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For scientists, scientists, students, graduate students, representatives of business and public organizations and higher education institutions and a wide range of readers.

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SOYBEAN FUTURES MARKETS- EXPLORING LINKAGES BETWEEN INDIA AND CHINA

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Soybean is a key commodity in the agricultural segment for its global demand, supply and trade. Soybean has been found to provide better diversification benefits than any other commodity against the stock index in China (Liu, Tse, & Zhang, 2018). It has also been found that, unlike other commodities, the role of gold and soybean as a robust, safe-haven asset has not faded during the covid-19 pandemic (Ji, Zhang, & Zhao, 2020). India and China are among the five largest soybean-producing countries in the world.

Soybean being an important agricultural commodity, little literature is available on the linkages of Indian soybean futures with global markets. This article studies the relationship of soybean futures of NCDEX (National Commodity and Derivatives Exchange) with the DCE (Dalian Commodity Exchange) instead of exchanges in developed economies like the US. India and China share similar population sizes and thus similar consumption behaviour. The two countries represent almost 86 per cent of BRIC countries population and 36 per cent of the world population. Moreover, both the emerging economies have similar trade history in commodities. So being the largest producer, consumer, exporter and importer of commodities, the economies have limitless potential and opportunity to boom in commodity derivatives trading. This article studies the linkages of soybean futures traded at NCDEX with the two soybean products (no. 1 soybean and no. 2 soybean) traded at DCE.

Official websites of NCDEX (India) and DCE (China) have been used to collect data. Weekly data was collected for 12 years, from 1 Apr 2009 to 31 Mar 2021. With the advantage of getting enough observation for analysis, taking weekly data helps avoid irregular trading days and zero-trade volume problems as encountered.

To test the long-run relationship between the variables, ARDL bound test, proposed by Pesaran, Shin, & Smith (2001) has been used. The test is used when the variables under consideration are not integrated at the same level. The Toda-Yamamoto method, introduced by Toda & Yamamoto (1995), is used to test the Granger causality. The Toda-Yamamoto approach is an alternative and improvement over the traditional Granger causality test. The validity of this test is independent of the order of integration of the series. Furthermore, this method is free from the bias associated with the unit root testing and cointegrating properties of the variables.

Instead of studying the unconditional correlation, the conditional correlation has gained popularity for depicting the true dynamic nature of the correlation between the variables. To study the Dynamic correlation between the markets, DCC –GARCH Model, proposed by Engle (2002), has been used. The model uses the resulting variance series from the univariate GARCH model to estimate the DCC GARCH parameters. Further, the GARCH models of VARMA class proposed by Ling & McAleer (2003) have been frequently used in the literature for their usefulness in the study of cross-market return and volatility spillover. The VAR GARCH is a restricted VARMA GARCH model, and the restricted version has been more popular among analysts. This model gives more efficiency of parameters with less computational complications, unlike other multivariate GARCH models. VAR GARCH models are also free to suffer from identification or cancellation problems (Lutkepohl, 2005).

F-statistics from ARDL bound test has been found less than the lower bound for each product. This indicates no cointegrating relationship between the agricultural commodity futures of NCDEX and DCE. So, although the Indian and Chinese soybean markets are mostly efficient in their respective domestic markets, and, these markets have been found to be in a long-run relationship with the developed economies, a long-run relationship could not be found between the futures markets of India and China.

For the no. 2 soybean futures, Indian markets Granger cause Chinese markets. For the no. 1 soybean futures, no causality is detected from either side. The different results of Soybean (NCDEX) with No. 1 soybean and No. 2 soybeans of DCE are not surprising as no.1 soybean and no. 2 soybeans in China have been found to represent a distinct market in China. Rather more importance should be given to no. 2 soybean as the information share of No. 2 soybean is much more than that of no. 1 soybean despite having a small market share (He & Wang, 2011). Another reason for the importance of No. 2 soybean is that this contract includes trading in non-genetically modified soybean produce and the genetically modified produce of soybean.

The DCC GARCH result indicates that the short-term persistence of shocks is not there between the markets for no. 2 soybean futures. The GARCH term indicating the long-run persistence of shocks between the markets is found to be significant for both products. The magnitude of the DCC GARCH term is much higher than the DCC- ARCH term. The sum of the DCC-α term and DCC-β term is also less than 1, indicating the mean-reverting property of the model.

Results of VAR (1) GARCH (1,1,) indicate a high return spillover between the soybean futures markets of India and China. Also, significant short-term predictability is interpreted in the soybean markets of both exchanges. Since most of the coefficients are positive, the positive relationship is supported by the DCC graph of Soybean futures, where the graph is mostly in the positive zone. Both the markets have significant effects from their respective markets, as well as there is high volatility and shock spillover also from the Indian market to the Chinese market and vice versa. So, it can be said as a bidirectional volatility spillover between the soybean futures market of both countries. The coefficients for both markets are mostly negative about the shock and volatility spillover from another market. This indicates although the markets are related, the direction is opposite. The results for soybean futures are similar to the findings obtained in DCC GARCH models.

Our results from granger causality confirm that the causal relationship of the two products of Chinese soybean futures with the Indian soybean futures is not the same. Soybean futures of India and China have bidirectional spillover in the return and volatility. Therefore, the news or shocks from the international markets are required to be considered. The findings recommend that the market participants should take the international news or shock cautiously while dealing in soybean futures. Portfolio managers, investors and traders have important implications from the results while including soybean futures in their portfolio for diversification benefits.

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IDENTIFICATION OF CO-INTEGRATION BETWEEN INDIAN AND US ENERGY AND AGRICULTURE COMMODITIES

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Price risk management is a fundamental but vital function of commodity market. To effectively discharge this function, commodity market has to be efficient. Since the introduction of commodity market trading, there have been questions on the very basic functions of commodity market viz. Are commodity markets performing price risk management function? Do these markets lead to price discovery? Are these markets informational efficient? An efficient commodity market provides an estimate of future spot price of underlying commodity in the form futures price and hence helps in managing price risk associated with that commodity. There are numerous studies on commodity futures market efficiency in both developed and emerging economies. The findings of these studies are conflicting in nature. Many studies like Nigatu and Adjemian (2020), Arora and Sandhar (2017), Malhotra and Sharma (2016), Singh and Singh (2015), Ali and Gupta (2011), Singh (2010), Lokare (2007), Bose (2006), Gulen (2000) and many others report evidence of efficient commodity markets. Efficient market should be co-integrated with each other. Main objective of study is to identify co-integration among Indian and US energy and metal commodities.

Augmented Dickey Fuller (ADF) and Phillip Perron (PP) tests are the most widely used stationarity. Here ADF test is used for stationarity check. Here, Akaike Information Criterion (AIC) has been used to determine the number of lags. The null hypothesis assumes that the series is nonstationary. It is important to first test the stationary of given series before applying co-integration. The two series are expected to be non-stationary on levels and stationery on first differencing. Johansen co-integration is used to check co-integration among India and US energy and agricultural commodities

Table-1 shows the result of ADF test. Results of ADF test shows that except Maize, natural Gas, Sugar all other commodities (Cotton, Wheat and Crude oil) data are stationary on level. Rests of the commodities were tested again, and they were found stationary at 1st difference. Next important step is lag length selection. Table-2 shows the result of VAR model.VAR model has been applied for lag length selection. Preliminary condition for running Johansen Co-integration test has been fulfilled. Table-3 shows the result of Johansen Co-integration test. Result shows that agricultural commodities maize and wheat has long rung association ship among Indian and US commodity market rest two cotton and sugar have no long run association ship. Both of these two markets cannot move together in long run. In case of energy commodities only natural gas has long run association ship and crude oil have no association ship. It means both markets cannot move together in long run.

Table 1. Result of ADF Test for Indian commodities and U.S. Commodities

Variables	Level		First difference	
	Statistic	P-Value	Statistic	P-Value
Cotton	11.2078	0.0243	113.8090	0.0000
Maize	9.33004	0.0534	131.581	0.0000
Sugar	4.20058	0.3795	138.541	0.0000
Wheat	14.5414	0.0058	150.743	0.0000
Crude oil	12.0163	0.0172	111.540	0.0000
Natural gas	5.74653	0.2189	170.536	0.0000

Table 2. Optimal Lag Length

Variables	Optimal Lag Length
Crude oil	**4**
Natural gas	**6**
Cotton	**2**
Maize	**3**
Sugar	**2**
Wheat	**2**

Table 3. Result of Johansen Co-integration Test

Variables		Trace statistic		Maximum Eigen value	
	No. of CEs	Trace stat	P-Value	Eigen stat	P value
Cotton	**None**	17.96793	0.0208	13.67778	0.0617
	At most 1	4.290158	0.0383	4.290158	0.0383
Maize	**None**	11.05331	0.2082	5.966333	0.6175
	At most 1	5.086973	0.0241	5.086973	0.0241
Sugar	**None**	5.824151	0.7162	1.873338	0.8645
	At most 1	1.873338	0.1711	1.873338	0.1711
Wheat	**None**	17.73106	0.0227	11.61178	0.1261
	At most 1	6.119277	0.0134	6.119277	0.0134
Crude oil	**None**	14.50996	0.0700	11.08755	0.1499
	At most 1	3.422408	0.0643	3.422408	0.0643
Natural gas	**None**	38.18016	0.0000	32.27312	0.0000
	At most 1	5.907040	0.0151	5.907040	0.0151

Main objective of the study is to check co-integration among metal and Energy commodities. Time series data from 2005 to 2020 has been selected and econometrics tools have been applied to achieve the objectives. Result of the study concludes that energy and metal commodities has not much influence on each other. In long run they cannot move together. From investors view point they are free to invest in any of the market. They can include any if the commodity in their portfolio. But for policy makers it is a matter of concern because the emerging market like India should have long run associations with United States Market in the era of globalization. Some policy changes are required to make long run association ship among these two markets.

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FINANCIAL SOLVENCY OF INSURERS AS A BASIS FOR INSURANCE DEVELOPMENT

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In Ukraine, insurance covers less than 15% of the insurance field, while in most EU countries, the United States and Japan, insurance covers almost all businesses and more than 90% of citizens.

If we talk about insurers, solvency is one of the indicators that characterize its financial reliability because insurance is a system of insurance protection against the likelihood of various types of risks. Solvency is a means of compensating the insured for losses to the insured victims (Oliynyk, 2008). Solvency also means the ability of an insurance company to pay its obligations.

The uniqueness of the transformations in Ukraine does not allow the direct use of foreign approaches to assessing solvency. However, studying the experience of countries where the insurance market has been developing for a long time and successfully, it turns out that it is very appropriate (Ziabina et al., 2020; Chukwu and Kasztelnik, 2021; Medani and Bhandari, 2019; Samoilikova, 2020; Yarovenko et al., 2020; Mazurenko and Tiutiunyk, 2021).

