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## Article

# Research of the factor segment content of economic security management in the conditions of geopolitical transformations

*Reference:* Kalinin, Oleksandr/Gonchar, Viktoriya et. al. (2022). Research of the factor segment content of economic security management in the conditions of geopolitical transformations. In: Technology audit and production reserves 6 (4/68), S. 17 - 25.  
<http://journals.uran.ua/tarp/article/download/271798/267810/627782>.  
doi:10.15587/2706-5448.2022.271798.

This Version is available at:  
<http://hdl.handle.net/11159/13177>

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**Oleksandr Kalinin,  
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# RESEARCH OF THE FACTOR SEGMENT CONTENT OF ECONOMIC SECURITY MANAGEMENT IN THE CONDITIONS OF GEOPOLITICAL TRANSFORMATIONS

*The object of research is management system of the country's economic security and the consequences of the influence of the shadow economy on it. Research is carried out on the example of Ukraine, as a country with a fairly high level of shadow processes in business.*

*Shadow incomes and agreements are currently one of the main problems of the management system of income distribution and redistribution. The global scale of the economy and the deregulation of international mergers and acquisitions take shadow capital beyond individual countries, giving them global importance for the economic security of different countries. An analysis of the influence of the shadow economy on all stages of merger and acquisition agreements in Ukraine was carried out. The negative effects of shadowing on attracting foreign and national investments, which reduces the effectiveness of the country's economic security management system, were analyzed. The article presents a comparative analysis of the dynamics of economic development indices of the country and the level of the shadow economy.*

*In the process of the research methods of analysis and synthesis, methods of logical design, tabular and graphical methods of data presentation are used. Correlation-regression analysis was used to study the relationship between the indicators of the shadow economy and the level of economic security of the state.*

*On the basis of statistical indicators, the comparison of indicators of development of shadow economy and separate indicators of economic security of Ukraine is carried out. Correlation-regression analysis was used to study the relationship between the indicators of the illegal economy and the level of economic security of the state in the conditions of geopolitical transformation. The results of the calculations showed that for most indices of economic security and the level of the shadow economy there is a direct relationship. The established dependencies can be the basis for determining the key vectors of the state policy of counteracting the development of the shadow economy and tools for influencing the most sensitive indicators of Ukraine's economic development.*

*The research conducted in this article can be useful for scientists who research economic security management systems, for government institutions with the aim of forming an economic security program. The methodology can be used to determine investment priorities based on the analysis of the impact of the illegal economy on the economic security of society.*

**Keywords:** *shadow economy, geopolitical security, state structures, mergers and acquisitions, macroeconomics, management system, economic reform.*

Received date: 12.11.2022

Accepted date: 30.12.2022

Published date: 31.12.2022

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## How to cite

Kalinin, O., Gonchar, V., Simanaviciene, Z. (2022). Research of the factor segment content of economic security management in the conditions of geopolitical transformations. *Technology Audit and Production Reserves*, 6 (4 (68)), 17–25. doi: <https://doi.org/10.15587/2706-5448.2022.271798>

## 1. Introduction

The effective functioning of any organization is primarily determined by the degree of development of its openness. In today's rapidly transitioning to global economic processes, skills and practical skills, the country's ability to constantly increase investment attractiveness and economic security of its assets is one of the most important factors in ensuring its competitiveness in the market, renewal and growth of services. That is why the topic of the article should be considered relevant.

The division of the economy into legal and illegal sectors has a very negative impact on the development of society, which is reflected in declining productivity, income and living standards, inefficient tax system, slowing of technical and scientific progress and stagnation of other important economic institutions. The shadow economy poses a direct threat to the country's economic security, hinders the development of normal business, restrains the development of private business, reduces competition, slows down production, deprives the federal budget of significant revenues, and exacerbates economic problems.

Mergers & Acquisitions (M&A) transactions over the past few years, taking into account the global crisis, have undergone changes, and not only in the procedural aspect of their execution, but also in the motives of targets and buyers. Now the concentration is happening due to mergers and acquisitions, is the predominant investment tool over the creation of new enterprises. Companies are increasingly using mergers and absorption as a significant source of strengthening their positions in the market, expanding business activities, ensuring sustainable development in conditions of turbulence and uncertainty of the environment of their operation.

