on the basis of the concluded contract and for a fee, which leads to the optimization of business activity, and in some cases to temporary attraction of additional workers, and aims to increase the competitiveness of the activity. Outsourcing implementation by the enterprise-customer is made by its outsourcing activity related to the planning and implementation of outsourcing and occurs in the process of collaboration with the outsourcer in order to achieve this goal.

Effective management of the outsourcing implementation process is a key to get the desirable results of the cooperation among the client and outsourcer. An important element of this control should be the identification of the main risks of outsourcing activity for timely levelling their impact.

By the place of formation, the risks of the outsourcing activity of the manufacturing enterprises is advisable to divide into two main groups: internal relative to the enterprise-customer and external. Internal are the risks that may arise within the enterprise after transfer of functions to the outsourcer. External risks of outsourcing activity are those related to the outsourcer activity. The major internal and external risks of the outsourcing are listed in the Table 1.

The risk of untimely performance of the functions, the risk of poor quality of services from the outsourcer and the risk of under fulfillment of the order by the outsourcer are the major risks encountered in the process of cooperation with the outsourcer (based on the results that were obtained by questioning the employees of manufacturing enterprises that transfer part of the functions to outsourcer).

Table 1. – The risks of outsourcing activity of production enterprises\*

External risks	Internal risks
1. The risk of deterioration of the financial condition of the outsourcer or its bankruptcy.	1. The risk of revaluation of the own costs on function accomplishment or underestimation of outsourcer costs.
2. The risk of untimely performance of the functions by the outsourcer.	2. The risk of productivity reduction of the internal staff of the enterprise-customer, the loss of their skills related to the implementation of the function that was transferred.
3. The risk of under fulfilment of the order by the outsourcer.	3. The risk of underutilization of the fixed assets, which are inexpedient to sell because of their strategic importance.
4. The risk of getting poor quality of services from the outsourcer.	4. Risks associated with the transformation of industrial and economic activity of the enterprise-customer.
5. The risk of disclosure of confidential information by the outsourcer.	

\*Systematized by the authors

One of the most important tasks for the enterprise-customer during outsourcing activity risks management is to avoid or minimize residue of the costs that were not compensated by the outsourcer. Therefore it is necessary to use the method of expected costs distribution between the enterprise-customer and the outsourcer in case of arising of external risks of cooperation.

Current economic conditions require from the enterprises to use new tools for activity management, including outsourcing. Given the fact that along with the benefits the outsourcing activity is related to the emergence of a number of risks both of external and internal origin, it is important to identify and assess their impact on the economic efficiency of the enterprise-customer. The developed method of expected costs distribution among the enterprise-customer and the outsourcer requires from the managers to develop and implement a number of management decisions depending on the type of outsourcing risk and functions that are transferred to an outside organization. Determining the threshold level of costs will minimize or avoid the costs of the enterprise-customer related to the impact of outsourcing external risks, that will increase the efficiency of outsourcing as a tool for activity management of manufacturing enterprises.

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## RISK-BASED MANAGEMENT OF INSURANCE UNDERTAKINGS

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An insurance undertaking is both an object affected by risk and the subject of risk management at the same time. Changes in nature of insurance market in the context of financial globalization and new challenges to its financial security set the task to develop a new concept of risk management, aimed at ensuring competitiveness, increasing the value of insurance companies, and their financial stability. The purpose of the study is to substantiate conceptual approaches to comprehensive risk management of insurance companies, the use of mechanisms, models and tools which will contribute to improving the efficiency of the company, its level of financial stability and competitiveness.

By receiving insurance premiums, the insurer assumes responsibility for the possible risk of future losses, and forms insurance reserves to cover it. The better the risks are estimated, the closer the amount of the insurance reserve will be to the amount of future insurance payments, and the more adequate the methods of calculating rates and reserves will be (Fig. 1).

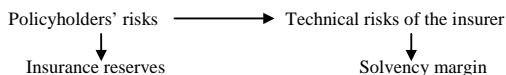


Fig. 1. Financial sources of insurer's risks coverage

Policyholders' risks generate insurer's technical risks, which means the possible lack of funds to fulfill insurance obligations. In addition to the technical risks directly related to insurance operations, the activity of the insurance company is also accompanied by two other risk groups - investment and non-technical.

Risk - management does not aim at avoiding risks at all. Moreover, once the higher the risk, the higher the profitability is, the risk - management, as a conscious process, aimed at determining what risks the insurer can and should take, based on the goals of business profitability, but without threatening its further existence. Risk - management is a complex phenomenon that includes elements of strategic and operational management, personnel management, production, finances. We can distinguish certain stages of its development (Fig. 2).

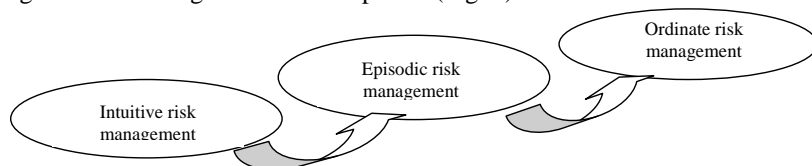


Fig. 2. Stages of development of risk management in insurance undertakings

Episodic risk management is characterized by the partial implementation of ordinate risk management measures. About half of Ukrainian insurers are at this stage of its development. In the most general form, the business process "risk management" should include the following elements: risk analysis (identification and evaluation), risk map of the insurance company (Fig. 3), risk management tools and procedures, risk monitoring and risk control, as well as special units of risk management.

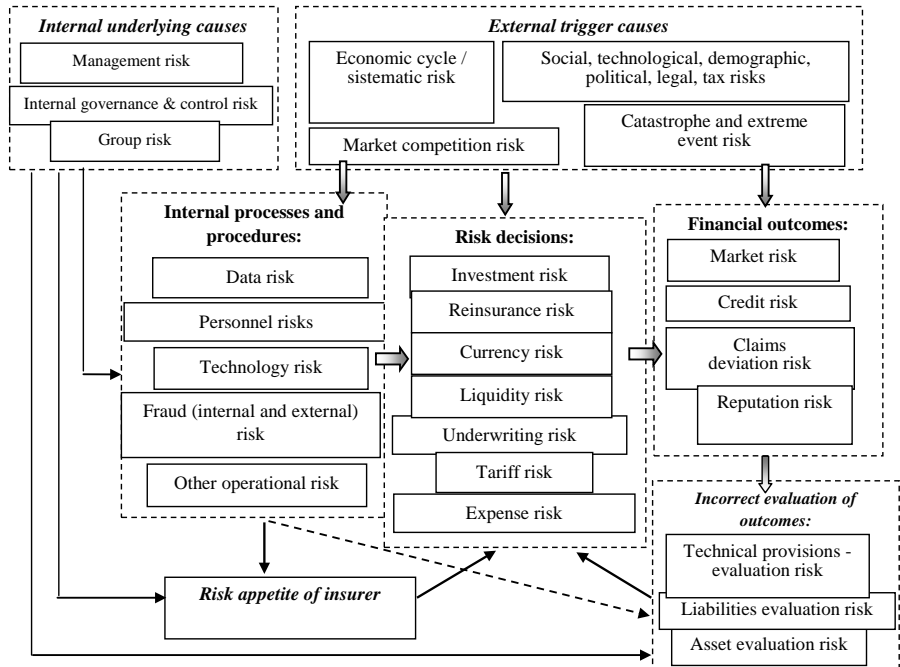


Fig. 3. Risk map of insurance company

In the decision-making process regarding the implementation of a risk management strategy, it should be taken into consideration that the implementation of risk management measures is justified only if the expected loss exceeds the cost of managing risks.

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## VOLATILITY OF MOTOR INSURANCE STATISTICS IN UKRAINE

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Motor insurance in Ukraine is not fully realizing its potential. Despite certain positive trends, the institutional and functional characteristics of the domestic motor insurance market generally do not meet the real needs of insurers, government and European standards. In Ukraine, motor insurance is represented by the following types: vehicle insurance (Casco Insurance) (provided in a voluntary form); compulsory and voluntary insurance of civil liability of land vehicles owners, International compulsory civil liability insurance of land vehicles owners. According to experts, the policy of Casco Insurance in Ukraine has no more than 15-20% car owners, which makes this market attractive enough for insurers in terms of insurance field coverage, but due to suboptimal cost structure and loss risk, this type is problematic for many insurers.

Motor insurance services make up a significant share of the domestic insurance market (27.35% of gross premiums and 49.84% of gross payments over 9 months of 2019 [1, 2]), the performance of most insurers depends directly on the quality of these services, as well as the perception and confidence level of policyholders in the insurance industry.

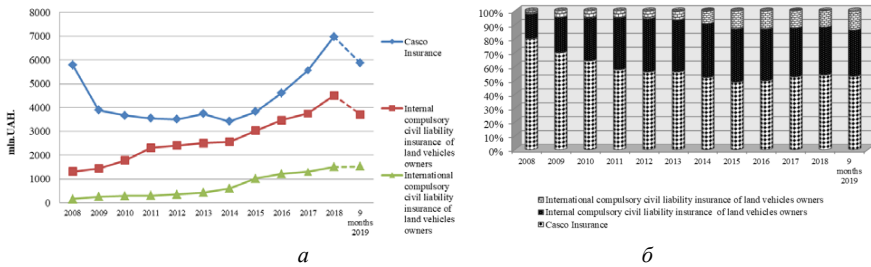


Fig. 1 - Dynamics of motor insurance premiums, mln.UAH (a) and structure by types,% (b) in 2008-9 months 2019

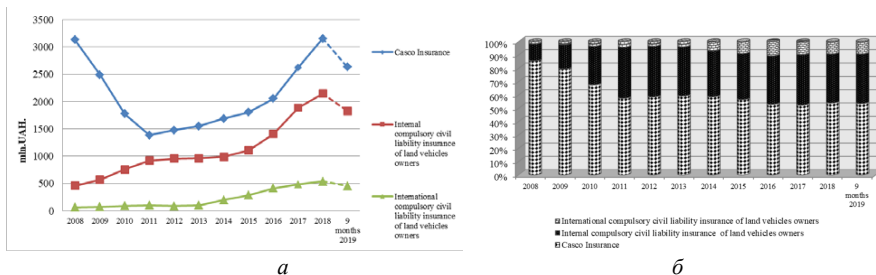


Fig. 2 - Dynamics of motor insurance claims, mln.UAH (a) and structure by types,% (b) in 2008-9 months 2019

types,% (b) in 2008-9 months 2019

The global financial crisis of the second half of 2008–2009 had a significant impact on the quantitative indicators of the insurance market and the insurers activities. In 2010-2014, the insurance market was relatively stable, competitive pricing was taking place, insurers were solving the problems of ensuring the profitability of individual insurance products and insurance portfolios in the costs rising context. The main problems of the motor insurance market of Ukraine in 2009-2014 were reduction of solvent demand for motor insurance services; insurance payments and loss increase; imperfection of legislative regulation in the field of motor insurance; low level of services provided by separate insurers and fraud. The decrease in demand is due to: uncertainty about quality insurance product, adequate insurance tariffs and government protection against unscrupulous insurers; delaying payments, which may last from three months to a year and a half, or withholding payments due to breach of contract,; lowering the amount of payments through expert appraisers, who charge the "required" wear and tear on the car, or reduce the cost of the necessary repairs excessively.