The activities of the insurance company in market conditions require additional financial guarantees. Many years of insurance practice in market economies have shown the need and importance of such a guarantee in the form of a certain amount of capital of insurance companies. The most powerful insurance markets are the markets of the United States of America (USA) and EU countries such as Germany, France and the United Kingdom, which have the largest volumes of insurance transactions. Thus, the European market occupies the leading position with a share of 33%. Also includes the insurance market of Russia and Ukraine and in general, it is 1%, which indicates a lag behind the dynamic countries of Europe. This followed by North America and Asia (with world market shares of 30% and 29%) (Shirinyan, 2014; Mazurenko et al., 2021; Bozhenko, 2021; Starchenko et al., 2021; Dudchenko, 2020; Yelnikova and Barhaq, 2020; Goncharenko and Lopa, 2020; Eddassi, 2020; Pimonenko et al., 2021; Kryvych and Goncharenko, 2020; Matsenko et al., 2021; Lazorenko et al., 2021; Oleksich et al., 2021; Mamay et al., 2021; Taraniuk et al., 2020).

The importance of the problem of ensuring the reliability of insurance companies prompted the Council of the European Communities already in the First Directive 73/239 / EEC of 24.07.1973 (with further additions and changes) to define the concept of the solvency of insurance companies (Shirinyan, 2014). According to the Directives, every insurance company must have:

1. Technical reserves by the obligations under the contracts. The participating

country itself determines the amount of these reserves and the rules for their allocation.

2. Solvency reserve as an additional financial guarantee. The reserve must be free of any obligations. Directive 73/239 / EEC emphasizes that it is necessary to provide that this reserve corresponds to the total volume of operations of the enterprise and is determined according to two reliability indices based, in one case, on premiums received, in another - on insurance payments.

3. Minimum guarantee fund, consisting of property free from obligations in the amount of up to 1/3 of the solvency reserve. This fund is created so that the solvency reserve can not fall below the threshold, which is dangerous for the insurance company's financial stability (Plysa, 2002).

The calculation of solvency according to the EU methodology is similar to the domestic one. Assessment of the solvency of insurance companies is carried out in three stages.

Stage 1. The required solvency margin is calculated according to a special formula.

Stage 2. The actual solvency margin is determined as the difference between assets and liabilities.

Stage 3. The estimated solvency margin is compared with the actual value of the solvency margin, which makes it possible to assess the insurance company's financial condition (Kulina, 2015).

According to the EU methodology, the calculation of the required solvency margin is calculated separately for risky types of insurance and life insurance due to the different nature of the risk distribution and the different structure of assets and liabilities.

According to SwissRe, Europe and the United States are leaders in the global insurance market. The European market occupies the leading position with a share of 33 % as shown on the map. Also includes the insurance market of Russia and Ukraine and in general, it is 1%, which indicates that the markets of these two countries lag behind the dynamic countries of Europe. Next are North America and Asia (with 30% and 29%) world market shares). Other regions account for less than 10% - South America and the Caribbean - 4%, and Australia and Oceania - also 4%.

Such significant gaps are explained primarily by the structure of insurance industries (Shkarlet et al., 2019; Vasilieva et al., 2017; Bublyk et al., 2017; Fila et al., 2020; Gallo et al., 2019). For example, in Asian countries, life insurance shares are very high (77% of the total amount of collected insurance premiums). In Europe, this figure is 47%, and in North America - 42%. Property insurance predominates in these markets. These differences are because life insurance is developing most intensively in countries with a low level of state social protection, where people have to decide on their pensions. And in poor Asian countries, the population has less property that needs insurance.

The Ukrainian system of solvency indicators is based on the European model - the First Solvency Directive, which is reflected in the provisions of the Law of Ukraine "On Insurance". However, the requirements for the solvency of domestic insurers are significantly lower than European norms and standards due to the development of the economy and the gradual development of the insurance business.

According to Ukrainian legislation, the method of determining the solvency of risk insurance companies is to determine and compare two indicators - the actual stock and the normative indicator of solvency. To ensure the appropriate level of solvency as required by law, the actual solvency margin must exceed its regulatory margin on any date.

Should bear in mind that the insurer's insolvency depends on the statutory approaches to calculating its regulatory value. Given the imperfections of Ukrainian legislation in this area, the high solvency of domestic insurers is imaginary, and its value is significantly inflated. This can be seen at least from the fact that the requirements for determining regulatory solvency, for example, in the United States, are much more stringent than in Ukraine.

There are various approaches to assessing the solvency of insurance activities in developed economies. Given this, the question arises as to which approach is most appropriate for Ukraine. To Ukraine's desire to integrate into the global insurance community and create a domestic insurance market that can compete in the international arena.

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NEED FOR PRIVATE SECTOR BANKS' CONSOLIDATION IN INDIA

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A sound banking system is the backbone of any nation for the economic upliftment and meeting the social objective of equality, free enterprise and opportunities for growth. To meet this objective Government of India first nationalised the fourteen major private banks in 1969 as the private banks in the country did not serve all sections of society. These banks belonged to various business houses and catered largely to their financial requirements / interests.

The takeover of these private banks resulted in easy reach of masses to banking services for their savings and credit requirements. Having assessed the positive impact of nationalisation another round of takeovers was implemented in 1980. In this phase six more private sector banks were nationalised taking the total nationalised bank number to twenty.

Post liberalization of Indian economy in 1991 the government appointed various committees to review the banking sector and recommend appropriate policy changes. Recommendations of Narasimham Committee I (NCI) and (NC II) laid the roadmap for reforms in banking sector. NC I was primarily constituted to examine all aspects relating to structure , organisation, and functions and procedures of the Indian financial system. The suggestions of NC-I related to reforms in the Banking, Capital Markets and Insurance Sector. These reforms are popularly known as 'Structural Adjustmments' or Liberalization. The major recommendations included Reduction in Liquidity Ratio, Abolition of Directed Credit Programmes, Free Determination of Interest Rates , Improvements in Accounting System of the Banks. Reconstitution of the Banking System, Abolition of Branch Licensing , Ending Dual Control of Banks by Ministry of Finance and Reserve Bank of India and Liberalization of the Capital Markets. However one significant recommendation was that The banking system should be restructured so as to have 3 or 4 large banks which could become international in character.

Simultaneously Government announced a New Economic Policy on July24, 1991 ushering the early phase of reforms. The new policy deregulated industrial economy in a substantial manner. Through introduction of international best practices in risk-based capital requirement standards and uniform accounting practice for income recognition and provisioning requirements for bad debts in line with Basle I norms the competition in banking system was enhanced considerably. The competition had been enhanced by way of transparent norms for entry of Indian Private Sector, Foreign and Joint Venture Banks. Also permission for foreign direct investment (FDI) in financial sector was granted.

Banking business though looking very attractive and profitable has its own challenges. The foremost being to keep the deposits mobilised from Public safe and returning it to them timely on demand with the contracted rate of return. Profits have to be generated by judicious deployment of capital and the deposits (liabilities) in avenues which give higher return than to be paid to depositors and the shareholders on their equity. Public sector banks have the added responsibility to do social lending, the objective for which these were nationalised. Private and foreign banks too had such social targets but they either purchased portfolios from Public Sector Banks or preferred to pay penalties.

As a result of the liberalization of the financial sector in 1991 many new private sector banks sprang up. These attracted customers of Public Sector Banks with spacious air-conditioned premises, Internet Banking, ATMs and debit cards. Many of these banks even though technologically better, were devoid of hardcore professionalism of public sector banks and the larger private sector banks. Consequently, they faced challenges to survive and decided to exit timely by selling their newly acquired banking business. The economy witnessed many post-liberalisation mergers between these banks and smaller private sector banks. The mergers took place as the weak banks could not withstand competition from new generation banks.

There were 22 mergers between 1993 to 2015. A public sector New Bank of India which was a weak bank was merged in Punjab National Bank at the instance of Government of India. This brought the number of nationalized banks to nineteen.

After the liberalization of the banking sector a new phase of healthy competition between private and public sector banks evolved and their loan books started growing rapidly. The loan book of public sector banks alone grew to Rs.18 lakh crore by 2008. This was the time when new sectors of economy were being opened viz. Infrastructure and Industrial sectors like Coal Mining, Iron Ore mining, Steel making , Roads and Ports construction and Telecom. Since Private Sector banks had a single point agenda to boost their fee based income they wore the mantle of loan syndicators and aggregators. Though mainly public sector banks aggressively participated to take a share in project financing the private sector banks too took some share to broaden their balance sheets to look attractive to investors. The growth of advances of public sector banks, private banks and foreign banks from 2010 to 2020 is given in Table 1.

It can be observed that private sector banks shyed away from lending during the economic boom period in the cyclic downturn after 2008. Their share in total advances portfolio of Scheduled Commercial Banks was only 21.26 percent by 2015 which went up significantly to 36.04 percent by 2020 which was the period when many Public sector banks were put under AQR (Asset Quality Review) and subsequently under Prompt Corrective Action (PCA) of Reserve Bank of India. The large spurt of advances in private sector banks put these banks in difficulty later.

Table 1. Share of Different Groups Of Banks in Advances in Percentage

Year	Public Sector Banks	Private Sector Banks	Foreign Banks
2010	77.24	18.08	4.68
2015	74.28	21.26	4.46
2020	59.80	36.04	4.16

Source: Reserve Bank of India.

The government of India amalgamated some nationalized banks into twelve big banks to avoid need for their frequent recapitalization as it had to put in a huge amount of Rs.2.11 trillion in Oct.2017 in these banks. This was necessitated to supplement capital of these public sector banks which had been eroded substantially due to burgeoning non-performing loans (NPLs).

Most of the smaller weak banks are having poor financials and management issues making them suitable candidates for sale through mergers or acquisitions. A sample study of three important financial ratios of seven private lenders for the last five years (2017 to 2021) describes the poor financial condition of some of them as under:

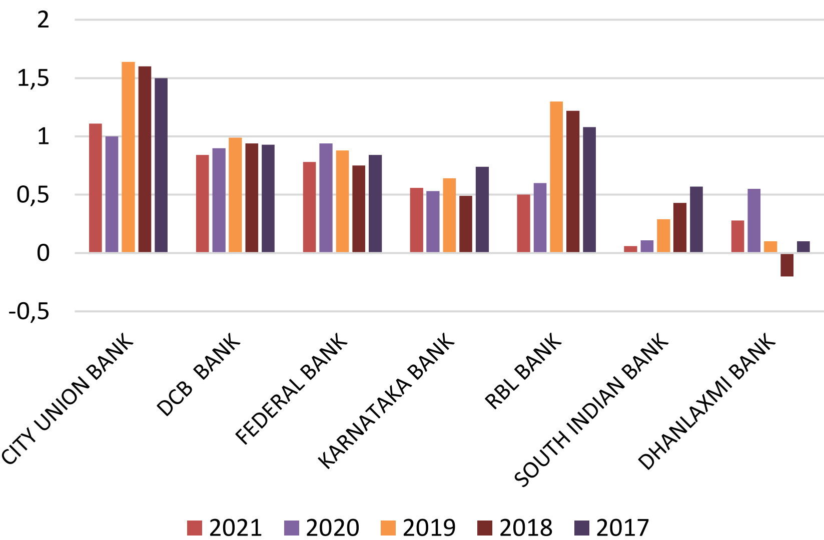

Figure 1. Return on Assets

Source: Reserve Bank of India.