The M&A market fell due to the general economic downturn caused by the coronavirus pandemic by 17 percent [1, 2]. The M&A world has survived and recovered from past economic crises in 2000–2002 and the Great Recession of 2007–2009. As in past financial and economic crises, uncertainty in business and capital markets has already caused buyers to delay or scale back their acquisition plans. Geopolitical transformation affects not only the financial system as a whole, but also many other factors that affect M&A deals. These include due diligence issues arising, availability, pricing, and the time it will take to obtain the necessary regulatory and other third-party approvals for the transactions. Investors were primarily interested in agriculture, real estate, transport, infrastructure, innovation and new technologies. These areas influence most of the value of all transactions. The dynamics of development of various industries is different: it is possible to see growth in the IT market, and a decrease in the field of heavy industry or mining. All this could not but affect the technique of conducting M&A transactions, the preparation for them, the development of legislation applied in this area. There is great shift in popularity of IT assets with high valuation and fierce competition of investors for them driven by macroeconomic factors such as low interest rates, the desire to acquire innovative, digital or technology companies that are integrated into international markets due to favourable local factors and surplus capital from corporate buyers and private equity funds.

Proper conditions and institutional environment cannot be created for the development of M&A market in Ukraine until they are overcome systemic factors that constrain the processes of de-shadowing of the economy in Ukraine. The main ones are:

- low level of property rights protection;
- insufficient level of protection of intellectual property;
- low level of liquidity of the stock market, protection of investor's rights;
- imperfection of the court's judicial system;
- high level of corruption in the country;
- presence of territories uncontrolled by the government.

The consequence of the above is an increase in the number of regional and international deals while reducing hostile takeovers. Thus, in European countries, the number of transactions increased by 22 % [1, 3]. Besides, definitely an important indicator is the decrease in the average cost of transactions, which allows to talk about an increase in the investment activity of medium-sized businesses. Nevertheless, for Ukraine, the problem is extremely urgent legislative «gaps» in terms of regulating the processes of economic integration, the consequence of which is the possibility of using shortcomings current legislation, and, consequently, the system of state control to obtain ownership of economic assets unscrupulous owners [4].

Central European market for deals in mergers and acquisitions is very unique because many countries influenced the policy of planning and centralized economy but now are part of common market of EU and other countries like Ukraine still have its phantom pains of hyperregulation of economic processes during the Soviet times.

There are a lot of scientists, who provided their research in the sphere on mergers and acquisitions, shadow economy etc. in Europe. This is one of the most prominent markets for investors in the world. But it is hard to provide a general research of Europe's market because of its complexity.

It was described the characteristics of takeover transactions such as method of payment, listing status of the target company, geographic scope (cross-border vs. domestic), industry relatedness of the bidding and the target company, amongst other factors [5]. It is proven that cross-border and domestic acquisitions provide the greatest income. Firms registered in the UK receive more equity than cash offers [6].

It was examined correlation of the size and the composition of acquirer boards with shareholder abnormal returns for 2,230 M&As made by listed firms in Continental Europe [7]. In study [8] authors prove the positive impact of the presence of various forms of corporate governance on M&A value creation. The presence of hired directors had a significant positive effect on the acquirer's corporate social responsibility (CSR). At the same time, directors who have interest in the authorized capital more often prevent a failed takeover.

It was described the factors that influence the increase in M&A activity in Europe [9]. Among the main ones are the relationship to the agreement and the presence of competing bids [10]. The peculiarity of mergers and acquisitions in Europe arises mainly due to the changing structural characteristics of the business environment in Europe.

It was found that arbitrage investments in cross-border mergers are more profitable [11, 12]. To reduce the level of risk, it is recommended to account for transaction costs.

It was the aim of the study was whether, because of the specific objectives and risks faced by governments, SOEs deviate from the benchmark of deals involving private firms on both sides of the merger and acquisition (M&A) transaction [13, 14]. They show that larger assets and high solvency ratios of state-owned enterprises make each deal involving them special.

It was estimated that corporate growth often takes a form of M&A. It is quite well known that mergers and acquisitions come in waves – so far, six waves have been researched [15, 16]. The fifth and sixth were observed not only in developed, but also in emerging countries [17]. Central and Eastern Europe's share of the global M&A market is negligible; however, during the recent years, emerging European countries have been very eager to take part in M&A projects.

It was investigated how family ownership influences the industry-diversifying nature of M&As by listed companies in Continental Europe and the corresponding shareholder value effects at deal announcement [18, 19]. The study finds that family firms are less willing to acquire unrelated target companies compared to equity firms [20]. Although the growth of the family share leads to the willingness to implement an M&A strategy to diversify the industry. At the same time, the shareholder value does not decrease.

