

Public Management of the Detinization of Economic Relations in the Conditions of Globalization

^{1*}Halyna Kaplenko ; ²Oksana Pikulyk ;
³Nataliya Podvirna ; ⁴Oleksandra Kazarian ;
⁵Olena Semchenko-Kovalchuk ; ⁶Pavlo Halimon 

^{1, 2, 3}Ivan Franko National University of Lviv, Lviv, Ukraine;

⁴Interregional Academy of Personnel Management, Kyiv, Ukraine;

⁵Higher Educational Institution “Academician Yuriy Bugay International Scientific and
Technical University”, Kyiv, Ukraine;

⁶National Academy of Agrarian Sciences of Ukraine, Kyiv, Ukraine;

*Corresponding author: haliakapl@gmail.com

Abstract

Tinization of the economy is one of the key problems of economic development. In the conditions of intensive methods of economic development, the problems of shadowing are a priority. To ensure effective state management of economic systems, it is expedient to determine factors influencing the processes of detinization of the economy, which will allow ensuring qualitative transformations of the system. The article analyzes the set of influencing factors based on the analysis of literary sources and statistical data of international organizations. The analysis made it possible to determine research priorities, including entrepreneurial and investment activity, development of an effective regulatory and legal system, implementation of innovations aimed at the qualitative transformation of economic systems, and increasing their profitability and liquidity. The article mathematically substantiates and confirms the hypothesis regarding the influence of a set of factors on the processes of detinization of the economy. Since economic systems are developing in the conditions of the digital space, numerous of recommendations have been developed aimed at building transparent and effective regulatory systems of state management of the economy, aimed at forming prerequisites for the detinization of the economy. The impact of the process of detinization on ensuring economic development is proven. Therefore, the practical implementation of the research results is aimed at forming stable prerequisites for ensuring the development of economic systems at the global and national levels.

Keywords: detinization, economic relations, digitalization, globalization, management of deregulation processes, automation of regulation processes

Introduction

The retrospective of the development of society determined the development trends of the shadow areas of the economy. With the transition from pre-industrial society to the process of industrialization, social relations began to form with elements of shadow processes. The development of shadow business activity became characteristic of capitalist production, which was accompanied by the support of corruption schemes and the imperfection of state institutions. The development of processes of deregulation of the economy, growth of competition, transparency, and openness of markets, primarily for public supervision and control, determined the conditions for the reduction of shadow business activity. In the second half of the 20th century, a new stage of development of the shadow economy was observed due to transformational social changes and the restoration and formation of a new architecture of business relations. The global transformation of the world economy determined the conditions for the transition to the shadow economy or its detinization. Countries that chose a democratic movement and an open market with open competition followed the path of detinization of business, which is rational in conditions of openness and transparency. Socialist countries, due to the imperfection of the system of administrative management and the directive market, followed the path of increasing shadowing of the economy, especially in conditions of depletion of resources for extensive economic development. An interesting statement by M. Olson, which explains the development of the shadow economy in the conditions of an administrative-command economic system: "If there is no private property, then all citizens are materially interested in stealing the economy, but no one is personally interested in its preservation" [Mancur Olson (1996)]. In the conditions of the development of information technologies, the question of detinization of the economy has acquired new meanings. Ensuring the transparency and accountability of economic processes automatically allows avoiding the human factor and ensuring the most effective control and motivating business to get out of the "shadows". Therefore, considering the relevance of the issue of the development of information technologies within the framework of a new social format, the research will analyze the possibilities of the digital sphere to ensure the effectiveness of the processes of regulating the economy at the global level.

The purpose of the article

Therefore, considering the relevance of the processes of anti-crisis management and the problems of finding effective mechanisms for overcoming the consequences of full-scale military aggression both at the national level and in the global

understanding, the article sets a goal: to develop recommendations for ensuring the detinization of the economy as an element of the development of the economic system at a qualitatively new level.

To achieve the goal of the study, the following tasks were performed:

- an analysis of research works was carried out, which made it possible to identify the ways of detinization of the economy, to systematize them and to identify rational hypotheses from the analyzed population that can be applied for further research,
- trends in the development of economic systems are determined trends in the detinization of the economy and their cause-and-effect relationships based on the analysis of the national experience of Ukraine,
- proposals for automating the processes of managing economic systems aimed at the detinization of the economy were developed,
- based on the developed proposals, a model for managing the detinization of the economy with a mathematical justification of the elements of the model and its effectiveness is proposed,
- an algorithm for implementing the detinization management model of the economy was developed.

Literature review

Analysis of the share of the shadow economy in the structure of the economic system made it possible to determine its influence on the formation of the results of economic systems. In developed countries with a high level of GDP per capita, the indicator of economic shadowing is 5-15% of GDP. At a time when the share of the shadow economy can reach 45% in the poorest countries of the world, such indicators are typical for, for example, Nigeria, Bolivia, and the Republic of Chad. According to statistical data of 2021, more than 30% of Ukraine's GDP is in the shadows. The processes of detinization of the economy are the basis of the development of the national economic system. The reaction of the economy to critical factors is negative, which is associated with an increase in the volume of economic activity that goes into the "shadow". Therefore, analyzing the possibilities of detinization of the economy of Ukraine, it is appropriate to determine that these processes are aimed at ensuring the effectiveness of the economic system and overcoming the consequences of external influences [Official web-site Ministry of Economy of Ukraine].