Return on Assets provides insight on how effectively a company generates profits from its assets. Banks with high ROAs derive better profits from the same amount of assets than others with low ROAs. The stocks of banks with high ROAs are more likely to perform well over the long term. The ideal ratio for banks is considered to be 1 and above. It can be observed from Fig.1 that Return on Assets which is one of the important parameters of a banks' financial assessment continues to be poor for banks like Dhanlaxmi Bank, South Indian Bank, RBL Bank and Karnataka Bank whereas it is at a better level for City Union Bank, DCB Bank and Federal Bank for the years under analysis.

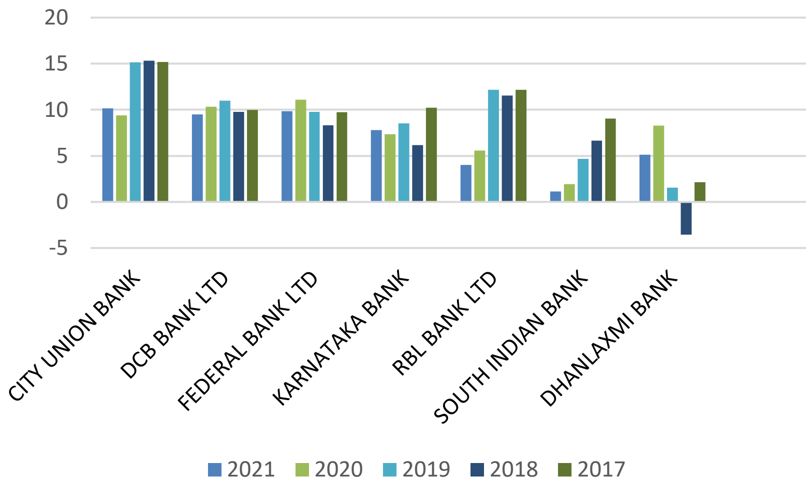

Figure 2. Return on Equity

Source: Reserve Bank of India.

Return on equity (ROE), also known as return on common equity (ROCE), is a measure of a business's profitability. Specifically, it is a ratio describing the rate of profit growth a business generates for shareholders and owners. The ideal ratio is considered to be in the range of 10-15 percent. This ratio the Return on Equity is unsatisfactory for RBL Bank, South Indian Bank and Dhan Laxmi Bank for the years between 2017-2021 as reflected in Fig.2. It is going down below 5 percent for all the three banks for the current financial year 2021.

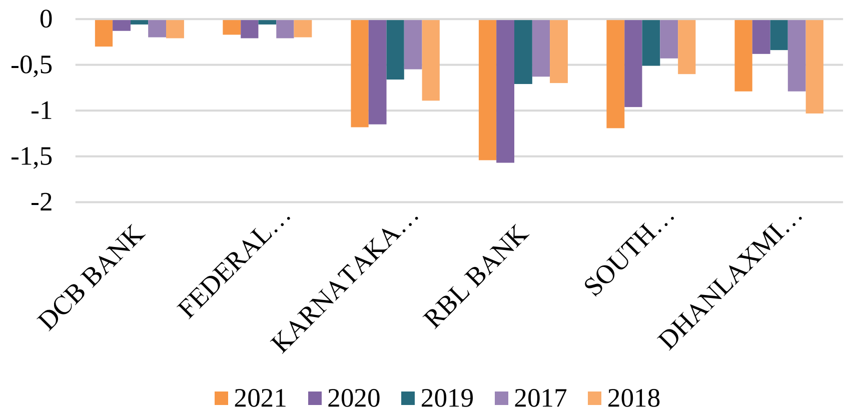

Figure 3. Operating Profit

Source: Reserve Bank of India.

Operating profits is an indirect measure of efficiency. The higher the operating profit, the more profitable a banks' core business is. Several factors can affect the operating profit. These include the pricing strategy of the business, cost of borrowings (Deposits) and yield on advances. It can be observed that almost all banks under study are having negative operating profits. It is however highly negative for Karnataka Bank, RBL Bank, South Indian Bank and Dhanlaxmi Bank. Also the operating results of private banks indicate that City Union Bank, RBL Bank, South Indian Bank and Dhanlaksmi Bank are having very high ratio of NPLs in the range of 5 percent and above.

There are many studies in India and in other countries which emphasize that governments have to be transparent in dealing with restructuring of banks. Also, any forbearance should be avoided as the delays in recognizing the banking problems makes it worse with time lag. Also, it is to be borne in mind that failure of a banking entity has a spiral effect on the economy and the depositors lose faith in the system. In India there have been recent cases of stress at Yes Bank, Lakshmi Vilas Bank (LVB) and PWC Bank where government had to intervene and take steps to ward off insolvency of these banks. Some of the private sector lenders are having stress in their operations as reflected by their ROA, ROE, Operating Profits and NPLs. It is high time that Government of India and Reserve Bank of India give due attention to this area and amalgamate the weak private lenders with the strong ones like ICICI bank, Kotak Mahindra Bank and HDFC Bank.

REVIEW OF METHODS OF ECONOMIC AND MATHEMATICAL MODELING OF BANKING RISKS

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The activities of each financial institution are accompanied by risky decision-making. There are several approaches to determining «risk», but the vast majority of scientists consider this concept as the probability of a negative result from the activity. For example, I. Ivchenko, the author of the manual «Modeling of economic risks and risk situations» uses the following definition: «Risk is the probability of losses or non-receipt of income compared to the forecast option» (2007). In the textbook «Planning of the enterprise» the authors V. Pasichnyk and O. Akilina gives the following explanation: «the essence of risk is that every company is constantly threatened by loss of profit and solvency in the implementation of economic and financial activities under the influence of unforeseen changes in the internal environment» (2005).

Banking risks are divided into:

– liquidity risk (on the website of the National Bank of Ukraine the causes of liquidity risk are: inability to manage funds, changes in funding or execution of off-balance sheet sources of resources) (2021).

– risk of changes in credit rates (arises due to adverse changes and interest rates, impact on profitability and value of assets, liabilities and off-balance sheet instruments) (2021).

– credit risks (arising from the inability of the obliging party, the terms of any financial agreement with the bank or otherwise committed) (2021).

– capital adequacy (The editorial board under the leadership of V. Stelmakh gives the following definition in the «Encyclopedia of Banking» «Capital adequacy – an indicator, that shows the availability of capital sufficient to perform its functions and cover the risks required during banking operations» (2009).

Risks cannot be completely avoided, but they can be investigated, analyzed and their consequences minimized (Mazurenko et al., 2021; Bozhenko, 2021; Starchenko et al., 2021; Dudchenko, 2020; Samoilikova, 2020; Yarovenko et al., 2020; Mazurenko and Tiutiunyk, 2021; Pimonenko et al., 2021; Kryvych and Goncharenko, 2020; Matsenko et al., 2021; Lazorenko et al., 2021; Oleksich et al., 2021; Mamay et al., 2021; Taraniuk et al., 2020). Economists use economic-mathematical methods and models to assess and manage risks (Yelnikova and Barhaq, 2020; Goncharenko and Lopa, 2020; Eddassi, 2020; Ziabina et al., 2020; Chukwu and Kasztelnik, 2021; Medani and Bhandari, 2019).

Economic-mathematical methods and models are a set of scientific directions, such as statistics and econometrics, aimed at the study of economic processes by mathematical methods. The use of economic and mathematical methods is widely used to solve practical problems, namely: organizing information and creating requirements for planning and management, problem analysis and study of factors that affect economic processes (Shkarlet et al., 2019; Vasilieva et al., 2017; Bublyk et al., 2017; Fila et al., 2020; Gallo et al., 2019). Mathematical methods allow to simulate economic situations and assess the consequences of choosing certain solutions. Methods of economic and mathematical analysis regulate the activities of credit and financial institutions, providing a choice of optimal solutions, allow you to analyze the value and possibilities of minimization, reducing uncertainty.

The most common economic and mathematical methods and models used to manage banking risk are:

– Method of mathematical programming. This group of methods allows you to minimize creditor errors and maximize profits, taking into account various constraints. Using the thematic programming method, the best optimal customer shares in the loan portfolio and / or the optimal parameters of credit products.

– Methods of linear programming. This method is used by analysts in solving many optimization problems, where the functional determinants of the studied phenomena and processes are deterministic. The results obtained using linear programming methods provide an opportunity to analyze the service and analyze the potential for changing the value of any of the parameters of the object under study, as well as other reserves that are not realized by the possibilities. Linear programming problems are successfully solved using modern specialized software products (2009).

– Methods of mathematical games. Used in the field of management decisions at the stage of forming an alternative and choosing the optimal strategy. Analytically, they can be presented as a game, three or more players, each of whom wants to maximize their benefits (minimally lose) at the expense of another strategy by choosing the optimal strategy. An example is the relationship between the bank and the client.

– A method of studying the operations of use in the analysis to obtain a comparative assessment of alternative solutions. The complexity of the method is that the researched operations are open systems, as well as related to other actions, which at a certain point in time are not of interest to the study, but can affect the course of operations. However, awareness of operations, its purpose, analysis of factors used for this purpose, comparison of costs and results should give the analyst a reason to identify certain and formulate the conditions of the tasks, conducting a selection of indicators.

Thus, the use of these economic and mathematical methods allows us to reduce the probability of loss of profit.

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GREEN BANKING IN THE SYSTEM OF EFFECTIVE FINANCING OF INVESTMENTS PROJECTS

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Nowadays, most scientists are convinced that the process of human development has entered a completely new stage, which can be described as catastrophic in terms of the environmental impact of society on climate and nature in general. To our mind, in such conditions innovative components in the economy could more effectively influence the process of halting the deterioration of the world`s environmental situation.

Over the last ten years, there have been radical changes in project financing approaches. In the process of functioning, banking institutions moved from the position of non-interference to the realization of its role in the field of environmental management and social responsibility, which embodied the concept of sustainable development in the banking sector and in the modern condition known as green banking.

The development of green banking and the creation of green banks (green investment banks, clean energy finance authorities) in a constant shortage of financial resources can be an influential element of environmental regulation through financial support for green projects and environmental management (Chukwu and Kasztelnik, 2021; Medani and Bhandari, 2019; Samoilikova, 2020; Yarovenko et al., 2020; Mazurenko and Tiutiunyk, 2021; Pimonenko et al., 2021).