It was empirically investigated the industry determinants of value creation through M&A and the division of M&A gains for a sample of horizontal acquisitions in Europe during the period 1997–2008 [21]. They calculated the cumulative

abnormal return to the deal announcement to create the value of M&A [22]. Industry sales concentration and consists of the combined size of the target and participants trading only minimally efficient scale in the respective industry are shown to be significantly negatively related to M&A value creation [23]. The scale of profit has little to do with industry competition and technological innovation. The distribution of revenues from M&A is influenced by weather and company characteristics.

However, in all those articles are still insufficiently developed and require further research issues of accounting for reorganization operations, shadow deals, including merger-related transactions and the distribution of capital, assets and liabilities, geopolitical factors and its influence on economic security of the state. Unlike the works presented above, this study is focused on the Ukrainian market. An analysis of economic security factors in the presence of a shadow economy made it possible to identify the causes and interrelationships between factors in the development of shadow transactions in the post-Soviet space.

Thus, *the aim of this paper* is to study the level of the shadow economy, the objective basis of its emergence and impact on the geopolitical situation in the country, the mechanisms of socio-economic factors on its dynamics. The paper is also aimed at substantiation of ideas for improving organizational, functional and social aspects of shadow economy, and achieving the optimal level of economic security of the state.

## 2. Materials and Methods

When analyzing the actual and calculated indicators of the effectiveness of mergers and acquisitions, methods of mathematical statistics are usually used (correlation equations, analysis of variance, probability theory, laws of large numbers, the method of full factor analysis, the method of least squares, mathematical processing of time series, etc.). The mathematical methods and software were used in a qualitative analysis of the main criteria and performance indicators, in identifying interdependent relationships and dependencies.

The study of trends in the development of the dynamics of the cost of companies, cost items and factors that have a decisive influence on the level and dynamics M&A deals, indicates that their modelling can be performed using, first of all, such time functions (trends), which are solved by the least squares method (linear), as well as using methods of exponential smoothing, harmonic weights, etc.

In the theory and practice of management accounting, there are a number of methods to solve this problem. In particular, these are correlation methods, least squares and the method of high and low points, which in practice turns out to be the simplest.

Least square method was mainly used. According to this method, the direct cost is constructed in such a way that the sum of the squared deviations of the distances from all points to the theoretical regression line would be minimal. To establish the relationship between costs and volume and determine the amount of costs, methods of mathematical statistics are used, in particular the method of least squares (OLS).

Let's review the usage of the monetary method that is implemented to define the size of the volume of the shadow agreements. Let's define that early statements were made on the assumption that there was a time in which no shadow deals were provided. Let's analyze the actions that followed in the empirical applications of the method. The aggregation

framework shows how the use of econometrics allowed estimations to get rid of the need to know the «initial condition» and makes clear why equality of velocities of circulation for the registered and hidden sectors is a common assumption.

Besides the method of least squares description and systematization (for disclosure methodological principles of mergers and acquisitions, identification of common characteristics of the processes of mergers and acquisitions of companies, identification and evaluation of methods of protection against acquisitions); comparisons, analogies and generalization (for the analysis of normative-legal maintenance of domestic legislation and research of the world experience of using the merger strategy and absorption); analysis and synthesis (for analysis and evaluation of process efficiency mergers and acquisitions); logical analysis (for analysis competitiveness of the enterprise); induction and deduction (to determine areas for improving the strategy of mergers and acquisitions).

## 3. Results and Discussion

Based on the results of the assessment of the external environment of the enterprise it is possible to draw a conclusion about its current and future condition (favourable strategic climate, neutral or unfavorable), as well as to determine the expected trends of its change in the future (improvement of the external environment). The export orientation of the industry makes foreign economic policy a key factor influencing both the economy as a whole and the activities of enterprises that are actively engaged in M&A activity. It is one of the main levers through which the state can adjust the influence of global factors, adapt national trends to world trends.

The company does not have the ability to directly influence national and global factors. However, as practice shows, the largest industrial associations in Ukraine are quite successful in coping with the possibility of lobbying interests within the country. On the world stage, the problem of representing the interests of domestic producers for the state is becoming most relevant. For industries whose exports account for a significant share of the sales structure, government support on the world stage will have a strong impact. Even in a difficult economic situation on the world stage, good foreign economic relations with partner countries can reduce the crisis effects for the industry within the country. However, at the present stage of development in Ukrainian foreign economic policy there is no vector that stimulates the development of this sector of the economy.