Quantitative indicators of motor insurance increased during 2014-2017, but this was significantly influenced by the currency devaluation. Real growth rates were already observed in 2018-2019.

In Fig. 3 shows the dynamics of claims level by types of motor insurance.

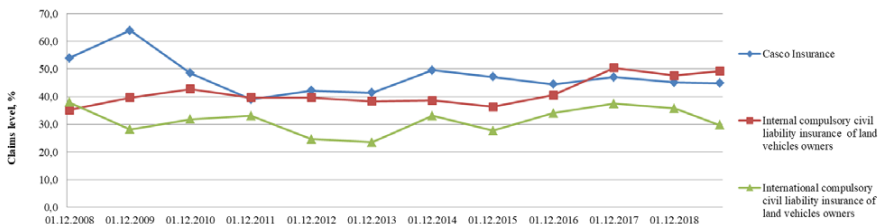


Fig. 3 - Dynamics of claims level by types of motor insurance in 2008-9months 2019, %

As a result of the conducted research it was found that the loss by motor insurance types had considerable volatility caused by both internal characteristics of insurance products and structural changes in the portfolios of insurance companies.

According to [3], at September 30, 2019, Casco Insurance for top-20 companies in this type of insurance had a claims level ranging from 7.95% («ALFA-HARANT» IC) to 80.92% («Providna» IC). Market leaders («ARX», «Arsenal Strakhuvannia», «Uniqa») had claims level of 42-46%. This is due to different companies' portfolios in the contingent and underwriting policy. As experience of Ukrainian insurers shows, at high expenses on agency and brokerage fees (30-40%), the claims level over 50% is guaranteed to lead to a negative financial result for this type of insurance. Top-20 insurers by Internal compulsory civil liability insurance of land vehicles owners had a level of variation from 28.11% («ASKO DS» IC) to 97.33%

(«Providna» IC). Market leaders («TAS», «ORANTA», «UPSK») had claims level about 50%, with companies also incurring high agency fees and not generating significant profits for this type, but for a large number of companies this type was unprofitable. The 8 insurers providing International compulsory civil liability insurance of land vehicles owners had a claims level of 14.52% («USG & Globus» VIG IC) - the market leader to 49.6% («UTICO») as of September 30, 2019.

The main problems for insurers are: attracting new clients; costs rising of case settlement and insurance claims under Casco Insurance and Internal compulsory civil liability insurance of land vehicles owners, which are also higher than other types of insurance (these costs are generally recouped through cross-selling of related insurance products in within a large customer base); the fraud by clients.

Successful development of motor insurance in Ukraine requires:

1. Establish Casco Insurance uniform standards and intensify work on attracting new insurers, using new modern distribution channels;
2. Review the approaches to the losses settlement for eliminate the negative attitude to motor insurance, to improve the functioning of the Euro protocol and electronic policy;
3. To prevent dumping in the Ukrainian insurance market, this will require government involvement.
4. Ensuring the effective functioning of the bonus-malus system.

The prompt response of the insurance market subjects to the existing problems and new challenges will allow the insurance market to develop successfully, will promote the formation of insurers as powerful financial institutions, will help to create a positive attitude towards the national insurance system.

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## **PROBLEMS AND PROSPECTS OF DEVELOPMENT OF ENVIRONMENTAL INSURANCE IN UKRAINE**

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In present –day conditions of social development among the priorities of the



national interests of Ukraine especially notable is provision with environmentally and technologically-safe living conditions of citizens and society, conservation and renovation of the environment is especially notable.

Today they have proved direct relationship between pollution of environment and deterioration in health of population caused by negative changes in its gene pool.

In such circumstances, the actuality and importance of the citizens' right for safe and healthy environment gains particular acuteness. Moreover, lack of structuring of separate sectors and segments of economic mechanism, shapelessness of institutional structure of economy, low level of development of normative and legal framework to create conditions for environmental security causes objective necessity for investigating environmental insurance as its important component.

The problem of insurance against risks to do harm to various economic activities is not new to us. It's worth to point out that I.A Dubovich and H. R. Vasylyshyn wrote that the concept of "insurance" appeared with the emergence and development of commodity-money relations and social division of labor. This concept is associated with economic needs of society in forming means to eliminate the effects of extreme events and facts that occurred by accident or under the influence of the elements.

Content, methods and standart of insurance were improving and developing over time . In up-to date interpretation of insurance - is economic relations which appear as a result of formation and use of the insurance fund, which is created by special organization for reimbursement losses to juridical person and individuals caused by unforeseen occations or natural disasters.

A number of national and foreign scholars have investigated separate aspects of environmental insurance including O.S. Kuzmin, L.A. Prystupa, S.M. Rogach and others. However, these issues are not explored enough and require further review and summarizing and this fact determined the choice of problems for investigation.

The purpose of this article is to outline the essence of environmental insurance as an economic category and research the problems of environmental insurance system. The major goal of the work is to develop prospects for the development of the given type of insurance in Ukraine.

Due to intense environmental situation that recently has arised in the economic complex of the country and necessity to minimize existing risks dealt with these processes, the interpretation of the essence of the concept "environmental insurance " acquires special theoretical and methodological importance.

Of great importance is also understanding of environmental insurance as insurance of responsibility for enterprises - sources of increased environmental dangers for polluting the environment, that enables compensation of some parts of losses caused by the recipients of environmental pollution, creating additional sources of funding for environmental actions. [1, p. 281].

Analysing the state of the market for environmental insurance in Ukraine, it should be noted that it is characterized by low development rate. In Ukraine, the

environmental insurance services are provided by the following insurance companies: "Ukrainian environmental insurance company", Ukrainian-Russian joint stock insurance company "Avionica", insurance company "Energopolis", insurance company "Credo-Classic", insurance company "INGO Ukraine", NASC "Oranta", JSC USC "Generali Garant" and others. Of course, it is difficult to name the list of traditional types of environmental insurance in Ukraine taking into consideration their part in the insurance market and the number and level of insurance companies who give proper service in the market. Thus, we suppose that the environmental insurance market in Ukraine is at an early stage of its formation, that indicates the possibility of development of this type of insurance in almost all sectors of the economy of Ukraine [2, p. 202].

Problems that are observed in environmental insurance, have both theoretical and practical character. Learning of practical insurers' experience allows to identify a number of faults of that system of environmental insurance formed in Ukraine today: environmental insurance is still a tool of economics that is not developed enough and has not a multi-functional orientation; lack of environmental funds in the regions is also observed; low rates of insurance premiums operate, enterprises' dangers being of inadequate risk; typical training system far from being perfect, retraining and getting higher qualification for staff in the field of insurance against emergencies; objective needs to provide insurance protection not agreed with the existing rules of taxation; company information contains no characteristics about economic risk; lack of methodological(informative) framework for determining the degree of environmental danger; disparity of insurance principles of civil responsibility of management subjects to the damage caused [5].

For the modern Ukrainian democracy formation and further development of the insurance relationship is justified together with the experience of European countries that have definite achievement in the issues. Thus strengthening of legislation on environmental liability of industry companies in early 90s resulted into insurance policies against gradual pollution in the insurance market of European countries. Insurance of potential liability for damages as a result of environmental violations is accomplished in Germany, Belgium, Britain, the Netherlands and in other countries [3].

In the U.S. there is a Federal Law about close responsibility for restoration and preservation of the environment, known as "Superfund," thanks to which there was arranged a campaign to re disposal and reduction to the standards of safe storage of toxic waste. In addition, the U.S. federal government serves as a reinsurer to private insurance companies, which conclude insurance contracts of environmental insurance. Thus, insurers may only use 32% of contributions, the rest goes to the state. In case of excess of the limit set for the insurance expenses, the lacking funds are given by the state. [4]

Such mechanism can be used in Ukraine, for example, in Carpathian Regions when providing insurance against floods and landslides, or when implementing such

a large scale program as creation of a closed nuclear cycle [3].

At present the bulk of environmental insurance in the U.S.A is about one billion dollars. It is expected that Japan, Germany and Central Europe will be leaders in amounts expensed for environmental measures. The greatest tempos of market development are expected in Mexico, India, Argentina and Brazil.

Now the EU is improving the legal framework of environmental insurance, systems certain insurance of environmental risks are formed, a mechanism of general responsibility for damage caused by environmental pollution is implemented. In many countries, a trend of transition from the insurance of environmental risks under general liability to insurance for all the risks dealt with environmental pollution, but only with the environmental insurance contracts.

Thus, the analysis of national and international experience shows that environmental insurance is special and the most complex type of insurance that is specific. There are also difficulties dealt with establishing differences between unintentional and intentional risks; determining the probability of failure and amount of insurance payments; estimation of gradual risks when damage is found many years after environmental pollution. However, in general, insurance of environmental risks is quite effective economic mechanism that can compensate for the damage done to third parties, and the very insurers' expenses arise as a result of accidental pollution. This type of insurance promotes preventive action, leading to a decrease of expenses on environmental protection; increasing of direct foreign investment, because it reduces the general investment risk and so on. So, environmental insurance contributes to economic growth of the country and improving the quality of the environment [2, p. 203].

Taking into consideration the above-mentioned problems of formation of Ukrainian environmental insurance market, as well as the experience of other countries, we can identify the following future directions of environmental insurance:

- improving the legal framework;
- creation of economic stimuli for the development of environmental insurance through consideration of tax policy;
- increasing the capitalization of insurance companies;
- development of reinsurance, including state participation, in order to redistribute risks with large amounts of probable losses;
- consideration of risks of gradual pollution by the example of international experience within the national environmental insurance;
- improving the use of environmental auditing mechanism that serves as a powerful information source when making environmental insurance;
- strengthening of control over the activities of entities that are potential polluters of the environment, increasing the size of financial penalties for lack of preventive measures to prevent pollution at these sites;
- guaranteeing of the rights of individuals who have had losses as a result of an accident at a potentially dangerous object, receiving compensation for damage caused

to their health and property;

- improving the coordination of the work of public authorities dealing with public safety and environmental areas for the development of estimation and environmental risks insurance;

- arranging measures to inform potentially interested parties about the benefits of environmental insurance as an effective tool to ensure the environmental safety of subjects - polluters and citizens residing in the territories. [3]

The complex development of environmental insurance in Ukraine will help to reduce the budgetary costs for liquidation of accidental and emergency situations; ensure proper use of funds allocated for the elimination and prevention of environmental pollution.

So analysing the above mentioned facts, we conclude that environmental insurance has an extremely important role in society, as it provides a guarantee of full or partial compensation for damage caused as a result of accidental environmental pollution caused by business entities and creates conditions and provides economic stimulus for prevention of accidental environmental pollution.

Prospects for further researches is the analysis of the implemented areas of environmental insurance in Ukraine, as well as their impact on the public interest, environmental pollution and total society.

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## **METHODS OF EVALUATION THE COST OF HUMAN LIFE: THEORETICAL ASPECTS**

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Today many economists are wondering about finding a single method of estimating the financial equivalent of the cost of human living. After all, it is not

possible to clearly determine the state's expenses for birth, education, medicine, insurance, working capacity, expenses during the period of unemployment, pension and expenses in case of death of a person - a citizen of Ukraine. Each category of population in different periods of economic, social and political peculiarities will have their own financial estimation of life cost.