Speaking about the advantages of such banks, they could be the following: preferential interest rates on loans, the possibility of extending the loan repayment period, writing off part of the loan amount in case of fulfillment of the conditions specified in the loan agreement to reduce the negative impact on the environment (Mazurenko et al., 2021; Bozhenko, 2021; Starchenko et al., 2021; Dudchenko, 2020; Yelnikova and Barhaq, 2020; Goncharenko and Lopa, 2020; Eddassi, 2020; Ziabina et al., 2020; Kryvych and Goncharenko, 2020; Matsenko et al., 2021; Lazorenko et al., 2021; Oleksich et al., 2021; Mamay et al., 2021; Taraniuk et al., 2020).

In addition in the process of protecting the environment, green banking practices help to solve important environmental problems by investing and lending to such projects and companies that adopt the green concept, on the one hand, and reducing internal carbon footprints such as lighting and air conditioning, electronic equipment, large waste of paper due to the use of renewable energy, which leads to less reduction of trees and reduces environmental pollution on the other hand. Customers, in its turn, save time and money through green banking, as well as reduce the amount of gas used when traveling to the bank, because instead they can apply to the bank for any online banking activity. Similarly, it also helps online payment services to avoid late payments.

For banks, green banking offers minor benefits, including increased friendliness and reputation, customer loyalty, a positive environmental impact, and the simplicity of the banking process that outweighs the monetary benefits. It also helps to understand corporate social responsibility and environmental performance and maintain its ethical standards.

In European financial circles, the green banking system is considered an important environmentally friendly philosophy of creating and running a business, which involves the use of resource-saving environmentally friendly technologies and products and encourages the implementation of environmental projects based on environmentally and socially responsible financing.

Green banking is implemented bilaterally: on the one hand, as a mechanism of banking management aimed at reducing environmental damage and costs due to the current operating activities of banks. For example, some banks have supported the concept of a "green" office.

In particular, Privatbank has implemented an electronic document management system. Thanks to the operation of this system and other electronic banking systems, the bank saves more than 20 tons of paper annually due to the introduction of electronic service of providing certificates and a digital system for processing incoming correspondence, which is transferred to the electronic form upon receipt by the bank.

On the other hand, green banking can be organized as a mechanism for providing monetary credit resources to stimulate environmental projects, the production of "green" technologies, environmental goods and services or to develop environmental activities (Shkarlet et al., 2019; Vasilieva et al., 2017; Bublyk et al., 2017; Fila et al., 2020; Gallo et al., 2019). That type of mechanism for implementing green banking that is an integral part of the economic mechanism of environmental regulation as a potential new mechanism of domestic environmental policy and attracts the most attention as a component of "green" finance.

In particular, these are the following new tools of the mechanism of providing monetary credit resources by Ukrainian green banking (Veklych, 2019:

• preferential credit rates (ie lower than market rates) for financing environmental projects, production of green technologies, environmental goods and services, purchase of environmentally friendly equipment on lease, as well as for the mobilization of green private investment;

• extended loan term for financing large-scale infrastructure projects for environmental protection, etc;

• loans, credits or other services for the purchase of certificates for emissions of pollutants (trade-in certificates for emissions);

• issue of asset-backed securities to finance large-scale infrastructure projects aimed at environmental protection (issue of green securities);

• sale by financial institutions of municipal bonds to finance environmental protection projects (partial credit guarantee for the implementation of green projects).

The most important task of providing the modern economy with the necessary investment resources in the field of eco-innovation activities of economic entities can be solved through the use of economic levers and incentives, their coordinated interaction, a clear sequence of functioning in the system of effective institutions of domestic innovation. play a significant role in co-financing environmental projects and programs in a crisis and lack of funds.

Thus, the introduction of green banking and the creation of environmental banks can be one of the driving forces to combat acute environmental problems, while increasing the share of environmental projects, which in turn increases the country's investment attractiveness and further promotes its economic growth.

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SHAREHOLDER ACTIVISM AND CORPORATE PERFORMANCE DURING COVID-19: EVIDENCE FROM THE INDIAN BANKING SECTOR

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The outbreak of Covid – 19 around the world has emerged as one of the most unpredictable events of this centennial and has created a profound impact on all the economy's sectors. The rampant proliferation of the pandemic has not only caused momentous disruptions in the personal health of the human race but has also severely affected the GDP growth and trade prospects of all the world economies (Baragde, D. B., et al. (2021). The banking sector in India, which is already grappling with ascending non-performing assets in past financial years, suffered a significant setback due to poor debt servicing capacity of the borrowers, decrease in the asset quality, and soaring bad loans during the pandemic period (Financial Stability Report, RBI, 2020, p.11-13). Various measures in the form of providing the adequate loan moratorium, deferment of net stable funding ratio and ease of working capital financing are taken by RBI from time to time to provide financial relief to the Indian banking sector (Aneja, R., & Ahuja, V. (2021). While the regulatory authority, RBI, focused entirely on providing economic relief to the Indian banks, no key action is taken by it to ensure those clear regulatory and supervisory standards concerning the shareholder rights and their access to appropriate information at all levels. Good governance by sensitivity to shareholder needs and rights is essential and plays a vital role in both recovery and forming a new normal post-pandemic in the banking sector (Ramasamy, D. (2020). The study measures the effect of Covid-19 on shareholder activism, a governance measure and corporate performance of the Indian banking sector for the period 2019-2020.

It evaluates the impact of Covid-19 on shareholder activism and the bank's performance in the pre- and post-pandemic period. It also empirically investigates their interrelationship during uncertain times. Shareholder's committee, board's independence, shareholder rights and their approvals in related party transactions are considered the independent variables which reflects shareholder activism while return on assets and return on net worth, reflecting the financial performance are taken as dependent variables (Endo, K. (2020). The influence of pandemic on the bank's governance and performance variables, pre and post covid time is analyzed by using the t-test. To scrutinize the association between shareholder activism governance variables and bank's performance during the Covid – 19 period, the panel data methodology is employed

Adequate constitution of shareholder's committee has emerged as the sole prominent governance parameter of shareholder activism that exerted a dominant influence on the bank's performance during the pandemic. The other independent variables such as board independence, shareholder information and rights and shareholders' approval in related party transactions were found to have an inverse interrelationship with bank's performance.

The results of the study propound the policymakers in developing a suitable governance framework that seeks to meet the shareholder expectations, provide them with openness and transparency to whistle-blower policies and tends to increase their activism at all levels (Karpoff, J. M. (2021). It highlights that policymaker shall work closely with the board of directors and help them in identifying the potential risks arising in the protecting the shareholder rights and getting the delayed resolutions passed with their consent. It stresses that comprehensive disclosure shall work positively in the interests of the external stakeholders and will create confidence in them related to the overall working of the banks. It also stresses on development of a shareholder-centric model which focuses not only on increasing the shareholder returns but also effectively working upon creating shareholder value during and after the pandemic (Prisandani, U. Y. (2021).

The study is imperative in providing the heuristic view on Covid – 19 repercussions on the governance procedures and the corporate performance. It demonstrates the contemporary issues of shareholder governance rights during the pandemic and unveils the avenues for subsequent research. The current study makes an effort to bestow to the deficient studies in this particular area. The effect of the pandemic on the governance of the Indian banks concerning shareholder activism is investigated. There exist few studies, which limit themselves to review the Covid – 19 impacts on the corporate governance of the firms. Such studies highlight the overall implications of the pandemic in different sectors of the Indian economy as well as the monetary steps which regulatory bodies shall undertake to reduce the pandemic's worst effects. The present study augments the existing literature of the Covid – 19 crises by empirically examining the influence of pandemic on the relationship of shareholder's governance and the bank's performance. The study also attempts to broaden current literature by examining the pandemic impact on banks' governance and performance variables during pre and post-crisis periods.

The current study intends to contribute to the limited studies analyzing the impact of Covid 19 by considering the governance about shareholder activism and performance dimensions of Indian banking sector. However, the authors acknowledge the presence of certain limitations which may provide suitable opportunities for future research. A future study with a large sample size or large period shall be carried out to better understand the impact of Covid – 19. Similarly, a comparative study can be conducted which empirically tests the pandemic impact across different sectors or financial markets. All the corporate governance variables are not inculcated in the current study. Future research can consider other dimensions of governance such as audit committee, remuneration, risk governance committee and corporate social responsibility etc. The bank-specific performance variables such as current account savings account ratio, net to income ratio and economic value added can be analyzed to examine the operating performance.

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CONCEPT OF CREATIVE ACCOUNTING

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Recent economic failures have created various credibility concerns concerning accounting as an authenticating system and the accuracy of its reports in making optimal management and investment decisions. Enron, WorldCom, BCCI, Robert Maxwell Pension Funds, Global Crossing, Adelphia, Tyco, and Arthur Andersen, one of the "Big Five" accounting firms, are all examples of companies that went bankrupt (Ramly and Rashid, 2010, McColgan, 2001, Khan. et. al, 2011 and Heath and Norman, 2004). These incidents demonstrate beyond a shadow of a doubt that the financial reports presented to the public by management and confirmed by auditors were a misrepresentation of the firms' true financial status. The accountants, managers, and auditors are charged with manipulating, distorting, and misrepresenting facts and figures in order to create fictitious outcomes, as well as overlooking such misrepresentation in order to offer a clean opinion to such management. Many studies have been undertaken on these 'creative' accounting techniques, their manipulations, re-representations, and reasons in the middle of these crises and corporate failures, and the resulting loss of reputation for the accounting profession (Beshiru & Izedonmi, 2014, Fizza & Qaisar, 2015).

Given how firmly established the techniques are and who gains the most, few practitioners are pessimistic about finding a solution to these manipulations. As a result, it's important to figure out how much of a negative impact this "creativity" has on accounting reports. The worsening of this degradation is the driving force for this study. It aims to emphasise the need of understanding the motives for negative creativity and determining the direction and degree of activities required to stop it from infiltrating the economic lives of businesses and its stewards. To that end, the study aims to investigate the concept of "creativity" in creative accounting, as well as the motivations for such creativity and their implications for the enterprise's health. It also aims to determine the impact of such benefits in encouraging more negative creativity, as well as to identify other complementary variables that encourage facts and figures manipulations and misrepresentations, and to propose possible strategies to reduce or control their spread. As a result, the purpose of this research is to look into the impact of innovative accounting techniques on the rate of business failure around the world. Its goal is to see how much inventive accounting procedures boost the rate at which businesses around the world fail.

The Concept of Creativity. Accounting is one of a company's most fundamental functions. Both management and decision-makers outside the organisation rely heavily on the financial data it delivers. Financial reporting's primary goal is to present a fair and impartial picture of the business to all interested parties. This frequently results in a conflict of interest. On the one hand, investors demand dependable and trustworthy financial data in order to make informed judgments. On the other hand, corporations that, in order to attract investors, are resorting to unethical methods of creative accounting, or earnings management, as a result of increased competition and economic conditions.