The World Bank's Ease of Doing Business Index (EDBI) initially proposes services of measurements of quality characteristics for a country's performance in creating circumstances a business environment. It quantifies the real environment in which a business can provide its operating business within a country by developing a measure of the regulatory restrictions that it may face across different areas of necessary business activity, from «starting a business» to «paying taxes» and «trading across borders».

According to the definition of the World Bank itself, it is a series of annual studies that examine regulations that promote or, conversely, restrict business activity. It provides quantitative indicators covering 12 areas of the business environment in 190 economies. The purpose of the Doing Business research series is to provide objective data for use by governments in developing sound business regulation policies and to encourage research into important aspects of the regulatory environment

for firms [23]. That is, the rating of ease of doing business evaluates the «rules of the game» – laws and other regulations, rather than the practice of their application [1].

It is also important that the practice of law enforcement is one of the problems of the Ukrainian business climate – in part there are good laws that are not enforced or applied improperly. And the World Bank’s rating is about laws.

It was provided analyses with of the correlation Doing Business rank and attracting foreign investors to the Ukrainian companies in Fig. 1.

Summing up, let’s note once again that Ukraine’s 64<sup>th</sup> place, which is the highest in its history, is a positive signal that the country is moving (and, importantly, moving in the right direction). Compared to 2014, when Ukraine was in 112<sup>th</sup> position [23], Ukraine rose by 48 positions. Wit is possible to say that now the conditions for doing business are better than in 2014.

Wit is possible to say that low investments connected with high general military risk, unstable political processes and unreformed law system in the aspect of corporate law and protection of investors. Such a statement was obtained on the basis of the original previous studies, as well as non-political studies of KPMG.

According to our research there Ukrainian Parliament (Verkhovna Rada) made certain actions that will be beneficial for the potential investors and are aimed to make the positions of Ukraine. They are:

Firstly, on September 20, 2019, the Verkhovna Rada adopted the draft law No. 1059 «On Amendments to Certain Legislative Acts on Stimulating Investment Activity in Ukraine» [24].

It allows improving the actions for the entrepreneurs and companies as: gaining loans, obtaining building permits, enforcing contracts, property registration, protection of minority investors, business registration insolvency issues.

In total, this will give at least 15 positions up the entire ranking.

Secondly, on October 4, 2019, the Verkhovna Rada approved laws introducing a single account for the payment of taxes and fees and a single contribution to the obligatory state social insurance from January 1, 2021.

In total, this will give at least nine positions in the «Taxation» indicator.

Third, on October 2, 2019, the Verkhovna Rada adopted the draft law No. 1048 «On Amendments to the Customs Code on Certain Issues of Functioning of Authorized Economic Operators» [25].

The document provides simplification of customs formalities for enterprises with a high degree of confidence.

In total, this will give at least 25 positions in the indicator «International Trade».

Fourth, on October 3, 2019, the parliament approved the draft law No. 1052 «On Amendments to the Law» On Building Regulations «to improve the rationing in construction» [26].

In total, this will give at least one position in the indicator «Obtaining building permits».

Fifth, on October 3, 2019, a draft law on the protection of property rights was adopted. It provides for the elimination of major legal gaps that create problems for property owners and businesses.

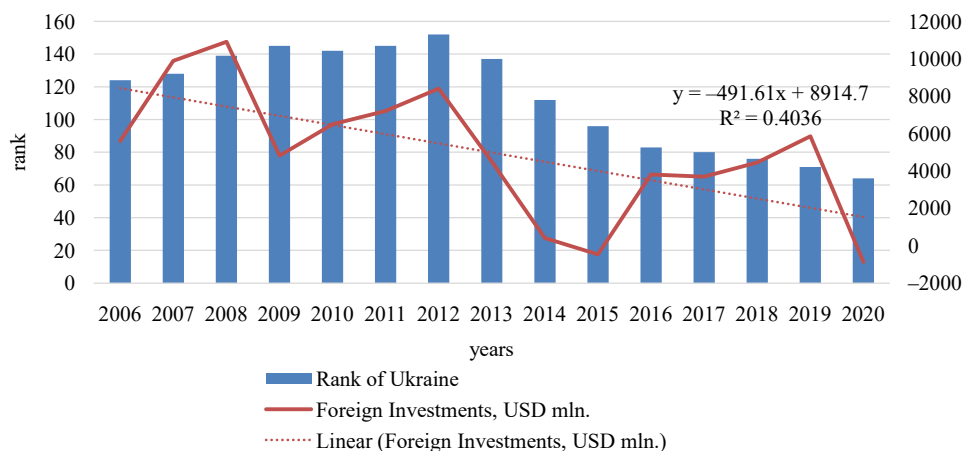
The law provides for the termination of accredited entities, the introduction of mandatory notarization of agreements on the alienation of corporate rights, the introduction of the principle of simultaneous notarial acts and state registration of rights, increasing liability for violation of registration procedures.