From an economic point of view, it is possible to roughly calculate the cost of human life at a certain point of time. Economists offer a variety of methods for evaluation the financial equivalent of human living cost with its advantages and disadvantages. The results of analyzing the methods are presented in Table 1.

Table 1 - The results of the analysis of methods of estimating the value of human life

Authors	Method	Disadvantages
Bliznyuk V.V.[ 2 ]	Profit Method (Personal Capital Method)	Takes into account economic processes within the country. The statistics change significantly over time, so the results will be lower than the actual figures.
Bliznyuk V.V., Shevchuk O.O. [ 2-3 ]	Method of discounting future income	The method is inaccurate, taking into account only the average of annual income and death rates. The results depend on the discount factor, since the annual wage index is calculated.
Bliznyuk V.V. [ 2 ]	Cost method	The calculation is made on the basis of average costs, since each family in Ukraine has its own standard of living, different financial incomes, expenses, needs, etc.
Bliznyuk V.V. [ 2 ]	The method of determining the cost of human life EPA	The calculation does not take into account such indicators as age, income, education, health, etc.
Tsarenko V.I. [ 4 ]	Method of calculating legal costs	Compensation for moral damages, loss of health or life are of different nature, determined based on the reasons for the harm, the results of the examination, alibi and on the basis of the articles of the Criminal Code of Ukraine.
Tsarenko V.I., Mykytenko D.O., Timchenko O.I. [ 4-5 ]	The cost of personal voluntary insurance	It depends on the type of insurance, the cost of such insurance in different insurance companies, insurance premiums and insurance service.
Shevchuk O.O. [ 3 ]	Actuarial method	The accidental nature of the death is not taken into account.
Shevchuk O.O. [ 3 ]	The method by which the calculation is based on information about the current earnings of an able-bodied person	The cost of living is approximate, because the calculation is based on data for the average person aged 30 years.
	Methodology based on the estimation the value of person's life based on the labour market conditions	The method is inaccurate because it only takes into account the average of annual income and death rates.
Muzhilovsky V.V. [ 6 ]	Cost of saving an expected extra life	Cost of living depends on the nature of the actual implementation projects, working conditions, health of employees, their age, etc.
Mykytenko D.O., Timchenko O.I. [ 5 ]	A method of assessing consumer behaviour	Imperfection lies in a person's social status, income, and purchasing power.

So, the methods described above for calculating the financial equivalent of the cost of a person's life are not officially approved in the legislation of Ukraine. Therefore, it is necessary to improve these or search for new methods for determining the cost of human living.

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## **LIFE INSURANCE AS ONE OF THE SAVINGS MECHANISMS IN UKRAINE**

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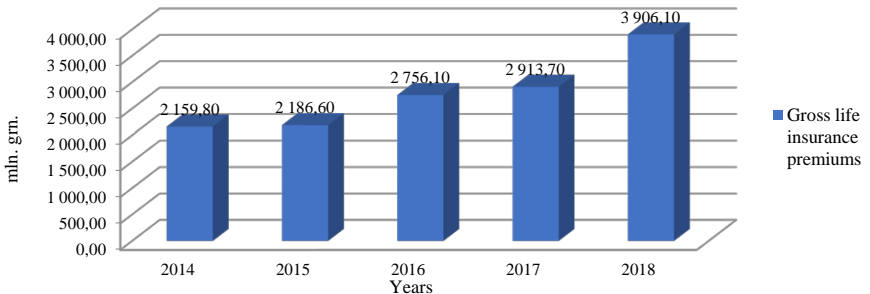
Citizens' well-being is the most important aspect of the economic development of any country. Developed countries are characterized by a high level of development of the service sector, a constant increase in macroeconomic indicators, the use of new technologies in production, a high level of social protection of the population etc. With stable economic development in the country, citizens have opportunities for long-term financial planning. This makes it possible to be confident in the future and maintain a high level of social status of citizens. [1, c. 28]

Life insurance is one of the main savings mechanisms. Due to life insurance, citizens can minimize the risks associated with loss of income from the disability or death of a family's member, and secure a decent standard of living after retirement. This savings mechanism is much more attractive because, when compared to a regular bank deposit or any other investment, it allows to receive the specified amount of money even in the event of the depositor's death. In addition, the

guaranteed payment after the end of the contract is always higher than the insurer's contributions. As for the socio-economic development of the country, it is safe to say that life insurance is a powerful source of long-term investment in the economy of the country. This makes it possible to expand the economic and social potential of the state, thereby ensuring a high level of welfare of the population. Therefore, it can be concluded that in the conditions of market economy development, life insurance, as one of the mechanisms of saving, becomes important.

However, the life insurance mechanism in Ukraine has not yet been sufficiently developed. If we analyze the share of collected insurance premiums on the Ukrainian insurance market as a whole, for example, in 2018, the share of life insurance in the total amount of all types of insurance is only 7.9%. For example, in neighboring Poland, the figure for 2018 was 34.9% [2]. This trend persists in 2019: according to the results of the 3 quarters of 2019, the share of gross life insurance premiums is 8.1% of the total premium collected. Therefore, it can be concluded that general insurance is more common in Ukraine. In our country, people are more likely to insure the risks of property loss than the risks of their own life.

However, it cannot be said that the life insurance market in Ukraine is not developed at all, and life insurance is not one of the main savings mechanisms. This can be refuted by using the statistics of collected insurance premiums in Ukraine over the last 5 years, which is presented at pic. 1.



Picture 1. Dynamics of gross life insurance premiums in Ukraine in 2014-2018 [3]

Thus, from this chart we can conclude that every year the total collected life insurance premiums increase in Ukraine. This shows that every year more and more people sign life insurance contracts, that is, more and more people are choosing this type of long-term savings. Although this type of insurance is not yet widespread in our country, a positive tendency of its development in recent years has been observed.

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**SECTION 2.**  
**FINANCIAL MARKETS IN THE ERA OF AN AGEING**  
**POPULATION**



## DO WE MAKE RATIONAL RETIREMENT DECISIONS? BEHAVIOURAL APPROACH IN THE PENSION ECONOMY

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Due to the population ageing, the pension schemes in developed countries nowadays are facing a great deal of challenges. Among them the most prominent are ensuring pension benefits adequacy, restoring the long term financial sustainability and suitable responding to the changing needs of societies (European Commission 2003). In the most general level, policymakers who try to reform the modern pension schemes to make the pension benefits adequate can apply two solutions. They can either introduce a deep systemic reform (eg., switch from defined benefit to defined contribution scheme as have been done in Sweden and Poland) or perform a less sudden parametric reform. The later may concern the basic parameters of pension system, such as: level of contribution, level of benefit and retirement age. Recently, among the mainstream economist and politicians the issue of raising the statutory retirement age has become particularly popular.

In recent decades many developed countries have increased the statutory retirement age. 21 out of the 36 (as of 2019) OECD Member States have already raised or intend to raise the statutory retirement age (OECD, 2017b). The statutory retirement age is, however, extremely difficult to raise as it is always associated with the great reluctance of the society. It may also cause a great political risk for the government. Furthermore, it is reported that in many countries, there is a significant difference between the statutory and the effective retirement age (the average age of exit from the labour market). On average, the effective retirement age of men in the European countries is 0.6 years lower than the statutory retirement age. For women, that difference equals 1.2 years (OECD 2017). Such high differences must have an impact on efficiency of the pension policy.

Thus a profound question that underlies this research is posed - *what determines the retirement decisions?* There is a considerable number of studies that aim to provide an answer to such a question. The vast majority of them focus on developing a normative theory. They are set in the neoclassical mainstream. The constraints of the neoclassical economics (e.g., the paradigm of rational choice, the information accessibility) make it, however, impossible to develop a complex, descriptive model of pension behaviour. The neoclassical life-cycle model is claimed to be insufficient to explain the whole complexity of retirement behaviour. Therefore this study attempts to go beyond the neoclassical framework and analyse the attitudinal and behavioural retirement determinants

At the theoretical level, the study addresses the question about the behavioural determinants of the retirement decisions. As far as its application is concerned, the presented study delivers the effective encouragement to extend the period of their

professional activity. The study deliverables arise from achievement of the following objectives of the study 1) to identify potential factors that affect individual retirement decisions on the basis of the neoclassical paradigm of rational choice; 2) to discuss the behavioural factors that influence retirement decisions; 3) to present the complex approach to the retirement decisions determinants.

Contrary to the major body of research, this study is based not only on the neoclassical approach but also incorporates conclusions drawn from the latest achievements of behavioural economics. Apart from the vast literature review, the main contribution of the study is a discussion about different behavioural factors that are taken into account in pension decisions. In addition, the study presents a comprehensive approach to the determinants of retirement decisions. This approach includes four groups of key factors: 1) economic and institutional, 2) psychological, 3) sociological and cultural, and 4) individual features. The posed research questions are addressed by means of the meta-analysis of the body of the previous research. Thus the study is based mainly on the analysis of the existing studies and the synthesis of the conclusions derived from this analysis in the light of the behavioural economics. Therefore, the article conclusions include the list of potential behavioural determinants of retirement, that are not the empirically proved ones.

## **VULNERABILITY OF THE BANKING SECTOR TO THE SYSTEMIC RISK IN UKRAINE**

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The materialization of systemic risk during the recent global financial crisis demonstrated that the financial safety net and financial institutions significantly underestimated it. Systemic risk turned out to be much more than just the composition of individual types of risks affecting financial institutions. While credit risk, liquidity risk, operational risk, etc. can be directly attributed to a given institution, systemic risk can only be attributed indirectly. Before the financial crisis those types of risk were usually considered separately. However, the interaction (correlation) between them leads to undesired and unexpected consequences and when aggregated to systemic risk. Systemic risk evolves along with the development of financial markets, regulations and collective behavior of market participants, and it may be prompted by regulatory arbitrage.

The crisis of Ukrainian banking system during 2014-2017, have highlighted high level of systemic risk in the banking sector. Among the defaulted banks local private banks that were associated with industrial business groups held leading

position. Such banks performed related party lending risky policies at the expense of individuals. Other group of liquidated banks was presented by banks with non-transparent ownership structure, some of them also was involved in money laundering. Due to the interconnections between banks, systemic risk contagion became a real threat for the Ukrainian banking sector.

Based on the comparison of systemic risk definitions in the literature, the following conclusions can be drawn:

- systemic risk concerns a large part of the financial system or a significant number of financial institutions and is considered to disrupt the performance of the financial system and its functions, such as financial intermediation.

- a key element of systemic risk is the transmission of disturbances (shocks) between interconnected elements of the system, which may ultimately have a negative impact on the real economy.

- systemic risk definitions began to appear in the literature in the mid-1990s, but their “creation” has clearly intensified after the outbreak of the global financial crisis.

- before the crisis, definitions put more emphasis on the contagion effect and the large scale of this phenomenon. However, after the outbreak of the crisis, more attention has been paid to disturbances in financial system functions.