Creative accounting is a methodology for erroneously creating or interpreting accounting regulations with the goal of misusing accounting techniques and standards defined by accounting bodies. The goal of this type of business strategy is to gain money by not revealing exact data. The word "creative accounting" does not appear in any accounting rules or regulations, nor are the processes for its use specified. It's an attempt to take advantage of flaws in our accounting system as well as our audit system once the accounts are closed. Companies sometimes make loans to their known persons to deliberately hide the transactions performed during the year or increasing the usable life of an asset arbitrary to get rid of the greater depreciation charged, are some of the examples of creative accounting.

Overview of recent research. Many aspects of creative accounting have been studied in past study, according to Bhasin (2016), but no one has looked at what the people who prepare financial statements, as well as their users, think about it. Based on this, a survey in India revealed that most respondents feel creative accounting has negative consequences on financial reporting and is difficult to detect. Nonetheless, there are differing views on whether creative accounting is legal. Karim et al. (2016) performed a survey to determine whether there is a gap between accounting and auditing perceptions of creative accounting, as well as potential regulatory remedies in Bangladesh. According to the report, there is no need to penalise either auditors or accountants who use creative accounting. Accountants are the sole employees of the organisation who obey management's orders. As a result, if management mandates that financial statements be prepared in a specific way, accountants will prioritise retaining their jobs and will adhere to the instructions.

Mindak et al. (2016) investigated whether companies utilise creative accounting techniques to meet analyst forecasts and outperform the previous year's earnings, and whether the market rewards or punishes such manipulations. According to the report, all the companies who were able to achieve the targets did so by employing inventive accounting practises to artificially boost profitability and were rewarded by the market for doing so. Companies that managed earnings to cut them to the point where they barely met the specified goals, on the other hand, were not rewarded. As a result, organisations that aim to maintain the same level of earnings over time are not regarded "excellent" because they do not outperform the market.

The relationship between the audit committee and audit quality, as well as the practise of earnings management, has been explained by Inaam and Khamoussi (2016). The primary goal of corporate governance in financial reporting is to ensure that accounting rules are followed and that financial statements are accurate and trustworthy. As a result, excellent corporate governance should ensure that effective controls are in place and that unethical managerial behaviour is avoided. Although quality corporate governance, audit committees, and quality audit implementation are thought to influence the limited use of various earnings management approaches, this study found a negative link between earnings management and practise.

According to Shahid and Ali (2016), creative accounting has a substantial impact on Pakistan's fair and objective financial reporting. It is vital to emphasise corporate governance and the strengthening of ethical standards in order to prevent financial information manipulation. In a good sense, the limited and modest use of creative accounting should have no impact on the quality of financial reporting.

Because most of the research in the topic of creative accounting focuses on how it affects company, Goel (2017) investigated the influence of creative accounting on stock market pricing. The findings revealed that firms utilise accruals to manipulate financial data, most frequently during periods when financial markets are apprehensive about a company's future commercial prospects.

Motives for applying creative accounting:

- personal gain
- competition
- recruiting investors
- raising or preserving capital
- buying time to avoid paying debts
- outperforming experts' predictions about future firm performance

Creative accounting techniques:

- changes in accounting rules and depreciation procedures
- manipulation of other income and cost items
- changes in the value of money
- overestimation of revenues through the recording of phoney sales revenues
- manipulation of receivables write-offs
- manipulation of accruals

Techniques for preventing creative accounting:

- accounting standards adaption in terms of reduced use of guesses and consistency in accounting procedures application.
- acknowledging and emphasising the need of internal and external audit in detecting and reporting erroneous estimates and preventing accounting fraud.
- From one accounting period to the next, the audit service providers may change.
- appointing independent directors and audit committee members
- putting in place strong corporate governance controls

- the company's commitment to creating a whistle-blower policy
- reiterating the code of ethics to employees on a regular basis
- emphasising the creation and application of forensic accounting
- informing investors about the practise of altering financial data
- ensuring that fines are consistently enforced by national authorities.

Conclusion. The primary goal of financial reporting is to present a fair and impartial picture of the company while taking into consideration basic accounting principles and assumptions. Accounting standards, on the other hand, frequently enable and require various accounting guesses, which can lead to financial data manipulation. Creative accounting is a type of accounting that allows a corporation to divert its profits and revenues for the year while still adhering to the norms and regulations. It is a skill that is utilised by specialists to manipulate a company's accounting. Any questionable item should be questioned by management, and if the management is unable to respond, the investor should not invest in these bogus companies. Finally, while creative accounting cannot be totally eliminated, it can be minimised through the employment of various techniques.

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ANALYSIS OF THE IMPACT OF ONLINE PAYMENTS ON THE SECURITY OF BUSINESS DIGITALIZATION[1]

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Today, digitalization is a global trend, which is the introduction of digital technologies in all areas of business: from interaction with customers to automation of industrial production, from product marketing to logistics solutions and more. Based on the question of what the digitalization of business is, we can say that this process is deep for the company. Its main objectives are: improving the product (quality of the product or service, its attractiveness, ease of use, delivery); automation of production and other internal processes of the company; simplification of internal and external communications (Mazurenko et al., 2021; Bozhenko, 2021; Starchenko et al., 2021; Samoilikova, 2020; Yarovenko et al., 2020; Mazurenko and Tiutiunyk, 2021; Pimonenko et al., 2021; Kryvych and Goncharenko, 2020; Matsenko et al., 2021; Lazorenko et al., 2021; Oleksich et al., 2021; Mamay et al., 2021; Taraniuk et al., 2020).

Digitalization of business is aimed at optimizing business processes, the use of digital technologies and improving the accuracy of economic systems, including the transition to electronic platforms and contactless ways of conducting business operations (Security Risk, 2017; Shkarlet et al., 2019; Vasilieva et al., 2017; Bublyk et al., 2017; Fila et al., 2020; Gallo et al., 2019). Statistics show that the number of contactless payments in Ukraine last year increased by more than 45%, if we analyze certain categories - the rapid growth in transport services - by 60%, in the food trade - by more than 100% (Alrawais, 2020).

In the context of digitalization of business processes, an alternative to cash payments is the use of innovative contactless technology NFC tags (Near Filed Communication). With the rapid development of the Internet and wireless technologies, it has gained high popularity and has become the most common tool for digitalizing business operations (Dudchenko, 2020; Yelnikova and Barhaq, 2020; Goncharenko and Lopa, 2020; Eddassi, 2020; Ziabina et al., 2020; Chukwu and Kasztelnik, 2021; Medani and Bhandari, 2019). Specialists of the payment systems company ACI Worldwide, which is the leader in software development focused on simplifying electronic payments over time, published a rating indicating the ranking of countries in the use of NFC technologies. The figure shows the leading countries

[1] The material was prepared within the framework of the R&D "Modeling of eco-innovation transfer in the enterprise-region-state system: impact on economic growth and security of Ukraine" (№0119U100364), which is financed from the state budget of Ukraine.

and the volumes of the payment market for 2020 for 48 world markets (Fig. 1). According to statistics from the transnational financial corporation MasterCard, among all non-cash payments in Ukraine in 2020, 72% of payments were made contactless, while in 2019 this figure was 51%. Today 46% of all contactless payments in Ukraine are made using NFC tags in smartphones and gadgets (Alrawais, 2020).

The size of the world market for the use of NFC technology has been growing dynamically since 2014. Figure 2 shows the forecast data of the market size of the contactless payment system, indicating that over the next 3 years the volume of its use will almost double (from $ 25.5 billion in 2021 to USD 47.3 billion in 2024).

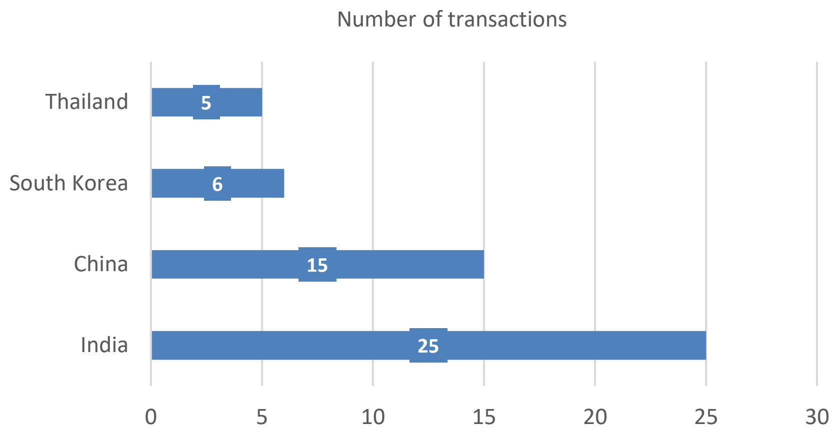

Figure 1. Number of NFC payments for 2020

Sources: developed by the authors based on (Statgraphics, 2021).

It should be noted that the use of NFC technology, according to scientists and experts, can be a source of problems associated with the leakage of personal data in the business sector. The main threats when using NFC technology are: eavesdropping (attackers "listen" to the air of devices during the NFC-transaction), data modification, MitM-attack (a situation where the cryptanalyst is maliciously able to read and modify at will the messages exchanged by correspondent none of the latter can guess its presence in the channel), theft of the device and errors in the program code. Electronic device security experts have also proven the vulnerability of NFC tags. They used the NFC tag to redirect victims' smartphones to malicious websites through the Android Beam app. This led to the redirection of electronic payments from the legitimate recipient site to sites that received payment illegally. In this context, the issue of coverage of online payments for the security of digitalization of entire enterprises is becoming important. In the conditions of the growing market of use of innovative technologies it is necessary to solve a problem of safety of use of NFC-labels in the field of small business for the purpose of preservation and increase of level of protection of business interests.

In this regard, for the development of digitalization of business it is necessary to pay much attention to the problem of information education of entrepreneurs, technical support for digitalization of business processes and legal protection of business structures.

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BASIC APPROACHES TO MANAGING THE ECONOMIC STABILITY OF ENTERPRISES

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Nowadays, it is very important to analyze the concepts of "stability of systems", "economic stability" and "management of economic stability". The right and clearly chosen approaches to managing the sustainability of economic systems ensure the effective functioning of economic relations and the creation of investment potential in the country. Every day, the stability of economic systems is becoming more important, because it depends on the effective functioning of all industries, the competitiveness of enterprises in the markets and so on (Shkarlet et al., 2019; Vasilieva et al., 2017; Bublyk et al., 2017; Fila et al., 2020; Gallo et al., 2019).

The concept of economic stability, when viewed from the standpoint of enterprises, means the ability of the system to maintain its working condition to achieve the planned results in the presence of various disturbances (Mazurenko et al., 2021; Bozhenko, 2021; Starchenko et al., 2021; Dudchenko, 2020; Yelnikova and Barhaq, 2020; Pimonenko et al., 2021; Kryvych and Goncharenko, 2020; Matsenko et al., 2021; Lazorenko et al., 2021; Oleksich et al., 2021; Mamay et al., 2021; Taraniuk et al., 2020). Without it, it is impossible to organize economic growth and efficient existence of the enterprise. To achieve a stable state, the enterprise, which is an open socio-economic system, must have the ability to reflect the negative impact of external and internal environmental factors, aimed at changing the stability of the enterprise as a system.