It is expected that the adoption of the law will reduce the number of raids on real estate and corporate rights, will reduce the costs of citizens and businesses to protect property from unlawful encroachments.

In total, this will give one position in the «Property Registration» indicator and one position in the «Business Registration» indicator.

In the Table 1 there are recommendations of increasing the rank of Ukraine and will help to improve image of the country as an attractive for foreign investments.

One of the main causes of market stagnation mergers and acquisitions – uncertainty of companies in the future, in the possibility of fast exit from the recession. All last year, companies tried to improve their own liquidity. The situation prompted top management many companies focus on issues improving operational efficiency by releasing related tasks with business development. The global M&A market showed double-digit growth in 2021 (+47 % in value and +31 % in volume compared to 2020). The year for the M&A market in the world was a new record – 48,948 transactions in the amount of 4,418 billion US dollars, which surpassed the previous records in 2007 (3,833 billion US dollars) in value and in 2017 in terms of volume (37,437 transactions). Less than in pre-crisis times, availability of credit resources in the background declining profits of many companies have made the acquisition of other businesses more difficult – even despite the fact that the market value of the potential objects of acquisition has decreased significantly [27–29].



**Fig. 1.** Correlations of Ukrainians place in Doing Business and foreign investments: y-axis is the level of investment income

**Table 1**

Recommended actions for the benefit of Ukraine to attract new investments

No.	Indicator	Actions
1	Registration of enterprises	Introduce online registration of limited liability companies only with simplified personal authorization (use of ID-passport, Bank ID)
		Introduce registration of a business entity as a value added tax payer during the day
		Cancel the previous submission of a notice of employment of employees
2	Connection to power grids	Establish a free connection to the grid
		Make public access to available capacity
		Provide an opportunity to apply for online connection
3	Property registration	Generate and enter documents for ownership of land and real estate in the electronic register
		Combine real estate and land ownership registers into one
		Introduce an administrative appeal against the actions and decisions of state registrars regarding the registration of real estate and land plots. The body that will consider such complaints should be separated from the Ministry of Justice and the State Land Cadaster
		Provide an opportunity for citizens and businesses to draw up contracts for the sale of real estate in the centers of administrative services
4	Getting loans	Open public access to the register of encumbrances on movable property with the ability to view the history of changes and provide credit bureaus with information from retailers and utilities
5	Taxation	Reduce tax rates on the salary fund
		Replace income tax with withheld capital tax
6	Ensuring the implementation of contracts	Introduce filing of claims, explanations and petitions through a special electronic platform
		Adopt a law on mediation
		Introduce a financial incentive to turn to mediation services
7	Solving insolvency (bankruptcy)	Give creditors the opportunity to finance the debtor to restore its solvency
8	Obtaining building permits	Provide technical conditions and restrictions in a «single window», for example, in the center of administrative services
9	International trade	Reduce time for imports and exports

Experts point to other causes of merger and acquisition failures [6, 30–32]:

- incorrect assessment by the absorbing company of the attractiveness of the market or competitive position of the company being acquired;
- underestimation of the amount of investment required to carry out a merger or acquisition of the company;
- errors made in the implementation of the merger agreement.

To the mistakes made in the process of implementation of the agreement, among other things, includes non-conducting or unprofessional legal audit (due diligence) of the object mergers and acquisitions.

To limit the negative effects of M&A processes and to prevent excessive concentration, anti-competitive behavior and price increases, state control is needed.

Therefore, the main areas of merger control and acquisitions are:

- 1) anti-stress regulation;
- 2) taxation (from the amount of tax payments depend on the direct value of the transaction mergers and acquisitions);
- 3) regulation of securities transactions;
- 4) geopolitical competition in technology and data.