It is frequently emphasized that systemic risk applies to a significant part of the financial system or a number of financial institutions and impairs the functioning of the financial system, e.g. financial intermediation. Before the crisis, more emphasis was put on contagion and the large scale of the phenomenon, while after the outbreak of the crisis, more attention is being paid to limiting the ability of the financial system to function, which results in defaults and has a negative impact on the real economy. Central banks often focus on providing definitions of financial (in)stability rather than of financial crisis and systemic risk, which is usually narrowly perceived as a threat to the entire financial system or associated with impaired functioning of the payment system.

We consider systemic risk of the financial sector as the probability of occurrence of systemic events of an adverse nature caused by exogenous or endogenous shocks that cause instability of the financial market and can lead to insolvency of a significant number of interconnected financial institutions, as well as to disturbances in financial system functions, and to the loss of confidence to the financial intermediaries.

Systemic risk survey conducted by the NBU in May 2019 has shown, that most respondents said that the state of the financial sector had improved over the last six months, with only 4% reporting a deterioration. Respondents mainly had a neutral outlook for the financial sector’s prospects over the next six months. Most top managers expected no changes.

Despite there being high assessments of the current state of the financial sector, 36% of the surveyed financial institutions said that the total risk level was high. Assessments deteriorated, as the balance of responses moved down compared to the

previous survey, to (-18%).

According to the survey, the key factors, which have impact on the financial sustainability and may lead to the systemic risk contagion in the financial sector, have had rather political than economic nature. The analysis of the survey's data allows to represent some conclusions:

- corruption and the performance of the law enforcement agencies and the judicial system are considered as the main sources of risk.

- the top five sources of risk also included political and social conditions in Ukraine, the state of cooperation with international financial institutions, the current protection of creditor and investor rights, and fraud and cyber threats.

- a lot of respondents cited political conditions and the state of cooperation with international financial institutions as sources of very high risk.

- a majority of systemic risk sources have exogenous and non-economic nature, while endogenous sources are not crucial for Ukrainian financial sector nowadays.

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## **ADVANCED METHODS OF APPLYING BLOCKCHAIN TECHNOLOGY IN THE FINANCIAL SECTOR**

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Blockchain is a distributed database that is a continuous and sequential chain of blocks for containing information, but without united storage center. That is why the information in such database is more secure and the data synchronization is faster. We can say that blockchain as a technology emerged due to the cryptocurrency development. However, its use now is more versatile, as it has many obvious advantages for storing, processing and exchanging data.

It worth saying that the financial sector has always been characterized by a high level of innovation, because its competitiveness is very high, that is why the use of innovative technologies, products and services helps to increase competitive advantages in the market and save on costs. So that is why the financial sector was one of the first to focus on blockchain technology, since simplifying, accelerating,

and reducing transactions cost for market players is extremely important. Therefore there are many areas in the financial sector for blockchain application: banking, insurance, stock exchange, currency market, and securities market. The major benefits of blockchain-based transactions are the elimination of the “human factor” problem and unnecessary intermediaries, maximization of transactions security level in case of fraud or hacking.

In general, global financial companies invest about \$ 1.7 billion in blockchain technology each year. In 2018, the budget allocated to blockchain technologies in the financial sector has increased by 67% [1]. Blockchain-based projects can deliver significant cost reductions, help optimize cash flow, reduce the time of calculations, minimize risks, and reduce capital cost. Moreover, banking institutions make the lion’s share of these investments, because they are most likely to respond to technological challenges in their sector.

For example, Spanish bank BBVA became the world's first global bank to use blockchain technology for corporate lending. Likewise Chinese banks have been using the capabilities of the decentralized registry in operations since the beginning of 2017. These are banking institutions such as Bank of China, China Construction Bank and Agriculture Bank of China, China Merchants Bank. For example, the Agriculture Bank of China has developed a decentralized system that provides unsecured loans to online farmers. China Construction Bank uses blockchain to issue interbank and international small business loans. In addition, Chinese banks introduced fully digital wallets based on blockchain technology for bank customers.

Besides, more than twenty global banks such as Goldman Sachs, UBS, JP Morgan and others have teamed up with the R3 project to optimize and improve transfers between financial corporations. Strategic plans for R3 is to develop a whole set of projects based on blockchain technology, which is a kind of combined platform for financial transactions [1].

In insurance, blockchain technology can, first and foremost, help streamline workflows and expedite inquiries with government agencies, as well as streamline insurance events and insurance risk assessments, increase the level of collaboration between insurers, insurance agents, brokers, clients, and even more.

Although statistics shows that only 8% of 8000 new blockchain-based projects remain operational, because the life cycle of such projects is very short and their practical implementation quickly loses its relevance and usefulness, but the blockchain trend is developing extremely actively [2].

However, only 3.4% of all innovative projects in the financial sector are based on blockchain technology in Ukraine [2]. This is extremely low compared to global trends of the financial sector, where blockchain funding is gaining momentum every year. At the same time, according to 2018 data, Ukraine is among the 14 world leading countries in this technology implementation. This indicates that blockchain projects are being implemented in Ukraine, but in the financial sector, their use is still rather inactive.

Furthermore, the most promising area of blockchain application in the financial sphere is the development of interbank and international payments new system. Many companies are working on this project in parallel. A multifunctional, fast-paced payment system that can support and process large data sets will be an innovative breakthrough in the financial market and will change the competitive position of many global players.

As a conclusion, the low popularity of blockchain projects among Ukrainian financial companies lies not in the cost of their development and implementation, but in the conservativeness of the domestic financial sector, which is not ready to switch to radically new technologies and change old but well-established algorithms of their work. However, global trends will increasingly influence the vector of Ukrainian business movement, so we can expect an increase in interest in blockchain technology in the near future. Especially considering that the use of blockchain in the financial sector has significant advantages and cost savings. It should be understood that the use of blockchain technology is not possible for all financial transactions and will not always bring economic benefits. Although the spectrum of its use in the financial sector is extremely broad, it will still not be possible to optimize all operations.

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## **PROSPECTS AND RISKS OF THE IMPLEMENTATION FINTECH INITIATIVES IN UKRAINE**

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Banking University*

Fintech offers a significant value for the distribution of financial services in new areas and different segments of the economy, especially in open banking. Given the high percentage of unbanked and underbanked populations in most markets, and the difficulty for banks to service micro and small enterprises and those living in remote areas, there is a funding gap in the market. This provides a substantial investment opportunity for the FinTech initiatives across the world. High cost is one of the reasons preventing customers from using the required service. Some of bank's clients, especially those in poor countries, get excluded from the financial services

world. Meanwhile, FinTechs are working on the reducing of the costs by providing services through innovative ways. New online payment service providers eliminate high bank fees by matching its users' currency demand and supply. This has particularly benefited many customers which use cross-border payments.

A FinTech ecosystem combines all the players in the financial market: FinTech start-ups, regulators, banks, international payment systems, associations of bankers and financiers, incubators, accelerators and vendors.

One of the key reason for the development of FinTech is an enabling legal and regulatory environment. In financial markets such as the United Kingdom, Singapore and Hong Kong, the use of regulatory sandboxes as well as an appropriate legal environment have helped to stimulate FinTech development [1; 2].

According the Bank of Lithuania, FinTech has a huge competitive advantage over other financial institutions licensed in Lithuania, allowing it to significantly reduce its set-up and operating costs when entering European financial markets. A business - friendly regulatory environment, well-developed infrastructure, Europe's fastest Internet and huge talent pool make Lithuania attract many international FinTech institutions. The official policies of the Bank of Lithuania and the Lithuanian government created a regulatory environment and ecosystem, enabling Fintech to attract foreign financial institutions and FinTech start-ups into Lithuania. It is quick to adapt, focusing its business environment to meet the needs of specific industries. It has already leveraged its highly educated talent pool and streamlined its regulatory framework to become a leading destination for international Fintechs.

Fintech initiatives in the European Union can obtain a lot of benefits of licensing business there. Getting direct access to the European Payment Market through setting-up in Lithuania, the Company aims to trim the list of banks and reduce the charges for payments, which currently are higher than it would be if Fintech companies had direct EURO Clearing. In addition, the shareholders of these companies have the following reason to establish in Lithuania: the possibility for non-bank financial institutions to get its own SWIFT cod; non-banks have direct access to Single Euros Payment Area (SEPA) through the CENTROlink payment system managed by the Bank of Lithuania; the Bank of Lithuania's infrastructure for instant payments that according to European Instant Payments Initiative will guarantee pan-European reach; the "passporting" rights, which allow the provision of the financial services in all European Union without any additional licensing.

In case of Ukraine FinTech is beginning to take off with more than 60 companies at different stages of maturity. Experience shows, that Privatbank (prior to nationalization) was arguably the largest FinTech example in the country, offering technological services that were ahead of not only the local Ukrainian market but also the European one. FinTech started to draw the attention of the financial sector players of Ukraine only in 2017 after a series of FinTech related forums and events. It is expected that more focused efforts to support the development of this important sector will take place by 2020 [1].

FinTech development is also being actively supported through various initiatives being undertaken by the National Bank of Ukraine. It approved the Comprehensive Program of the Ukrainian Financial Sector Development (Resolution No. 391 dated 18 June 2017) which includes a number of initiatives, such as cashless 2020 Strategy, exchange of documents in electronic format using electronic signatures cancellation of stamps, seals and paper copies, storage of documents in electronic format, remote identification of a person, possibility to order financial services online; electronic certification of scanned copies and signing of cash documents; possibility to use the Bank ID system for remote identification; protection of the rights of financial services users; new rules to facilitate the licensing of payment service providers.

It is important to note that the top management of Ukrainian FinTechs consists mainly of ex-bankers (70%) with experience at large commercial banks, for example, Privatbank, FUIB, Raiffeisen Bank Aval, Universal and Alfa-Bank. About 23% of managers are business environment managers and 7% are from the IT sector. Over 37% of the FinTech providers are engaged in the B2B market segment and target SMEs. Several of the FinTech providers have partner relationships with banks and international payment system providers. These include, white labeled P2P card service transactions, supporting co-branded payment cards and payment services, The primary partners include PUMB, Oschadbank, Alfa Bank, Raiffeisen Bank Aval, Tascombank, and international payment service providers.

Currently, the main challenges and risks facing the Ukrainian Fintech market include the legal and regulatory environment; slow adopt to innovations by traditional banks; lack of open APIs within the banking; limited access to capital and financing for FinTechs. Appropriate adjustment of these risks can build and promote a resilient and thriving financial system, and engage many users, suppliers, innovators, peers to help shape and deliver a resilient and innovative payment ecosystem in our country.

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## **FUNCTIONS AND USE OF CRYPTOCURRENCIES AS THE FINANCIAL INSTRUMENTS**

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Bitcoin, blockchain, initial coin offerings, cryptocurrency exchanges appeared in the 21st century and changed our lives. As you have no doubt noticed,



cryptocurrencies have caused quite the uproar in the media, online forums, and perhaps even in your dinnertime conversations. Despite, the meanings of these terms still elude many people's comprehension.

The cryptocurrency market cap has been projected to reach as high as \$1-2 trillion in 2018. The technology underlying cryptocurrencies has been said to have powerful applications in various sectors ranging from healthcare to media.

Consequently, summing up the above, we will generalize the interpretation of cryptocurrency as a decentralized digital value measure that can be expressed in digital form and functions as a means of exchange, saving, or accounting based on mathematical calculations, is the result of them and has cryptographic protection accounting.