Also, prominent scientists note that the economic stability of enterprises is the ability to withstand various negative economic influences, the ability to adapt to them, to use them with the greatest effect on enterprises (Maslenko, 2002; Goncharenko and Lopa, 2020; Eddassi, 2020; Ziabina et al., 2020; Chukwu and Kasztelnik, 2021; Medani and Bhandari, 2019; Samoilikova, 2020; Yarovenko et al., 2020; Mazurenko and Tiutiunyk, 2021).

To ensure the economic stability of the enterprise it is necessary to identify problems and threats that are inherent in the management process. Nowadays, many companies are on the verge of bankruptcy due to the fact that they failed to structure the management of economic stability. We can say that here you need to be able to properly balance all the processes that will help the company to function effectively.

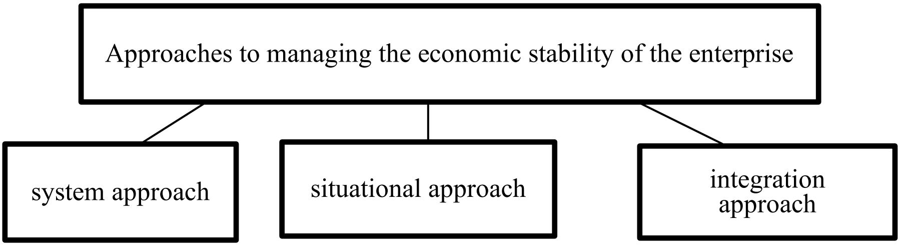

Figure 1 – Approaches to managing the economic stability of the enterprise (Kozlovskyi, 2017)

Thus, the practice of implementing the concepts of sustainable development allows us to identify the following basic approaches to managing economic sustainability (Illustrarion 1). The first approach, namely the system approach, explains to us economic stability as a set of interconnected components that create a balanced development through the optimal quantitative relationships between the elements of the system and the formation of stable structural relationships between them. We can conclude that this approach ensures the coherence of all structural elements and forms a holistic system in a changing environment. Thus, the systems approach reveals the essence of the phenomenon as an independent system of a certain order, with different structures of relations with other economic systems and develops synthetic and analytical indicators that characterize the quantitative side of phenomena and processes in inseparable connection with their qualitative parameters.

The situational approach helps us to identify patterns of economic stability in space and time and to build a structure of management actions to ensure a dynamic balance in a certain period of time and in a particular market situation. It should be noted here that in this approach, economic stability is seen as a temporary phenomenon that is achieved in the process of constant interaction with the external environment. This approach tries to determine what are the significant variables of the situation and how they affect the effectiveness of the organization. Quantitative parameters that have been accumulated in the process of evolution change the qualitative characteristics of our system, and therefore there is a destruction of the internal consistency of the system. The imbalance is replaced by the creation of new stable proportions, and at the same time provides an economic systemic transition to a new effective level of development.

As for the integration approach, it is a set of economic systems of micro, meso and macro level. Speaking of this approach, we can say that it is an approach to the study of economic processes from the point of view of the modern economic system, which is a set of economic systems of different levels: the state, regions, industries and so on. Objective process of development of deep, stable interrelations and division of labor between national economies, creation of international economic complexes within the state (Arefieva, 2008).

Summing up, I would like to note that it is important to properly organize management actions and management process, based on the above approaches. Economic sustainability attracts a lot of attention, and must be constantly in the mind of the manager, as it is a continuous process that is interconnected with the whole enterprise. Economic sustainability management means the use of organizational, economic and social methods in order to direct them to the economic sustainability of the enterprise.

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DIGITAL MARKETING FOR SMALL AND MEDIUM BUSINESS

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The current business addresses more digital marketing instruments. In turn, the traditional ones stay behind. It is appropriate to highlight that digital marketing helps businesses achieve maximum return on investment (Bilan et al., 2020; Chygryn et al., 2020; Elsayed, 2021; Khomenko et al., 2020; Kibaroğlu, 2020; Minchenko et al., 2020; Mirdamad, 2020; Lyulyov et al., 2020; Palienko et al., 2017; Burlakova et al., 2013). Moreover, by applying new and highly effective methods, such as targeted advertising, the impact on potential consumers increased while costs decreased. As a result, small and medium-sized businesses could scale quickly. Targeted advertising allows hitting the target audience. At the same time, even classic advertising has its segment but is broadcast to all.

Generally, targeted advertising is defined as advertising on social networks such as Facebook or Instagram. It stands to note that it provides an accurate display of advertising (Dubina et al., 2020). Thus, it has a more significant impact on the loyalty of potential consumers. The absence of territorial restrictions, active involvement of consumers in interaction with the brand and easy access to the resource allows reaching more consumers and reduce the advertising cost.

Besides, detailed targeting forms a target audience concerning the particular consumer interests. Thus, advertising is shown only to those users who satisfy all target requirements. For example, in the case of a women's clothing store, there are options to choose the audience based on such interests as women's clothing, dress, fashion, stylish clothes. These interests form an audience that could be adjusted. After establishing the audience and selecting advertising placements, it is necessary to set up an advertisement section.

Summarization of the scientific findings allowed concluding that targeted advertising is used to attract, sell, show, broadcast, and inform (Pavlenko et al., 2020; Melnyk et al., 2018; Kostetskyi, 2021; Chygryn, 2017; Lyulyov et al., 2019; Minchenko and Ivanov, 2020; Novikov, 2021). Effective marketing allows getting cheap customers for almost any business using different sales funnels and advertising goals (from traffic on Instagram to Conversions on a landing page) (Vasilyeva et al., 2020; Syhyda et al., 2018; Pimonenko et al., 2018b; Rosokhata et al., 2020; Pimonenko et al., 2019a; Syhyda and Illiashenko, 2016; Pimonenko et al., 2016). Noteworthy here, such brands as AUDI, BMW, Mercedes, Louis Vuitton, and Gucci use targeted advertising to reach even more potential customers.

However, it stands to emphasize that not all businesses could use targeting. For example, Rolls-Royce Motor Cars Limited isn't advisable to use targeting because their customers do not look for quality and expensive cars on the social network. For this campaign, it is better to use another sales funnel, for example, through a website offering to take a test drive. It is essential to test different hypotheses and advertising communication types. Indeed, targeted advertising involves testing to achieve maximum effect from the advertising campaign. Before running the advertising campaign, it is necessary to develop ads that match the placement format (Akhundova et al., 2020; Pimonenko et al., 2019b; Urbánné, 2020; Pimonenko et al., 2021; Yula et al., 2020; Pimonenko et al., 2017a; Ziabina et al., 2020; Pimonenko et al., 2017c; Ziabina et al., 2021). Notably, 1080/1080 is a feed format, 1920/1080 – a video or photo advertising format in stories. In the target advertisement, it is advisable to display the product or describe the service, provide an offer and make a call to action. For example, it could be a picture of a girl in women's clothes, a written offer, free delivery, and a call to action "Buy now".

Therefore, advertisement is the first thing a user faces (Us et al., 2020; Thomas, 2020; Starchenko, 2020; Pimonenko et al., 2018a; Rosokhata and Chykalova, 2020; Saher et al., 2018; Skrynnyk, 2020; Pimonenko et al., 2017b). If it gets directly into the client's pain points or, conversely, gives a solution to a problem, the client would interact with the company advertisement and most probably use the service or buy the product. In turn, when the potential client only visited the main web page and quit, it is appropriate to use retargeting. It raises the possibility to return the client showing the services or goods in another way. Therefore, the user is more likely to become a customer.

The obtained results of this study showed that targeted advertising works in small and medium-sized businesses. At the same time, advertising efficiency depends on the selected target audience's accuracy and the construction of an interaction system.

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THE GLOBAL FINANCIAL CRISIS AND ITS IMPACT ON UKRAINE'S ECONOMY

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Against the background of the recent and current global financial crisis traceable to corporate irresponsibility on the part of some financial sector players in developed countries especially the United States of America in the housing and credit markets, many economists and non-economists are raising their voices against globalization of finance. In simple language, globalization of finance is evident as the integration of the financial systems of many countries of the world. On the other hand, the financial crisis describes various negative changes in the financial system evident as the sudden loss of value of assets, banking sector panics, credit crunch, sovereign defaults and stock market crashes among others (Mazurenko et al., 2021; Bozhenko, 2021; Starchenko et al., 2021; Dudchenko, 2020; Yelnikova and Barhaq, 2020; Goncharenko and Lopa, 2020; Eddassi, 2020).

The recent financial crisis has resulted in major losses on the part of individuals and corporate entities and nations even with reports of high-profile businessmen committing suicide following the loss of huge sums of money. This paper thus seeks to look at the problem of the spread and effects of the financial crisis from the scope of one country to another, especially among developing countries.

We can see many views on the causes of the financial crisis and it can include high personal and corporate debt, the inability of homeowners to make mortgage payments, poor sense of judgement by borrowers and lenders, speculation and overbidding during borrowing period, risky mortgage products, complex financial innovation that concealed default risk, lack of proper government regulation. The other important question on the other hand is whether globalization of finance's benefits outweighs the adverse effects (Ziabina et al., 2020; Chukwu and Kasztelnik, 2021; Medani and Bhandari, 2019; Samoilikova, 2020; Yarovenko et al., 2020; Mazurenko and Tiutiunyk, 2021; Pimonenko et al., 2021; Kryvych and Goncharenko, 2020; Matsenko et al., 2021; Lazorenko et al., 2021; Oleksich et al., 2021; Mamay et al., 2021; Taraniuk et al., 2020).

The global economic crisis that started in 2008 has engulfed the entire world and has laid waste to the process of globalization that was blamed by many as being the root cause of the crisis.

After the American Investment Bank, Lehmann Brothers filed for Bankruptcy in September 2008, the entire global financial system was at the risk of collapse because of the integrated and interconnected nature of the global economy.

However, it would not be fair to say that globalization alone is responsible for the crisis and individual governments had a role to play in ensuring that their economies were well regulated and insulated from global shocks (Shkarlet et al., 2019; Vasilieva et al., 2017; Bublyk et al., 2017; Fila et al., 2020; Gallo et al., 2019). This line of thinking holds the view that though the global economy is integrated, a mixture of policies designed to keep the flows of hot money and capital in check and ensuring proper regulation would have gone a long way in insulating the economies of the world from the aftershocks of the global economic crisis. The growth of trade, deliberate removal of barriers and the advancement of technology have led to the integration of the financial systems of nations with each other. This however has both beneficial and adverse consequences depending on what factors are on display at any point in time not minding the present financial crisis in the world.