When mergers are driven by technology and the globalization of the economy, not the desires of companies dominate markets and raise prices, then possible positive consequences; otherwise the positive effects may be short-term and mostly at the level of the enterprises themselves.

The positive effect of M&A is also the intensification of international cooperation [33]. At the international level, the emergence of large companies is leading to the growth of competition and redistribution of influence among the largest companies. Until most commodity and service markets are monopolized, competition will remain important factor-guarantor of the need and effectiveness of M&A operations.

However, to achieve the effect by merging whether absorption is not always possible. Empirical studies conducted since the mid-60's. [26, 34, 35] convince that a significant part of the merger agreements and the acquisition does not create additional value for shareholders of companies that buy the company, and in some cases completely destroys it.

The reason for the negative mergers and acquisitions is the lack of proper integration of companies united [36]. At the same time in local markets M&A leads to the formation of oligopolistic structures and restrictions of competition that can threaten the stability of the national economy and negatively affect consumers.

Thus, M&A processes are multifaceted phenomena, as well as one of the most popular areas of corporate business development. Companies looking to expand their business due to acquisitions or mergers, will face many difficult moments, but in general.

Hypothesis: Ukrainian level of attracting depends on the level of using Ukrainian or Russian language in the companies as a medium of communication.

Sometimes Ukraine is associated with the language question as one of the main reasons of its political and economic problems. It can create the feeling that it can also influence greatly the situation with M&A activity. On the one hand it is possible to say that many big industrial assets are situated in Russian speaking regions such as Dnipro, Kharkiv, Mariupol, Odesa etc. But again, companies are making all their reports and official communication in Ukrainian. Again, in international deals the most important cultural factor is knowledge of English.

Thus, Hypothesis was not confirmed.

Complicating the conditions of economic activity, due to the introduction of anti-epidemic measures in Ukraine and the world, have caused a natural desire of economic entities to reduce the risks of loss of limited resources (on against the background of a significant increase in losses in the economy due to temporary but unpredictable in time, restriction of business activity), which led to the growth of the shadow economy. This indicates an extraordinary manifestation of coronary crisis. Pandemic and introduction of unprecedented quarantine restrictions caused a partial change in motivation in the behavior of economic entities (in the areas of both production and consumption). It is likely that this, in turn, first, found an imprint in

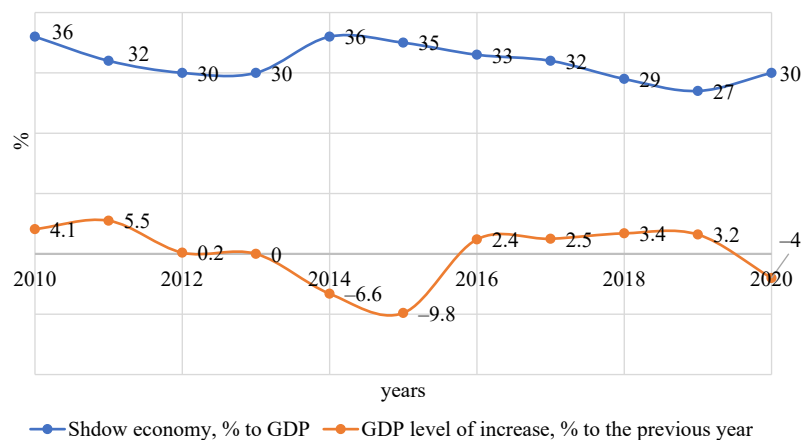
intensity of processes such as shadowing of incomes, i. e. suppressed overall activity with non-economic reasons limited not only the activities of entities in the legal sector of the economy, but also the possibility of expanding the shadow operations. Secondly, it led to the emergence of new ones shading channels with a narrowing of the possibility of using traditional, which is not fully reflected in existing methods assessment of the shadow economy.

But in general, it is worth noting that the M&A market is becoming everything more civilized – more deals are made without crime and forceful intervention, to mutual satisfaction of the parties [37]. The study identified a number of issues related to the implementation of mergers and acquisitions, but the process of economic globalization is gaining momentum forces, and none of the companies want to stay beyond this process, so businessmen, shareholders and CEOs are forced to pool capital to make it more efficient.