Cryptocurrency is a fast and reliable payment and remittance system based on the latest technology and is not controlled by any government. It should be understood, that, the concept of cryptocurrency (virtual currency) and electronic money are two different concepts, although they have similar features. Both have Digital Format. But if we compare customer identification approaches: in case of using Electronic money, we use Standards developed by the Financial Action Task Force (FATF), in case of using cryptocurrency it is anonymity.

Electronic money means units of cost that are stored on an electronic device are accepted as a means of payment by other persons than the person who issues them and is the monetary obligation of this person, executed in cash or in a formless form.

One of the ways to get a cryptocurrency is mining. Mining provides activities to support the distributed platform and the creation of new blocks with the ability to receive remuneration in the form of issued currency and fees in various cryptographic trades, in particular, in Bitcoin. Mining is a difficult process and the complexity of calculations is constantly increasing.

With the notion of cryptocurrency, many people are commonly identified with Bitcoin, the first and most famous of them, although more than 1000 different cryptocurrencies are already in circulation on the exchanges. Since Bitcoin's cryptographic emissions are limited, and eventually becoming more resource-intensive, there are proposals to equate it with "digital gold". Bitcoin has a dominant share of capitalization of crypto volume.

With the active development of crypto-exchange relations, the introduction of their legal regulation becomes an important necessity. But in the first place, each country should give the legal status of cryptocurrency to foreign currency. Different countries have different ways of solving this problem. In some countries, cryptocurrency is defined as goods, in particular, the United States has given cryptocurrency status to a commodity, and now companies that want to use it for trading must properly register, obtain licenses, and track transactions executed. In Australia, the use of cryptocurrency goods is governed by the law on goods and services, according to which it falls under double taxation.

In the United Kingdom, cryptocurrencies are referred to as "private money",

which means that (VAT) tax from their value is not charged for converting into any other currency but is paid for the supply of goods or services in exchange for a cryptocurrency. In Japan, digital currency has been recognized as a tool with the same payment functions as the national currency.

Germany recognized Bitcoin as a settlement currency and a form of private money.

Another country that has a good reputation for using cryptocurrency is Sweden. Cryptocurrency is widely used here in the form of a payment instrument.

While the US has been cracking down on unregulated activities, in countries such as Germany and the UK, cryptocurrencies are treated like "private money" and are not subject to tax outside of commercial use. A handful of smaller European banks are breaking ranks with the rest of the sector by giving investors access to cryptocurrencies and advising on initial coin offerings, despite an intensifying effort by regulators to clamp down on the area.

However, the operating principles specific to cryptocurrencies sometimes make the problems more likely to occur, and thus more disturbing. In addition, the same principles are responsible for a certain number of risks unique to cryptocurrencies, such as spoofing payment information and phishing; Hacking a payment gateway; loss of a wallet file; insecure initial coin offering (ICOs) etc.

In 2017-2018 years, investing in projects associated with a blockchain or cryptocurrencies became very popular among cryptocurrency holders. Bank Frick advises companies on initial coin offerings and vets their investors before they can buy tokens in return for cryptocurrencies such as bitcoin and ether. That aspect demands from cryptocurrency holders run high-quality antivirus protection to protect the devices which they use to access cryptowallets, trade on crypto-exchanges, and so on.

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## **CRYPTUAL CURRENCY MARKET RISKS AND ITS ADJUSTMENT SYSTEM**

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At the beginning of the third millennium, a new financial phenomenon emerged in the financial market - crypto currency, the key feature of which is the absence of

any internal or external administrator. Along with certain advantages, crypto currencies have significant disadvantages that are threats (destabilizing factors) to the financial markets, in particular:

- the absence of any regulation on the part of monetary regulators;
- limited monetary functions, that is the main features of a particular expression of the essence of money;
- an extremely large number of heterogeneous types of crypto currencies, which is ten times the number of official national and regional currencies;
- unpredictability of crypto currency exchange rates;
- technical factors, which are due both to the need for technical prerequisites for the organization of crypto currency circulation, and to technical risks;
- the possibility of using crypto currencies by criminal and terrorist organizations to legalize funds obtained through independent means;
- other crypto currency threats for the financial markets.

Regulation of the crypto currency market is a set of regulatory measures implemented by international organizations and the state in the field of extraction and circulation of crypto currencies. Such regulation can occur in three markets - global, regional and national, which will differ in regulators, forms, methods and instruments of regulation. The problem of such regulation should be considered only in terms of a systematic approach. The object of control of this system is actually the crypto currency market - a set of elements involved in the issue and circulation of crypto currencies, and the main elements of the system of regulation of the crypto currency market - the crypto currencies themselves, market participants (first and foremost professional), the principles on which the system, models, levels, methods will be based and regulatory tools.

In the system of regulation of the crypto currency market, the most important elements are its participants, namely:

- crypto currency market regulators - central banks or specially created bodies;
- participants of the primary crypto currency market in which crypto currency mining is taking place - creators of new crypto currencies, companies-owners of mining equipment, crypto currency miners (miners);
- participants of the secondary market of crypto currencies, which serves crypto currency buying, selling, exchange and conversion operations - owners, sellers and purchasers of crypto currencies, online and offline crypto currency exchangers, crypto investors, organizers of crypto currency rounding.

The basic principles of functioning of the crypto currency market system should be followed by principles:

- equality of participants of the crypto currency market, protection of their

rights and legitimate interests;

- market transparency, stakeholder access to what information they may receive in accordance with regulations;
- non-interference (or minimal intervention) of the state in the functioning of the market;
- regulation of relationships between market participants;
- stability of legislation on the functioning of the market;
- constant monitoring of the crypto currency market by the financial regulator.

Regulation of the crypto currency market, like any other phenomenon, involves two levels - legislative and executive. Given the nature of crypto currencies, it is legitimate, in our view, to state that there are two options for regulation at the legislative level: the first is that crypto currencies are recognized as an unknown instrument that cannot be adapted to existing laws, and therefore there is a need to create a new legal framework, which will extend to the entire crypto sphere; the second is that crypto currencies are recognized as an analogue of the common currency or a variant of currency, which requires some changes and additions to the existing legislation. Regarding the executive level, the main problem for regulators is the impossibility of technical control over the mining and circulation of crypto currencies (abolish, restrict or verify crypto currency transactions), which is why contractors actually have two known ways of regulating the crypto currency market - regulating the movement of crypto currencies where they are relevant to the current legal field, or the introduction of crypto currencies into certain areas of activity and their regulation through the tools that regulate these areas.

According to the form of state participation in the regulation of economic processes methods for regulating the crypto currency market can be divided into administrative or administrative-direct (direct) and economic (indirect) methods. Each of these methods is implemented by specific tools of regulation of the crypto currency market.

Tools of administrative methods for regulation of the crypto currency market: prohibition of crypto currency transactions (all or individual types); licensing of crypto currency transactions (all or individual types); official registration of professional participants of the crypto currency market; regulation of the rights and obligations of professional participants in the crypto currency market; identification of consumers of financial services in the field of crypto currencies; verification of the origin of the funds involved in crypto currency transactions; tracking crypto currency transactions related to money laundering (money from drugs, arms trafficking, counterfeiting, gambling, racketeering, terrorism, etc.).

Economic methods of regulating the crypto currency market include the following instruments: taxation of crypto currency transactions (all or individual types); tax and regulatory holidays; equating mining and other crypto currency transactions to business.

## **SOCIAL AND ECONOMIC CONSEQUENCES OF FICTITIOUS ENTERPRISES ACTIVITY**

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Inconsistent conduct of economic reforms, the presence of corruption in higher authorities, the unwillingness of law enforcement and other authorities to work in the new conditions - the main reasons for the emergence of economic entities engaged in illegal activities. Therefore, strengthening the rule of law and law in the state, increasing the effectiveness of the fight against crime and corruption, in particular with its organized forms, in today's conditions remain one of the main pillars of the activities of all state bodies and society as a whole.

One of the most important problems of today is that no normative legal act of Ukraine defines, to a sufficient degree, the concept of "fictitious enterprise" and signs of fictitiousness.

However, at the same time as the legislative term "Fictitious Enterprise" there are a number of other terms and varieties of fictitious enterprises that require the study and clarification of their essence and content of activities. So, in scientific publications you can often find terms like "fictitious firms", "false enterprises", "virtual enterprises", "pseudo enterprises", "pseudo firms", enterprises with signs of fictitiousness and other names, which mean fictitious enterprises, which function in order to cover illegal activities, but in the direction of their fictitious activities, invested in different content and concepts [1, art. 41-44].

On the basis of the analysis of scientific publications, one can distinguish the following main features of a fictitious enterprise: the registration of a business entity is carried out on fake or lost documents; The founders of such an enterprise are those who do not intend to engage in economic activity; Realization of real business activity is accompanied by non-payment of established taxes and payments and violation of the reporting procedure; the enterprise is located at the non-existent address or is not located at the place indicated in the documents indicated in the documents; the lack of funds on the bank accounts of the enterprise or, conversely, the excessive amount of financial transactions in the bank accounts of the company that was recently registered; absence in the registration business telephone number, e-mail address and other contact information, etc. [2, p. 247].

A sign of fictitiousness is also the lack of genuine entrepreneurship, the real intention to engage in entrepreneurial activity, fixed in the constituent documents and related to the production of goods, the performance of works by providing services and use of business entities to cover activities or activities, for which there is a ban. For a fictitious enterprise is characterized by hidden economic activity that is difficult

to reveal to law enforcement agencies by traditional methods. Most of these enterprises formally contain the conditions specified in Art. 55 of the Commercial Code of Ukraine, but in reality they form the shadow economy sector and are aimed at reducing the size of tax liabilities to the budget of actually working enterprises, money laundering. Identify in practice fictitious enterprises in most quite difficult. Thus, at the stage of state registration, it is possible to identify only certain operational signs of intent to commit an offense (registration of a fictitious enterprise on a person or person with a problem social status, etc.). One of the factors that indicates that a person does not intend to engage in statutory activities and use a registered company to cover illegal activities or perform prohibited activities is not a one-time fact of registration of business entities in their name and not carrying out any of them financial activities. The commission of criminal acts in fictitious business is reduced to one scheme, in which funds are "pumped" from one account to another and at one stage are seized offenders, after which the firm either ceases to exist or declares bankruptcy [3].

Fictitious business entities are created: for legalization of proceeds from crime for concealment to conceal from taxes in cases of contraband import of goods or non-payment of customs payments to the state budget for fictitious exports, to conceal the facts of occupation by prohibited types of economic activity [4, p. 133], it is also relevant that, despite the current state of the economy, it is advantageous for business entities to work with fictitious firms. That is why the employees of the controlling and law enforcement bodies are involved in such unlawful acts. All these crimes affect financial-credit and banking activities, foreign economic activity and privatization [5, p. 127-132]. Consequently, the analysis of court practice and the questioning of specialists indicates that there are serious difficulties in combating the fictitious enterprise due to the imperfection of the legal constructions of individual concepts of contradictions in the interpreted law, the lack of generalization of legal and judicial practice. The losses incurred by such enterprises are so high that the constant improvement of the forms and methods of rape with this type of crime remains a very urgent task. Therefore, the problems of the existence of fictitious enterprises require a prompt legal settlement, namely - the normative definition and legislative consolidation of the concept of "fictitious enterprise". An enterprise must be engaged in an enterprise that is virtually non-existent (invented, or officially entered in the state register of business entities), an enterprise registered or re-registered at the front office.