Globalization, which is promoted by the growth of technology, migration, trade, tourism, currency convertibility and capital account liberalization makes the mobility of capital higher than it has ever been in the history of mankind. Individuals and firms who own idle funds do benefit from the globalization of finance largely through the possibility of reduced risk and improved returns synonymous with global diversification.

There are signs that are used for predicting crisis such as high unemployment, near-bank collapse, and an economic contraction. financial crises occur following either bank runs or a sudden severe drop of asset prices in capital markets, both of which will consequently cause the collapse of big financial and non-financial firms. Using historical data on financial crises around the world, we show that crises are substantially predictable.

The combination of rapid credit and asset price growth over the prior three years, whether in the nonfinancial business or the household sector, is associated with about a 40% probability of entering a financial crisis within the next three years.

Financial crises are substantially predictable byproducts of rapid expansions of credit accompanied by asset price booms that show that rapid credit growth and asset price growth predict banking crises in 34 countries between 1970 and 1999, these are called "early warning indicators". One critical early warning is "super-exponential growth" in investment returns — 5% in year one, 10% in year two, 20% in year 3, and so on. This was the level of growth that inflated the bubble prior to 2007.

Financial crisis mostly caused by deregulation in the financial industry. That permitted banks to engage in hedge funds then demanded more mortgages to support the profitable sale of these derivatives. For example, in 2007-2009 economic conditions in the United States and other countries were favourable. Economic growth was strong and stable, and rates of inflation, unemployment and interest were relatively low. In this environment, house prices grew strongly. Expectations that house prices would continue to rise led households, in the United States especially, to borrow imprudently to purchase and build houses. A similar expectation on house prices also led property developers and households in European countries to borrow excessively. Many of the mortgage loans, especially in the United States, were for amounts close to the purchase of a house A large share of such risky borrowing was done by investors seeking to make short-term profits.

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THE IMPACT OF LABOR RESOURCES ON GREEN COMPETITIVENESS AND FINANCIAL STABILITY OF ENTERPRISES

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Research on the impact of human resources on green competitiveness and financial stability of enterprises has begun to gain momentum recently. The first thorough research in this area dates back to 2010-2011.

Thus, scientists (Ou, et al., 2011) have developed a system of indicators for the analysis of green competitiveness in the context of the transition to a green economy (Gouvea, et al., 2013).

It is necessary to pay attention to the meaningful study of competitive strategies of green suppliers in the context of the development of green law (Tsai, et al., 2014).

The authors argue the relationship between the effectiveness of strategic personnel management and the level of competitiveness of small and medium-sized businesses (Akpoviroro, et al., 2018; Md Yusuf Hossein Khan, 2018; Ziabina, et al, 2021).

It is also necessary to note the scientific works, which study the impact of staff efficiency in the public sector, the results of which showed the need for additional research in this area, because the existing methods are not very effective in the current reality (Balaraman, et al. 2018; Shipko, et al., 2020; Pavlenko, et al., 2021).

The study of the impact of corporate culture on the efficiency of labor resources in various sectors of the economy is relevant today (Oluwole, 2021; Dave, 2019), as well as the impact of corporate governance on their financial and economic performance and level of competitiveness (Tommaso, & Gulinelli, 2019; Gupta, 2021).

The scientific community is still studying the phenomenon of human capital and its potential and role in shaping the competitiveness of both the individual enterprise and the country as a whole, because all invented technologies, methods, know-how, etc. are the results of the human brain (Zeynalli, 2021; Pimonenko et al., 2018). At the same time, labor resources are considered as one of the innovative tools that affects the level of development of the national economy as a whole (Mazur-Wierzbicka, 2019; Antonyuk, et al., 2021).

Studies of domestic and foreign scientists show that the development of the enterprise, including the level of competitiveness and financial stability is more effectively influenced by internal factors (Pimonenko et al. 2017; Dubina et al., 2020; Akhundova et al., 2020; Sotnyk and Us, 2018).

The internal factors influencing the level of competitiveness and financial stability of the enterprise include labor resources - it is the provision of human resources, skill level, productivity and management methods, and so on.

The results of trend analysis revealed an increase in global interest in such a phenomenon as “green competitiveness”. It is also necessary to note the decline since 2005 in the dynamics of search queries for the key term “labor resources”. The dynamics of search queries for the term “financial stability” is not stable enough, but it is advisable to pay attention to the increase in search queries in the period 2008-2010, which was provoked by the global financial crisis. At the same time there is a direct correlation in the dynamics of search queries.

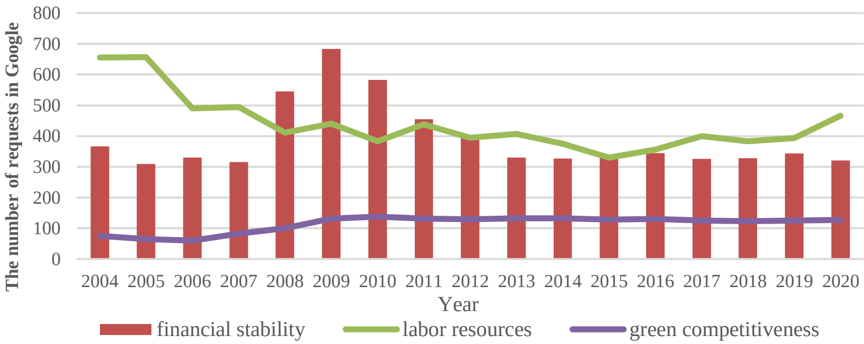

Figure 1. Dynamics of search queries on the key terms “green competitiveness”, “financial stability” and “labor resources” in Google using Google Trends

The study of the impact of human resources on green competitiveness and financial stability of enterprises took place in several stages. As a result of the analysis of scientific research, it was concluded that the topic is quite relevant but not fully disclosed, because among the scientific community there are still no generally accepted methods for assessing the green competitiveness of enterprises and research in the field of human resources as determinants of green competitiveness and financial stability quite a bit.

The trend analysis revealed a growing interest in the world in such phenomena as “green competitiveness”, “financial stability” and “labor resources”. In general, it is necessary to note the publishing activity on the impact of human resources on green competitiveness and financial stability of the enterprise since 2008. At the same time, the largest share of publications falls on 2020-2021. The results of the study revealed a significant impact of labor resources and methods of their management on the level of green competitiveness and financial stability of enterprises.

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SHADOW ECONOMY AS A THREAT TO NATIONAL SECURITY

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The shadow economy is inherent in the economic system of any state without exception. However, depending on the scale, it affects the economic and socio-political processes in a given country in different ways.

In the literature, the allowable size of the shadow economy is 5-10% of GDP, this scale does not cause significant changes or violations in the socio-economic processes of the state. An increase in the size of more than 30% of GDP is evidence of the existence in society of a reproductive system of shadow economic relations, which leads to an imbalance in the economy (Borusevych, 2012).

According to the Ministry of Economy of Ukraine as of the 1st quarter of 2021, the size of the shadow economy is 30% of official GDP, which exceeds critical limits (Department of Strategic Planning and Macroeconomic Forecasting,). In turn, this leads to disparities in the economy, losses of the state budget, reduced financial security, ineffective decisions of socio-economic policy. That is why, in order to ensure the sustainable development of the country and improve the living standards of the population, it is necessary to minimize both internal and external threats to economic security, one of which is the shadow economy.

The concept of "shadow economy" means economic activity aimed at generating income bypassing government regulation, monitoring and taxation. It includes monetary and non-monetary transactions of a legal nature that are subject to taxation (Feige, 2016; Mazurenko et al., 2021; Bozhenko, 2021; Starchenko et al., 2021; Dudchenko, 2020; Yelnikova and Barhaq, 2020; Goncharenko and Lopa, 2020; Eddassi, 2020).

An increase in the share of the shadow sector leads to an increase in the level of instability in society, its criminalization and the emergence of threats to economic security (Shkarlet et al., 2019; Vasilieva et al., 2017; Bublyk et al., 2017; Fila et al., 2020; Gallo et al., 2019). According to the National Security Strategy of Ukraine, the most threatening for economic security is the high level of shadowing of the economy, the lack of sufficient incentives to legalize income and increase shadow employment.

The shadow sector, as a system of economic relations not regulated by the state, associated with the formation and use of funds to meet their own needs or commit illegal acts, is a danger to all components of the economic system (Ziabina et al., 2020; Chukwu and Kasztelnik, 2021; Medani and Bhandari, 2019; Samoilikova, 2020; Yarovenko et al., 2020; Mazurenko and Tiutiunyk, 2021; Pimonenko et al., 2021; Kryvych and Goncharenko, 2020; Matsenko et al., 2021;

Lazorenko et al., 2021; Oleksich et al., 2021; Mamay et al., 2021; Taraniuk et al., 2020). Such relations are carried out in relation to the distribution of the value of GDP, income from foreign economic activity and part of the national wealth, which are then used to reproduce shadow relations, criminal or terrorist activities (Dyuz-Kryatchenko & Lisitsyn, 2014).

Such crimes as: money laundering; withdrawal of currency to offshore zones and to bank accounts of fictitious firms or abroad; withdrawal of funds from state control and taxation; misuse of budget funds is the most dangerous threat to economic security and requires an immediate response.

These phenomena are most actively spread during crises and economic reforms, creating an even greater imbalance in the economic and social system of the country (Podmazko, 2014).

Given the complexity of the organization of shadow schemes in the economy and active penetration into various spheres of public life, identified the main areas of its impact on the development of relations in:

- economic environment: increasing the tax burden on businesses and individuals; reduction of revenues to the budgets of different levels due to the optimization of taxation and concealment of the real value of the object of taxation; deformation of the structure of budget expenditures by underfunding of priority and socially important activities; increase in public debt; reducing the investment attractiveness of the country; creating pressure on market competition; withdrawal of national capital outside the country.
- social environment: increasing criminalization of society, lower living standards, increasing official unemployment in the country, increasing the level of income inequality, weakening social protection and security, increasing external migration, exacerbating social conflict and tension in society.

Unfortunately, it is impossible to completely get rid of the shadow economy, but it is possible to reduce its scale by creating favorable conditions for increasing economic and investment activity of economic entities in the formal sector. That is why the primary task of the state on the way to de-shadowing and preventing economic threats is to develop a comprehensive approach that will take into account the peculiarities of the national economy, based on international experience and international standards to combat them.

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BLOCKCHAIN TECHNOLOGY: CURRENT STATUS AND PROSPECTS

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The constant growth of competition in the market, the sharp differentiation of the population's needs encourage the world and lead companies to seek new directions of business development. It should also be borne in mind that the situation with the Covid-19 Pandemic and quarantine has become a catalyst for the development and dissemination of the most applied and practical projects in the field of e-commerce, remote work.