The level of the shadow economy (Fig. 2), calculated from using the monetary method, increased compared to 2019 by 1 percentage point and amounted to 31 % of official GDP. By this method took into account that the trend before the increase of the shadow economy was formed against the background of the action in 2020 of diversified influencing factors:

- reduction of financing for business and the population against the background of reduction of the NBU discount rate (from 12.06.2020 to 6 % per annum);
- introduction by banks of «credit vacations» for bona fide borrowers (provided there is no negative impact on the bank's capital) during a period of severe restrictions;
- support of the NBU to the Government's programs, in particular «Available loans 5–9 %»;
- further reduction of lending to the economy in conditions of uncertainty in annual terms (compared to the corresponding month of 2019 year) the total volume of lending decreased by 2.3 % or 22.8 billion hryvnias [28, 38];
- maintaining the dominant influence of panic among foreign exchange market participants on the dynamics of the exchange rate, which in conditions of uncertainty due to the exacerbation of the pandemic led to the devaluation of the hryvnia. During 2020, despite the predominance of the supply of foreign currency over the demand for it by bank customers, the hryvnia had mainly devaluation dynamics. Since the beginning of the year, the average monthly exchange rate of the hryvnia against the US dollar has weakened by 19.3 %, as a result of the development of the situation associated with the coronavirus infection COVID-19. In March, under the imposed quarantine, the hryvnia depreciated against the US dollar by 7.4 %, in July, when business activity resumed more intensively against the background of adaptation to the new conditions, which required faster expansion of trading on the interbank market, the hryvnia depreciated by 2.3 % in accordance). At the end of the year (November-December), the devaluation dynamics changed to revaluation, including due to a certain awakening of business activity in the conditions of another tightening of quarantine restrictions (introduction of «weekend» quarantine) [1, 3, 28].

All industries (except for FEA «Financial and insurance activity») showed a tendency to increasing the level of the shadow economy in the background growth of losses of the enterprises of these industries by the end of 2020 in the conditions of forced restriction of their production activity. The largest share of the shadow sector increased in industry «Real estate activities» (17 pp to 41 % of the amount of USD in foreign trade), in foreign trade «Transport, warehousing, postal and courier activities» (by 14 percentage points to 48 %), in the mining industry and quarrying (by 9 v.p. up to 41 % respectively).



**Fig. 2.** Indexes of the shadow economy and GDP of Ukraine (built by the authors on the basis [23, 28])

In industry «Financial and insurance activities» there is a tendency to reduce the level of the shadow economy (by 4 percentage points to 23 % of volume of GVA in foreign trade) against the background of maintaining financial stability in the economy and a fairly high demand for banking services (in the conditions of expansion by the Government of the state program «Available loans 5–9 %» with in order to compensate SMEs for losses in the period forced downtime and giving them access to cheaper resources) and, as a consequence, an increase of 2.6 times compared to 2019 (to 6.67 billion USD in 2020) profits received by the subjects of this FEA. At the same time, the sources of profit of the banking sector in 2020 were mainly growth of net interest and commissions income [24, 35]. The structure and trends of the shadow economy of Ukraine by sector for 2019–2020 are presented in Table 2.

**Table 2**

Shadow economy level by industry

Industry	2019	2020	Tendency
Agriculture	16	18	Negative
Banking and insurance	27	23	Positive
Consumer markets	19	28	Negative
Industrial products	26	31	Negative
Metals and mining	32	41	Negative
Real estate	24	41	Negative
Transport and infrastructure	34	48	Negative
Construction	20	27	Negative

The growth of the shadow economy in 2020 is primarily a consequence of complex, extraordinary condi-

tions under which economic agents operated during the coronary crisis. However, relatively small growth shadows are the result of unusual manifestations coronary crisis and partial change in patterns of human behavior, which:

- changed the shadowing channels, which, at present, are not covered by some existing calculation methods;
  - limited opportunities for shadowing, blocked traditional channels due to the current lack of new ones [27].
- These processes indicate constant change manifestations of shadowing and, consequently, the need for continuous improvement of both calculation methods and methods of detecting and combating this phenomenon. At the same time, the processes of shadowing the economy are significant to some extent also caused by insufficiently favorable environment. Positive expectations from reforms, their implementation stimulates the population and businesses to expand in the legal sector subject to improvement investment and business climate in the country.

There are more and more innovative financial instruments that can facilitate Ukrainian struggle with shadow economy and bring benefits to M&A market: Special Purpose Acquisition Company (SPAC) as among them.