Therefore, the problem of the existence of a fictitious enterprise requires an early legislative settlement, because of the lack of gaps in the legislative framework, there is an increase in the number of crimes committed by false companies and their cover in the tax system. The social dangers of a fictitious enterprise are the infliction of property damage to legal and natural persons and the state, which manifests itself in increased unfair competition, illegal conversion of cashless cash, in facilitating the legalization (laundering) of proceeds from crime, concealing the facts of occupation

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**SECTION 3.**  
**FINANCIAL ASPECTS OF CITIES AND REGIONAL**  
**DEVELOPMENT**



## EFFECTIVE FINANCIAL SUPPORT OF THE DEVELOPMENT OF THE TERRITORIES OF UKRAINE

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Effective financial support for the development of the territories of Ukraine is the main objective of decentralization and reform of the administrative-territorial system. Therefore, [2; 3; 7] that the role of financial and credit participants and enterprises in UTC is decisive. The role of banks in UTC is as follows:

1) commercial banks integrate the activities of three entities: financial (bank, insurance company, investment company, pension fund, consulting firm, brokerage offices, foreign economic units); production (production enterprises) and commercial (foreign trade companies, transport companies, etc.). Banks - UTC entities are able to significantly reduce the risk of investment through the control of users of loans and participation in the development of business plans;

2) banks can promote beneficial business contacts of enterprises and organizations that are part of UTC ;

3) banks can efficiently mobilize, distribute and redistribute and temporarily free funds of all entities of UTC in order to achieve the best final economic result of UTC as a whole;

4) banks are interested in the continuous improvement and regulation of cash resources within the framework of UTC ;

5) banks are the main tool for attracting foreign investment.

The investment activity of the insurance company UTC is one of the main factors in ensuring its effective functioning, including well-organized investment activity:

- determines the possibility of providing insurance services due to the formation of sufficient amount of insurance reserves;
- provides to a certain extent the quality of insurance services and determines the market position of the insurer;
- affects the cost of the insurance product and the actual performance of obligations by the insurer, due to the term of insurance payments;
- gives the opportunity to the owners of insurance companies to develop business: by investing insurance reserves there is accumulation of funds to increase its own resources.

In developed countries, insurance companies in terms of investment in the economy (and in particular) exceed the generally accepted investors - banks and investment funds [2; 3]. This situation is real, since the volume of insurance reserves and the term of their placement make insurance companies the most powerful financial and credit institutions.

One of the possible tendencies in the cooperation of the financial sector of UTC is the active interaction and even the unification of banks and insurance companies.

It is proved that close cooperation between banks and insurers is facilitated by: the need to accumulate all cash flows in one system, the possibility of significant expansion of the client base, the possibility of providing a full range of services, diversification of capital, increase the rate of profitability of investment resources, the possibility of using the regional network of institutions, increase bank profits in form of commission on the sale of insurance products, etc.

In the activity of the united territorial communities, a tendency has appeared in the ratio between own and attracted sources of financing of enterprises, which is characterized by a greater dependence of enterprises from financial and credit institutions and the market of loan capital. Hence, changes in the ratio of own and attracted sources of funding for OTG enterprises contribute to the close integration of banking and industrial capital. Capital pooling and concentration of administrative functions in OTG will make it possible to realize significant financial projects more effectively and respond to changes in market conditions. It has been established that participation in OTGs of banks, insurance, leasing, trust, investment companies, etc., will facilitate financial cooperation within OTG, as financial and lending institutions accumulate the main source of financing of the economy - money capital. It is substantiated that the activity of banks in the OTG is quite promising for the development and ensuring financial stability, since they concentrate cash, deposits, settlements, securities and other assets of the entities of OTG. At the same time, the presence in the OTG of the insurance division will reduce the risk of operating OTGs, in particular, increase the reliability of business operations, support the continuity of production and sales activities of enterprises.

To solve the problems of financial development of OTG, issues of theoretical and methodical principles for the regulation of financial transformations of OTG, management of financial risks in OTG, diagnostics of possible crisis phenomena in the strategic development of OTs, their emergence remain relevant.

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## **PARTICIPATIVE BUDGET. EXPERIENCE OF UKRAINE**

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Local governments often start the process of budgeting without considering strategic plans, investment plans and other documents that in the long run reflect the needs, goals and objectives of local authorities. In the same way, budget institutions and local financial institutions are constantly planning and implementing investment projects without resorting to a thorough analysis of the region's financial capacity in the long run and the impact of these projects on the current regional budgets in the long run. In our opinion, such an approach to budget formation generates a waiver of large-scale investment projects or an excessive load on current budgets of future periods.

The involvement of the public in the budget process at the local level is devoted to many works by both foreign and domestic scientists. In particular, Vasiliev N.V., Kravchenko T.A., Yuriy S.I., etc., but this problem needs to be studied more deeply, especially during the reform of local budgets in Ukraine.

In the process of managing the financial resources of the territorial community, the most common reason for involving citizens is their participation in the discussion and approval of the annual budget. But there are many other areas that would benefit from citizen participation, for example, the definition of principles and rules for managing the property of the territorial community, membership in the committees for assessing the appropriateness of investment, public support for capital investment programs or regional development programs. Since 2006, the International Budget Partnership has begun publishing the Openness Index of the Budget, assessing the country in terms of public finance openness [1]. Over the period 2006-2019, more and more international and civil society organizations began to implement initiatives to promote transparency in the management of public finances.

The resource "Transparency of budgets of regions and their regional centers in Ukraine" (<http://budgets.icps.com.ua/>) should be noted among the specialized resources devoted to the issues of assessing the budget's openness and budget

process. This resource was developed and implemented by the Institute for Economic and Social Reforms in Slovakia (INECO), in partnership with the International Center for Policy Studies (ICPS, Ukraine), with the financial support of the Slovak Republic's Official Development Assistance to the Slovak Republic. The main objective of this project is to contribute to the improvement of financial health of regions, cities and settlements [2].

Let's highlight the main methods for improving the transparency of the budget, namely: the media - participation of the media in all discussions and meetings on budget issues, access to budget documents (especially the approved budget), which are not prohibited by law; Prepared information - information about projects or collections "Briefly about the budget", which summarizes the main positions of budget decisions, summarizes income and expenses; public hearings - direct involvement of citizens in the decision-making process, which guarantees better public awareness [3]. In addition, the local government can learn the opinions of its citizens about local budget projects and take into account their comments; meetings - the emphasis is on solving a specific issue (for example, a city development plan), provides an opportunity to discuss the issues in detail and immediately see the citizens' attitude and get their comments on the problem, as well as critical remarks, facts and thoughts; list of voters' public opinion - collecting information about people's attitude to a particular problem; advisory committees - meetings with a group of people who are constantly representing the territorial community, or with a working group to address a particular issue.

Using the public participation model to make budget decisions, the authorities will first of all be able to build a base of political support in society and broaden the citizen's mindsets, thereby gaining public support in their implementation.

The development of civil society is impossible without the "reformation" of the psychology of the population and the formation of the community as the main player and the foundation of local government, which, firstly, is ready to take responsibility, and secondly, to be a participant and not a spectator, the development process of the settlement. Formation of project budget indicators in the context of attracting citizens or public organizations to substantiate the choice and decision-making at the local level should be based on the preliminary study and analysis of the possibilities of specific territories of their natural, human and industrial-industrial potential and the strategy of development of areas of territories, settlements.

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## **THE ROLE OF PARTICIPATIVE BUDGETS IN THE SOCIAL AND ECONOMIC DEVELOPMENT OF THE COUNTRY**

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The contemporary world space demonstrates the growing role of the civil society in making important national and international decisions.

In October 2007, the Committee of Ministers of the Council of Europe held a conference on the Code of Best Practices for Public Participation in Decision-Making, which stated that "non-governmental organizations have made a vital contribution to the development and implementation of democracy and human rights, in particular by raising the awareness of the population's participation in public life and transparency of state authorities ". It was decided to prepare a Code of Public Participation that would cover such issues as mechanisms for the participation of the non-governmental organizations in the decision-making process and public involvement in state policy.

Participatory budgets occupy an important place in this concept. Participatory budgeting is an innovative democratic instrument for citizen participation. It is a decision-making process the purpose of which is to involve the public in joint management of the community and in allocating funds to the allocated part of the city budget.

In Ukraine, for the first time, budgets of participation were implemented in 2015 in three cities: Chernihiv, Cherkassy and Poltava. In Chernihiv, the participation budget amounted to 4.8 million UAH. (about 180 thousand US dollars) - 1% of the city budget revenue. The sum was divided between large projects (up to UAH 1.2 million for the project and small projects (up to UAH 360 thousand for one project). It is important to say that the first voting was not in electronic format but in writing, 4% of the city's residents.

So, we understand that participatory -level budgeting is not only about money, it is primarily responsible for a common idea, for a common space. In Ukraine, as a post-Soviet country, all decisions were made only at the state level before independence, a factor of overcoming conformism and inertia is very important. However, society developed, integrated into the European space, and we have observed in Ukraine the phenomenon when society could mobilize in the most difficult times. For example, during the revolution of Dignity in 2014.

In the cities and regions of Ukraine, there were also many examples of a deliberate clamorous society. For example, one of the first projects in Lviv - to create budgets of participation - the project "Save the Mercury". Through social networks, city dwellers of Lviv mobilized and quickly collected the necessary amount of money. At that time it was reported progressively, unusual for Ukraine. Another example of that period, namely -the birth of the budgets of participation and as example of Public-Private Partnership - is the project "Greening of Gorodotska Street".

Therefore, participative budgets are a logical extension of a number of reforms in Ukraine. The principle of transparency of the budget was made by the adoption of the Law of Ukraine "On Access to Public Information" dated January 13, 2011 No. 2939-IV.

Within the framework of administrative territorial reform and decentralization and the Law of Ukraine "On Local Communities Cooperation" adopted in 2014 by the Law of Ukraine "On Cooperation of Territorial Communities".

The Order of the Cabinet of Ministers of Ukraine "On Approval of the Concept for the Development of Electronic Democracy in Ukraine and the Action Plan for its Implementation". Nowadays the participative budget is being actively implemented in more than 45 cities, 23 of which are regional centers. Funding for participation in such cases is distributed annually from the city budget. But there are cases, though not many, when the implementation of the budget of participation is regulated by the target timetable - as in Dnipro, Kharkiv, Poltava, Severodonetsk and Cherkasy. However, in such cities there is a certain risk that the term of the program after its completion will not be prolonged and, accordingly, the further implementation of the budget of participation will not be ensured. In 2016, the Ukrainian technological social organization Social Boost has created an online platform called "Public Project", which helps Ukrainian cities to automate the process of the party's budget. This project is used annually to submit and select project applications from urban residents to be funded through participative budgets.