All this has led to the fact that the development of cryptocurrencies and increasing the share of e-business methods used only in narrow areas. They have become widely used and now perform all the necessary functions for the stable development of the enterprise. The best known and most profitable is blockchain technology, which has proven its effectiveness in recent years, increasing the profits of companies that use it. Using this technology can reduce companies' costs, especially participants in the stock market, and provide regulatory activity and a stable position in the market. You can also assess the risks of information loss, minimize them, develop the most effective algorithms in each case.

The development of blockchain technology is associated with the advent of bitcoin. Blockchain is based on distributed technology distributed ledger technology (DLT). Blockchain technology solves the problem of double the cost. This is done by opening the key cryptography key: each user is assigned a private key, and all other users share a public key. The blockchain contains registers of transactions built-in chains, they form blocks of information. Each block includes the previous block's data; while all data is protected, any attempt to delete them is impossible. The base is decentralized, does not belong to any business entity, is not controlled and regulated by a third party, is characterized by anonymity and the use of an agreed consensus mechanism.

The global application of blockchain technology is widespread. Such countries use it as the USA, Germany, France, Estonia, China, Ukraine, others. The leader of the blockchain in the field is the United States. However, according to forecasts, in 2021–2023 China will take the leading position (PwC, 2018). In the United States, the main exchange-traded funds, hedge funds, and cryptocurrency companies that use the blockchain are widespread. Blockchain is used in the financial, land, military, political, and real estate sectors. The worldwide distribution and use of the blockchain have their advantages: the technology facilitates the process of digitizing documents, access to public services, simplified information management, provides the ability to pay taxes online and more.

The World Economic Forum in Davos predicted that by 2027, 10% of world GDP would be stored in blockchain networks. If it is necessary to note that Ukraine reaches 14 leading countries, then technology is being introduced to the bottom. (Ukrinform, 2018). Ukraine is also among the top ten countries where blockchain is used at the state level. According to the Blockchain of Ukraine Association, about 200 crypto companies and blockchain companies in Ukraine. 78% of the companies are focused on both Ukrainian and global markets, 16% only in foreign markets and only one company solely in the Ukrainian market (BAU, 2019). Most companies communicate very closely with everyone members of the blockchain/crypto community in. An active community that includes founders companies, private entrepreneurs, experts and enthusiasts of the industry have more than 350 participants. On average, the topic of blockchain and cryptocurrency. One event a week takes place in Ukraine.

At the end of January 2021, the Strategy for the Development of the Financial Sector of Ukraine until 2025 was approved. The key direction is the development of big data, blockchain and cloud technologies (NBU, 2021). The NBU's efforts aim to develop the concept of the digital hryvnia. Thus, the regulator is trying to respond quickly to digital trends in the global economy, adapting to the new challenges of the domestic financial and credit system. Regarding the opportunities for domestic companies that plan to implement blockchain technology to function your activity, it is an official legal and cooperation with the banking system. In this way, you can significantly reduce operating costs and increase working capital.

Thus, the use and development of blockchain technologies will minimize risks and increase the economic level of the country's development.

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DEVELOPMENT OF DIGITAL BANKING

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More than 70% of commercial banks in Ukraine and some insurance companies had difficulty attracting customers during the coronavirus pandemic. Therefore, their primary efforts focused on digitizing products, changing approaches to promoting goods and services on the Internet, and developing remote customer service channels.

However, fully digital banks offer a different perspective on the future of banking. It turned out that the most prepared for the period of restrictions were digital banks, whose business model provides for the complete digitalization of all services and products. These financial institutions did not have significant problems with sales and customer service during the pandemic. Despite the availability of more advanced tools for digital sales and customer service, digital banks consider it necessary to develop a data-oriented approach further and strengthen their competencies in digital marketing (Phaneuf, A., 2021).

The driving force behind the implementation of the Open Banking initiative is the Payment Services Directive 2 (PSD2) in the EU. This directive came into force on January 12, 2018, requiring banks to open customer information to third-party suppliers through open APIs (software interface). This initiative has given fintech companies new opportunities in the market and to monetize both their services and the services of other service providers or banks (Directive (EU), 2015).

Opening a current account online is now a standard feature for fintech companies, neobanks and digital banks. Although a few years ago, the ability to open an account through a mobile application was a very innovative feature. According to Statista, 60-70% of respondents prefer to use online channels or mobile applications to connect to financial services because physical identification in a bank branch means less comfort and more time (Aslund, A., 2021). Digital banking services have been created to improve the customer experience and connect to services from any device and anywhere in the world.

In addition to financial capabilities, open APIs allow companies to provide personalized services to the end-user. In addition to online applications for end-users, banking technology has also become available online in the cloud. Digital banks have begun to offer cloud-based SaaS solutions (software as a service) to simplify the market entry process for digital banks and other fintech companies without the need to implement an IT system on their side (Poluschkin, G., 2020).

Artificial intelligence has also become an integral part of many digital banking solutions. It can manage customer data, such as preferences and interests, demographics, or transaction data. Simply put, customers get what they expect based on their habits and preferences. This technology provides analytics of customer behaviour data and is also used to detect suspicious transitions and prevent fraud. Compared to traditional banking systems, digital banking systems are more flexible to any changes caused by changes in the regulatory framework (Mărăcine, V. et al, 2020).

Another revolutionary tool of modern digital banks is the cryptocurrency wallet. Cryptocurrency is something that has nothing to do with banks. There are very few countries that regulate it, so banks do not offer themselves and avoid cooperating with companies whose business is related to cryptocurrency. All this puts fintech companies and digital banks, as a FinTech product, in a better position.

A new digitalization trend has come to Ukraine, and the first companies to feel it were commercial banks. Currently, four online/digital banks are officially registered in the financial sector of Ukraine. Digital banking is a completely new business model for Ukraine, and currently, it has awe-inspiring results (Aslund, A., 2021).

After the nationalization in 2016 of PrivatBank, the largest commercial bank in Ukraine, all top managers left the bank. Some of them launched their Fintech Band and began to compete with what they worked on for years. The plan was to create something like PrivatBank, but online. A couple of years later, Fintech Bank and the commercial bank Universal Bank created a joint project called Monobank. Today, it is the leading digital bank in Ukraine with more than 3.4 million daily users, and by 2022 the company plans to increase its total value by more than $ 1 billion.

It is important to note that Monobank is not a fully independent bank with its license or infrastructure. Fintech Band created and developed a banking application under a different brand for Universal Bank. The co-founders say they started working with Universal for several reasons: first, they appreciated the concept of a mobile bank, the team found common ground with management, and the bank was ready to provide resources for future lending operations.

One of the project’s essential tasks was to create good software and to identify credit risks. Many machine learning models at Monobank work specifically to identify credit risks, accompanying the entire credit decision-making process. The company’s founders have learned to take risks so well that the Fintech Band now sells risk analysis tools similar to the Monobank Tools as part of a separate Artificial Intelligence Solutions project.

There are currently four mobile banks in Ukraine and several other financial companies trying to compete with traditional banks (Poluschkin, G., 2020). There are already many young people who will never enter the traditional bank building because they have their bank just in smartphones. Ukraine is now on the verge of a global transformation. Not only banks but the whole economy is moving to digital mode. Quarantine proved that the Internet and social networks are the primary means of subsistence and business.

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INSTITUTIONAL DETERMINANTS OF THE INTERNATIONAL TAX COMPETITIVENESS

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The tax system is an important factor that determines the country's attractiveness for international investors and the trust of international partners, characterizes the favorable business environment, etc. Thus, the quality and efficiency of the tax system is the key to increasing the country's competitiveness, financial stability and sustainability of its budget (Boiko & Samusevych, 2017).

Current trends in the study of tax competitiveness indicate the transformation of the traditional model of the formation of the country's tax competitiveness, which is based exclusively on tax mechanisms for the formation and implementation of tax policy and the formation of a new type of model, which is based on the competition of legislative, administrative, tax, financial, social and other components tax policy of the country.

The Tax Foundation annually evaluates the level of international tax competitiveness of the world's leading countries in terms of the main types of taxes. As shown in Table 1, the tax system of Estonia, Latvia and New Zealand is the most competitive. At the same time, as the results show, the analyzed countries have significant differences in the competitiveness of certain types of taxes. So, for example, in terms of the competitiveness of consumption taxes, Latvia ranks 27th, and in terms of Corporate Tax – 2nd. Thus, it can be argued about the diversity of approaches to the administration of certain types of taxes, the presence of shortcomings in the components of tax policy in most of the analyzed countries, and the lack of a clear understanding of the complex toolkit ensuring an effective and competitive tax system. This necessitates the application of a diversified toolkit of state management of the tax system, which would take into account the specifics of calculating and paying each individual tax payment, the level of tax morale and responsibility of payers, the quality of the country's institutional environment, etc.

The basis of determining the drivers of the formation of tax competitiveness is the understanding of its essence. Quite often, the competitiveness of the tax system is understood as its ability to maintain low marginal tax rates (Azacis & Collie, 2021).

Table 1. TOP-10 countries according to the International Tax Competitiveness Index Rankings-2021

Country	Rank	Corporate Tax Rank	Individual Taxes Rank	Consumption Taxes Rank	Property Taxes Rank	Cross-Border Tax Rules Rank
Estonia	1	3	1	9	1	15
Latvia	2	2	5	27	5	9
New Zealand	3	28	6	6	2	22
Switzerland	4	10	15	1	35	2
Luxembourg	5	25	20	4	13	5
Lithuania	6	4	7	24	7	23
Czech Republic	7	8	4	35	6	12
Sweden	8	9	18	16	8	14
Australia	9	29	17	7	4	24
Norway	10	11	13	18	15	11

Source: The Tax Foundation (2022).

Given that businesses direct their investments only to those countries that are able to provide them with the highest rate of return, the level of tax burden on investment income is the criterion taken into account by investors when choosing a country to invest funds. This means that businesses will prioritize countries with a lower tax rate, which maximizes the after-tax rate of return. Thus, too high tax rates will lead to the flow of investments to other more "tax-attractive" countries and, accordingly, to a slowdown in economic growth. In addition, high marginal tax rates can lead to tax evasion (Tiutiunyk & Kobushko, 2018). Thus, within the framework of this approach, the formation of the country's tax competitiveness is possible only through the manipulation of tax rates.

However, in our opinion, supporters of this approach do not take into account the significant influence of the institutional component on the level of the country's international tax competitiveness. The complexity and time-consuming process of calculating and paying taxes, the inconsistency of tax legislation negatively affect the competitiveness of the country's tax system, its perception by business and international partners.

The level of corruption and the shadow economy has a negative impact on the level of the country's international tax competitiveness. Quite often, for international investors and companies, these factors play a more important role than the level of the tax burden. They consider the transparency of the conditions for doing business in the country as a guarantee of its success and profitability.

In this way, the neglect of the institutional component of the formation of international tax competitiveness has a negative effect on the volume of filling the state budget and the effectiveness of the functioning of the tax system in the country.

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