SPAC can become a new form of funding M&A projects in Ukraine.

There are several reasons for the decrease in mergers of companies in the Ukrainian market.

Speed. Preparing for an Initial public offering IPO can take several years, while in the case of SPAC, it usually takes 3–4 months to go public [32]. All preparation is much faster.

Financial component. First, an IPO costs money: it is necessary to pay investment bankers, make a promotional campaign so that they want to buy shares, pay interest, commissions, bonuses, etc. Secondly, in a traditional IPO, the company does not determine the price per share – this is done by investment companies that form an application. It is possible that they can be cheap. With SPAC, all of this can be avoided.

Companies can still raise funds and invest in development.

In short, SPAC is a tool that can help a private company to become a publicly traded company quickly and at less cost, avoiding the IPO procedure itself.

Beside financial aspect there are several marketing items it is always possible to take into consideration.

Future direction to consider for further research would be to include in the analysis transaction costs, in order to make results more robust. Another exciting debate that could make the point for future research is the distinction between deals between emerging and developed markets. This is particularly interesting since the volume of cross-border transactions has increased in recent years. Further research is required for the processes of conducting a qualitative assessment of the digitalization of investment processes and determining the lowest costs for conducting transactions online and raising capital in the markets using digital technologies.

The main limitation of the study is the problem of a correct analysis of the legal framework in different countries to combat the shadow economy. Firstly, from the point of view of its influence on the formation of grounds for the development of the shadow economy. Secondly, the possibility of adapting effective economic reforms that would lead to a reduction in the shadow economy in different countries. Thirdly, this is the nature of the shadow economy itself, to what extent it has a corruption component of legal business and tax avoidance, or to what extent it is

oriented towards the illegal activities of organized crime with the need to launder dirty money. In conclusion, it is necessary to note the limitation on the possibility of analyzing the origin of capital from the world of cryptocurrencies and to what extent these financial flows are associated with shadow transactions.

#### 4. Conclusions

Thus, the methodological support developed by the authors allows to solve a number of problems related to:

- objectification of the processes of assessing the impact of M&A agreements on the economic security of the country and its components;
- taking into account the opinions and assessments of coalitions of experts of the National Security and Defense Council, the AMCU and independent experts on the impact of M&A agreements on security components (energy, financial, investment, production, foreign economic, scientific and technological, social, demographic, food, etc.) and economic security in general;
- preparation of an information base for decision-making on concluding M&A agreements by the relevant state bodies;
- determining the level of decision-making depending on the results of the process of assessing the impact of M&A agreements on the economic security of the state.

The impact of potential policy risks on key business elements such as revenue, supply chain, data and intellectual property needs to be modeled, regularly analyze geopolitical competition in technology and data. Further research may be directed at:

- a) expansion of the list of parameters of economic security or their detailing;
- b) development of tools for determining the integrated indicator of the impact of mergers and acquisitions on the economic security of the state, which would take into account the complex nonlinear relationships between it and the components of economic security with minimization of compensatory effects;
- c) inclusion in the consideration on the basis of multi-criteria analysis in addition to energy security of components with less weight (industrial and financial security) and the application of criteria for them in determining the level of decision-making;
- d) the formation of a more flexible decision-making system, which would take into account the intermediate values of the integrated indicator of the impact of mergers and acquisitions with varying degrees of satisfaction of the criteria;
- e) taking into account in the integrated assessment of the impact of M&A agreements on economic security possible synergies (both positive and negative), as the potential for synergies may be a factor that can mitigate (or even eliminate) the effects of concentration on competition through M&A agreements.

Economic security processes require more and more economic costs through the need to take into account political risks in the context of globalization and business integration. It is of scientific interest to increase the dependence of micro and macro factors on each other and their overall effect on financial stability as an element of corporate and national economic security. The study of shadow economy development factors in different



countries provides opportunities for further theoretical analysis of emerging markets to develop forecasts for economic reforms. This will make it possible to conduct a more targeted policy of integrating economic processes into international business processes, taking into account their further qualitative diagnostics of strengthening the processes of ensuring economic security.

### Conflict of interest

The authors declare that they have no conflict of interest in relation to this research, whether financial, personal, authorship or otherwise, that could affect the research and its results presented in this paper.

### Financing

The study was performed without financial support. Presentation of research in the form of publication through financial support in the form of a grant from SUES (Support to Ukrainian Editorial Staff).

### Data availability

The manuscript has no associated data.

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