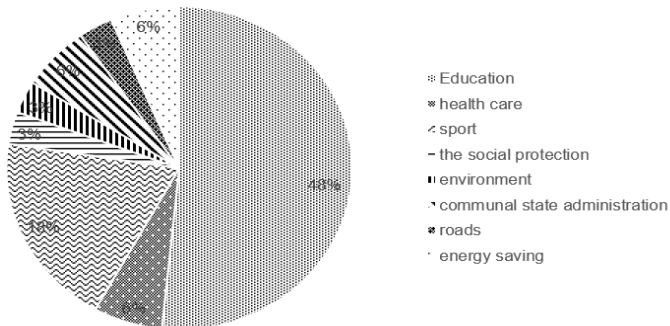


Figure 1: The structure of Participative budget of Lviv city approved 2018

Source: own elaboration based on data from [5]

Consider the structure of Participative budget of Lviv city approved 2018. We see that almost half of the approved projects are related to education. Thus, antithetical budgets help to solve a number of social problems, which do not deny sufficient assistance from the Participative budget and are supported by civic activity.

Problems and challenges that arise during the time of the reform of decentralization of local budgets, namely:

- Gradual changes in the way public administration works (in particular, due to transparency of processes and control)
- Citizens' access to local self-government bodies;
- Not all partnering budgets meet high standards and requirements;
- Fair and transparent voting;
- Providing residents with the opportunity to participate in the development and introduction of changes in the participative budget at each stage.

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## DYSFUNCTION OF PARTICIPATORY BUDGETING - CASE OF POLISH CITIES

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Participatory management is gaining more and more followers among local units around the world. It is perceived as a counterbalance to the government systems often contrary to the expectations and needs of the inhabitants. Many scientific papers and formal documents indicate participatory budgeting (PB) as an innovative urban management theme with an enormous potential to promote principles of good urban governance (Kaufmann et al., 2010; Commission, 2001). It is a process of direct, voluntary and universal democracy, where the people can debate and decide on

public budgets and policy (Taylor, 2004: 20). A need of transformation of local government system emphasises a role of empowerment, citizen's participation and different stakeholder engagement (Bovaird and Löffler, 2003).

Participatory budgeting is a tool that allows the participation of citizens in the allocation of public finances and in this sense it represents a direct-democracy approach to local finances. It is a process of direct, voluntary and universal democracy, where the people can debate and decide on public budgets and policy (Taylor, 2004: 20). PB can redirect municipal investment towards more direct cohesion with the needs of the inhabitants. It can lead to better wellbeing and for the sustainability of the city they inhabit. We agree that PB can improve state performance and quality of local life and enhance the quality of democracy (Wampler, 2007).

Participatory budgeting is becoming an increasingly important tool of development policy of Polish cities. It is part of the public debate on the role of the residents in local development and building of social capital in local self-government units. In the application dimension, participatory budgeting allows for partial empowerment of residents in terms of budgetary policy of their towns and cities. In addition, it plays an important role in civic education. A social energy released by initiatives and proposed projects allows for implementation of relevant activities that from the residents' perspective improve quality and comfort of urban life.

The research problem around which the article focuses is a diagnosis of the state of participatory budgeting in Polish towns. The main goal of this paper is to identify weaknesses and gaps on participatory budgeting process.

## **PARTICIPATORY BUDGETING AS A DIGITAL TOOL FOR REGIONAL DEVELOPMENT IN UKRAINE**

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Implementation of the state policy of fiscal decentralization in Ukraine aims to stimulate the engagement of citizens in proactive life of municipalities. Despite that the available fiscal space and local government resources are limited, scarce and need to be expanded with innovative practices and procedures. One such non-standard procedure is budgeting on the basis of citizens participation or participatory budgeting.

Participatory budgeting is a process of democratic deliberation and decision-making, in which ordinary people decide how to allocate part of a municipal or public budget. It is also a fiscal tool which allowed people to spend public budget in a transparent way.



The theoretical foundations of participatory budgeting are covered in scientific papers of G. Almond [1], A. Shah [2], Zh. Belets [3], T. Kravchenko [4], Y. Kazyuk [5], I. Lopushynskyy [6], V. Mamonova [7]. The need to link taxation with level public consumption was justified by Charles Tiebout [8], Eric Lindahl [9]. The tax as a price for freedom and public goods, the free-rider effect, the axioms of public choice in tax finance are presented in Edward Clarke`s paper [10].

Today, participatory budgeting has been implemented in nearly 1,500 municipalities and communities around the world. In Ukraine participatory budgets emerged firstly in Vinnitsa, Cherkasy, Chernihiv, Poltava since 2015 [11].

Since 2016, the innovative process has been intensified. In our opinion, it was the consequence of internet penetration 71% and more. The spread of digital technology in masses has made the process more active in Ukraine.

July 1, 2019, 92 municipalities have joined the participatory budgeting process, including Kyiv, Lviv, Sambir, Drohobych, Ivano-Frankivsk, Ternopil, Fastiv, Romny, Nizhyn, Shostka, Kryvyi Rih, united territorial communities, etc.

The frameworks of Ukrainian communities (City councils) differentiate variously throughout the country in terms of scale, voting procedure, and objective.

Since 2016, a special public project "Digital Project Platform" has been created to digitize the budget for participation in Ukraine, which started as a Social Boost grant initiative supported by the Institute for Budget and Socio-Economic Research through USAID funding. This digital platform has become a software solution for participants and has provided rapid multiplication and cheap service for cities, towns and communities. During last years, 1188.0 thousand people or 2.8% of Ukrainian citizens voted at least once for participatory projects, on average, each participant voted for 2.6 projects - from 1 to a maximum of 4.

It is clear that the promotion and allocation of participatory budgets is only possible in conjunction with digital technologies within the latest digital economy paradigm aimed at eliminating information asymmetries. The electronic digital signature procedure allows people to vote remotely, saves time, provides ease and accuracy of counting, prevents manipulation. The introduction of digital democracy and electoral process in Estonia in 2014 confirms the quality and reliability of digital tools.

Budgeting with citizens` participation in Ukraine is an example of public finance decentralization, an innovative tool for managing municipal funds, expenditures of local budgets. In general, participatory budgeting can have significant positive effects on the development of public finance and society, in particular, increasing the share of financing investment projects in expenditures, reducing the inertia of society, involving marginalized social groups in budgeting processes, improving community awareness. It can increase tax payments through taxpayers' understanding of public needs.

On the other hand, the amount of public resources redistributed within the public budget procedure remains insignificant in absolute and relative terms in Ukraine -

within a statistical error or less than 1% of the budget for cities' development. UAH 1085.67 million for the period 2016-2019 on the scale of Ukraine is extremely small [12].

In particular, participative budgeting in Lviv volumes more than doubled in 2016-2019 - from UAH million 17.5 up to 42 annually. The number of submitted and allowed to vote projects varies from 159 to 294. It is important that the number of Lviv citizens who voted for the projects has quadrupled in four years, reaching almost 104,000 people, or over 16% of the registered population age 16+ [14]. It demonstrates the growing role of public service institutions in public spending and their ability to allocate budget funds for the truly needed goals. It would be unrealistic to reach almost five times the number of participants in 4 years without digital voting. Many researchers point to the particular effectiveness of smartphone access to the Internet. In addition, the largest PrivatBank and Oshchadbank began to promote digital signature service actively in 2016-2017.

Digital participatory budget in the current format does not change the local fiscal spaces of cities and territories in Ukraine. It does not stipulate regional growth, but only redistributes the available resources in another, transparent for the locals way. We also believe that the principle of participatory budgeting should be to attract additional donor funds to local budgets, to expand certain fiscal spaces of cities and communities. This can be done also through voluntary self-taxation.

According to the results of the study, recommendations that will contribute to fiscal efficiency of the public participation budget are substantiated, in particular: voting for budget participation only by taxpayers, property and land plots owners; voting exclusively in electronic form to avoid manipulation. Digitization helps to identify the real demand of population in the public goods they need and to aggregate public inquiries into social and economic decisions. In this way participatory budgeting is transformed from a manipulative political procedure into an effective mechanism for ensuring the efficiency of budget expenditures and the allocation of resources [13]. In the long term, the public participation budget can restore the interconnection between taxation and public goods provision of local territories, help to increase tax payment and compliance.

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## **THE ROLE AND SIGNIFICANCE OF THE CONSUMPTION SPACE IN URBAN REGENERATION PROCESS**

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Cities that are consumption centers are constantly changing as well as facing many problems and unused development potential due to intense socio-economic and political changes. Problems of economic, social, spatial and cultural degradation of key urban areas require to launch many urban regeneration processes. Problems such as poverty, unemployment, social marginalization, degradation of material substance and the city's cultural heritage alongside with the lack of local societies public activity are intensifying difficult situations in many cities. Urban regeneration as a repair process which can retrieve certain city areas or whole cities seem to appear as the perfect tool to improve their socio-economic situation. However, the urban regeneration process is not only the way to solve social problems – its primal purpose is to wake up local economy, building up its competitiveness including improving the attractiveness of the city as a consumption center. Consumers and areas of consumption play crucial role in the urban regeneration process as they can satisfy their higher and lower needs.

The level of satisfaction those needs will not only affect degraded areas but the whole city. Furthermore, the essential element of planning the urban regeneration process is recognition the needs of various groups of participants of this process who are showing behaviors characteristic for themselves.

In the city consumer needs are being satisfied in diverse ways. So-called urban amenities are becoming fundamental part of reinforcing the competitiveness of the cities. Several research results are showing that the cities that have higher level urban amenities (thus are generating positive outside consumption effects) are developing faster compared to poorly equipped ones.

By that means local entrepreneurship's awakening and local economy strengthening throughout instituting attractive consumption areas as well as reinforcing and developing urban amenities is a valid part of urban regeneration processes.

This article is an attempt to identify the role and significance of consumption area including urban amenities in the process of urban regeneration.

## **THE IMPACT OF DECENTRALIZATION ON THE PROCESS OF SOCIO-ECONOMIC DEVELOPMENT OF THE REGIONS**

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The difficult socio-economic situation of local authorities forced the state authorities to reform local self-government for the development of territorial communities. The innovation was the introduction of decentralization, which allows to strengthen the administrative and territorial structure, increase the level of well-being of citizens, effectively and quickly solve problems of local importance. Thus, local governments are entrusted with a number of functions and obligations aimed at strengthening and increasing the financial base of the region. Local taxes, which did not apply, are allowed. The actions of local authorities should be as useful and necessary to the public as possible. Successful implementation of decentralization reforms requires that local authorities approach the local community and take into account its needs. Therefore, the study of the decentralization process is relevant and requires in-depth study and analysis.

Decentralization for Ukraine has become an important step in the process of becoming and developing subsidiarity and improving the effectiveness of self-government. More precisely, the division of powers between the branches of government with a change of functions and responsibilities, accompanied by the rapprochement of the community and local self-government. This allows for the most important, urgent decisions to be made by the community, by delegating central authority to the local authority. Before applying decentralization practices, each country must honestly and thoroughly examine the process and determine for itself a reform strategy that will allow it to move forward with the least mistakes and methods of operation. However, it is difficult for some local authorities to apply a

regional development strategy. This is due to the fact that in Ukraine there are many backward territories in which it is impossible to create financially self-sufficient local government structures [1]. In this regard, the State Strategy for Regional Development - 2020 and the Law of Ukraine "On the Principles of State Regional Policy" were adopted, which practically contributed to the voluntary unification of territorial communities. The basis for further structural reforms was adopted by the law of Ukraine "On Voluntary Association of Territorial Communities", which allows small settlements (less than 2500 people) to unite and create a prosperous community [2].

The implementation of decentralization reform, which began in mid-2015, shows the rapid pace of formation of united territorial communities. As of early 2019, nearly 5,000 mainly rural and township councils had already formed 806 voluntary territorial communities. The decentralization process has had a positive effect on the growth of local government revenues. For the 6 months of 2019, the own revenues of the General Fund of the local budgets of Ukraine increased by +21.1 billion UAH (+ 19.6%) compared to the same period of 2018 and amounted to 128.8 billion UAH. In particular, personal income tax came to UAH 77.2 billion, which is + UAH 13.9 billion (or + 22.0%) more than the revenues for the corresponding period of the previous year. Land payments - UAH 15.6 billion (or + 23.4%). Actual single tax revenue - UAH 16.2 billion (+ 22.8%). Actual real estate tax revenues - UAH 2.1 billion, + 32.3% increase in revenues. [3]

Ukraine, adopting a European path of development, has taken a major step in implementing decentralization of local governments, giving them greater powers and responsibilities. Local governments are now facing the important task of increasing financial resources to local budgets to meet and meet local needs. It is important that each local government, when creating a new system of government, choose the right strategy and directions of socio-economic development for proportional reform of all spheres of life of citizens. The state should create a system of motivation for local self-government bodies, since in the conditions of competition there will be noticeable progress of communities, namely, there will be an improvement in the quality of life of people, which is one of the tasks of decentralization.

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## CAPITAL INVESTMENT AS A FACTOR OF INVESTMENT DEVELOPMENT OF UKRAINIAN REGIONS

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The level of economic and social development of the state is determined on the basis of the development of its individual regions. Each individual region has a major impact on the functioning and development of countries as a whole. Today, an important task remains to ensure the integrated and balanced functioning of regions to achieve sustainable state development. To achieve these goals, the government uses various organizational, economic and legal instruments.

The social and economic development of the regions can be assessed using different indicators. In particular, when assessing the level of development of a region, it takes into account such indicators as gross regional product, disposable cumulative income per person, volume of sales industrial products per one person, volume index agricultural production, capital investments and more.

Capital investments are costs that are spent on the creation of new ones, reconstruction and technical reequipment of existing fixed assets. These investments are directed to the construction, manufacture, reconstruction, modernization or acquisition of non-current assets. Capital investment is one of the determining factors for the economic development of regions, and therefore of Ukraine as a whole. Capital investment contributes to the expansion of production at enterprises, the structural restructuring of social production and so on. The dynamics of capital investment in the regions of Ukraine is presented in Fig. 1.

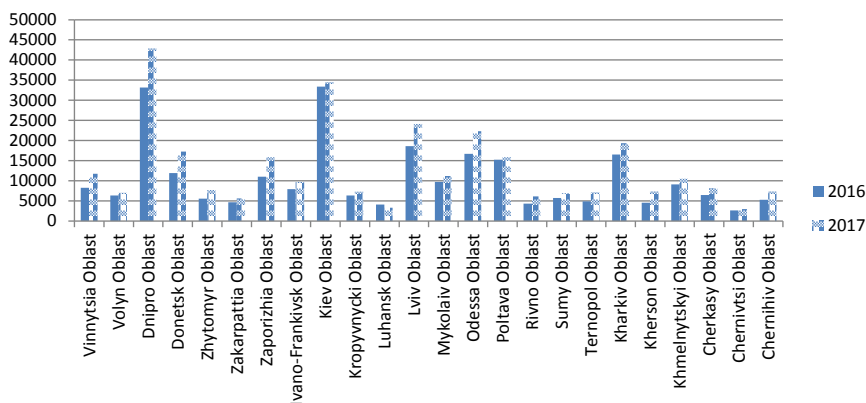


Fig.1. Capital investment of regions of Ukraine in 2016-2017

Based on the statistics, it can be seen that the largest share of capital investment is in the Dnipro (42908 mln.hrn in 2017) , Kyiv (34494 mln.hrn), Lviv (24106 mln.hrn) and Odessa oblast (22300 mln.hrn). The least capital investments are placed

in Chernivtsi (2992 mln.hrn), Zakarpattia (5624 mln.hrn) and Luhansk oblast (3330 mln.hrn).

By type of economic activity capital investments in:

- agriculture, forestry and fisheries are prevalent in Vinnytsia (39,4%), Kropyvnytskyi (47,1%), Sumy (40,5%), Kherson (43,3%) and Chernihiv oblast (46,5%);

- industry a large share in the Dnipro (57%), Donetsk (57,3%), Zaporizhzhya oblast (62,6%);

- construction are predominant in Zakarpattia (36,2%), Chernivtsi (30,4%), Ivano-Frankivsk (26,4%) and Kyiv (26,2%) oblast;

- wholesale and retail trade; repair of motor vehicles and motorcycles are prevalent in Kyiv (15,3%) and Mykolaiv oblast (26,6%);

- public administration and defence; compulsory social security: Luhansk (24%) and Chernivtsi oblast (24%);

Analysing the structure of capital investments by funding sources, we can see that a greater extent capital investment are financed at the expense of the own funds of enterprises and organizations. The largest share of financing from the state budget is located in the Luhansk (30,3%) and Chernivtsi oblast (19,3%).

Therefore, there are many different indicators and factors used to comprehensively assess the development of Ukrainian regions. An important such indicator is the amount of capital investment in the regions.

After analysing the statistical information, you can see the uneven development of the regions of Ukraine, since large amounts of investment are located in several regions, where the largest enterprises and organizations are located.

Most often, capital investment goes to agriculture and industry, which is driven by Ukraine's orientation. The negative factor is the low level of financing from foreign sources, as well as the fact that the great majority of capital investments goes to tangible assets, not to the development of new technologies, patents, etc. Therefore, in order to improve the overall development of the regions, it is necessary to take measures to encourage foreign investment, as well as to direct investments in innovative developments that will be able to improve production processes in enterprises, increase labour productivity, etc.

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## COMPARISON OF LVIV AND LODZ CITY BUDGETS (BASED ON PROJECTS OF BUDGET FOR 2019-2020)

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The transformation processes in the economies of Poland and Ukraine deserve in-depth research as well as looking for the answers to the question why the Polish economy is recognized as a market economy and the Ukrainian economy is not.

Urban economy is an important object of research and evaluation for scientists, businessmen, citizens. The amount of money, its distribution by industry, the direction of spending - consumption or investment, sources of income are important indicators of the stability of the urban economy, its development and prospects.

The cities of Lviv and Lodz, located 500 km apart, are similar in many ways. The population of Lodz is approximately 685,000 people, Lviv 750,000. The basis of urban economies in the late 1980s (at the turn of the epoch) was production, while now both cities are developing tourism and creative clusters.

Therefore, comparing city budgets is more likely to be objective. Table 1 provides a comparison of revenues and expenditures of budgets in 2019-2020, as well as expenditures on education. Comparisons were made in US dollars and the calculation was made taking into account the annual average of the hryvnia and the zloty in 2019 and the forecast of national banks for 2020.

Table 1 - Comparison of planned revenues and expenditures in the budgets of Lviv and Lodz in 2019-2020

Показник	Lviv		Lodz		Carrying	Wear	
	Billion USD	per capita, USD	Billion USD	per capita, USD			
2020							
Budget expenditures	0,36	480,74	1,36	1 985,02	4,13		
Budget revenues	0,33	437,04	1,30	1 893,97	4,33		
Spending on education	0,10	137,33	0,33	474,84	3,46	29 %	23 %
2019							
Budget expenditures	0,38	507,79	1,26	1 832,58	3,61		
Budget revenues	0,38	508,41	1,19	1 732,02	3,41		
Spending on education	0,10	139,27	0,28	407,28	2,92	27 %	23 %
GDP per person, USD		9 770,00		33 890,00	3,47		



Considering the size of the economies of Ukraine and Poland, it is advisable to compare budgets with the calculation of expenditures and incomes per capita. As can be seen from the table, the budget expenditures of Lodz in 2019 per person are 3.61 times higher than in Lviv, with the GDP per capita in Poland higher than in Ukraine 3.47 times. Given the statistical errors, the ratios are saved. As for the costs as a whole. However, it is interesting that in Lviv the share of education expenditure is higher than in Lodz. This, in turn, may be explained by more student youth and a larger network of educational institutions.

1. <https://city-adm.lviv.ua/public-information/budget>
2. <https://uml.lodz.pl/aktualnosci/artykul/>

## **IT MARKET IN THE CONDITIONS OF EURO INTEGRATION**

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The concept of competitiveness has a universal value and can be used, both for the product, and for enterprises, industries and the economy as a whole. Competitiveness - the ability of a particular object or entity to surpass competitors in the given conditions. Objects that have a competitive ability can be divided into types: country, industry, enterprise, goods. Consider the objectivity of competitiveness and their interdependence.

The competitiveness of the country is estimated as the level of quality of life, and is calculated - the Global Competitiveness Index (GCI). The rating of the World Economic Forum, calculated on the basis of 100 positions (infrastructure development, currency status, stock market indicators, education level, employment rates, business activity, state apparatus, judicial system). In 2015, the ranking of this ranking were 140 countries. According to the rating, Ukraine ranked 79th with a total score of 4 on a seven-point scale (the sphere of education received the highest score of 6.1, macroeconomic stability and the development of state institutions - 3.1 points) [2].

For economic objects (industry, enterprise, products) different approaches to the definition of competitiveness in terms of competition between the necessary resources and markets (sales markets or consumers) are possible.

Competitiveness of the industry is determined by the availability of technical, economic and organizational conditions for the creation, production and distribution (with costs less than international) of high quality products, which satisfies the requirements of specific groups of consumers.

Analyzing the potential of Ukraine, the structure of the economy, foreign

economic activity, the IT sector was identified for further research.

Potential of the sector: by 2020, the state will receive 36 billion UAH from the tax revenues, and the contribution of the industry to GDP will reach 5.7%, which indicates a growth of 6 years by 3.8%. According to an analysis by the Indian association NASSCOM, one new programmer will create up to 4 additional jobs in related industries, which in total will create 400 thousand jobs [1].

The global ranking of countries for the outsourcing attractiveness of the Global Services Location Index (GSLI) has identified Ukraine as the 24th place.

The factors of competitiveness are also determined:

1. Readiness of the state to cooperate with the IT industry. In October 2015, at the Ukrainian-German Economic Forum, the IT industry of Ukraine was represented as one of the key and budget-forming industries;

2. Quality of education of Ukrainian IT specialists;

3. The presence of IT companies in the international market, namely TOP-5 Ukrainian companies (EPAM, SoftServe, Luxoft, GlobalLogic, Ciklum), of which Luxoft and EPAM are public and traded on the largest stock exchange in the world [1].

There is a correlation between the concepts of "competitiveness" and "innovation": the higher the degree of innovation, the higher the degree of competitiveness of the economy. New product quality, which is more in demand with lower costs..

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