It is advisable to conduct an analysis of the set of factors influencing the processes of shadowing the economy and detinization models by accumulating the results of scientific research and analysis of scientific periodicals. The leading role in the processes of detinization of the economy belongs to the state. The system of public management should be transparent, efficient, and aimed at ensuring economic development, then the effectiveness of management mechanisms will involve the processes of detinization. By analyzing the budget deficit of 32 Asian countries in 2000-2020, it was determined that the budget deficit moderates the impact of public spending on the shadow economy. The interrelationships of factors and their influence on the processes of detinization of the economy in the long and short term were analyzed. The analysis also examines the correlation between budget expenditures and the level of the fiscal deficit. Empirical findings of the study allow to determine the correlation of the influence of indicators of increase in public spending and the budget deficit on the increase in the size of the shadow economy. For practical use, the scientific study proposes to introduce measures to increase liquidity and profitability at the level of macroeconomic indicators, as well as elements of avoiding budget deficits and rationalizing public spending by using intensive methods of economic development [Tran, T.P.-K., Tran, N.P., Nguyen, P.V. and Vo, D.H. (2022)].

The analysis of the interrelationships of macroeconomic indicators and their influence on the processes of detinization is the basis of the development of adequate models of economic management based on transparency and efficiency. Several researchers proposed to determine a set of macroeconomic indicators of influence by analyzing the results of economic activity of 141 countries of the world in the period 2004-2015. To confirm the hypotheses of the study, an improved panel technique was used, that is, the method of the generalized method of moments, which made it possible to confirm the results of the study and substantiate them mathematically. Parameters that quantitatively describe entrepreneurial and investment activity, the profitability of economic systems, liquidity provision coefficients, and coefficients characterizing the level of innovative development were selected among the main sample of macroeconomic indicators: introduction of new technologies, automation processes, application of information systems and technologies. The adequacy of the developed model was confirmed, which determined the macroeconomic foundations and institutional recommendations to ensure a qualitatively new level and transformation of the economic system in the direction of detinization of the economy [Khan, S. and Rehman, M.Z. (2022)].

Separately, it is expedient to determine the role of the system of regulatory and legal support in the processes of detinization of the economy. The transparency of regulatory support allows building effective practical mechanisms for managing

economic processes. In particular, the direction of development of regulatory support for processes of deregulation of permit policy, monitoring and control systems is interesting. Deregulation does not indicate the absence or weakening of control. Deregulation causes qualitative transformations of regulatory policy, and helps to reduce the bureaucratic and corruption component. The basis of modern deregulation processes is the process of involving the public in the system of regulatory mechanisms, specialized associations and public organizations, the activities of which are based on the need to build and preserve reputation, which is the basis of the development of companies in democratic competitive economic systems. The second important factor in the detinization of the economy is the legislative provision of mechanisms for managing economic systems. Modern trends are digitalization of management processes, including economic systems. The processes of regulating business activity in the context of information development determine the priority of legislative provision of digitalization platforms and mechanisms, such as the "Diya" platform, which allows, for example, to receive electronic documents, permits, open or close a new business, submit declarations, etc. [Pylypenko A.A., Savytska N.L., Vaksman R.V., Uhodnikova O.I., Schevchenko V.S. (2021)].

A few authors have investigated the non-linear relationships between the shadow economy and income inequality. The developed parametric model based on non-parametric/semi-parametric regression and fixing the dynamic non-linear relationship between these variables was compared based on the analysis of the economies of developed and developing countries. As a result of the study, an inverse relationship between income inequality and the degree of development of shadow activity was determined (for developing countries, income inequality and the shadow economy show a relationship in the form of a hyperbola, and for developed countries a parabolic relationship is characteristic). The research made it possible to identify the following groups of parameters for further analysis: entrepreneurial activity, investment attractiveness, liquidity, and profitability [Yap, W.W., Sarmidi, T., Shaari, A.H. and Said, F.F. (2018)].

It was decided to analyze the experience of poor African countries to confirm the hypotheses of the factors of dependence of macroeconomic indicators and shadowing of the economy. The study uses the method of assessing panel macroeconomic indicators of African countries in 2005-2015. Based on the results of the analysis of statistical reports, development indicators of the World Bank and the International Monetary Fund are taken. As a result of the analysis, it was determined that financial accessibility reduces the size of the shadow economy, that a country with a lower level of corruption and a higher level of growth can benefit more from reducing the size of the shadow economy thanks to financial inclusion. That is, the analysis of the research made it possible to determine that indicators for

analyzing the impact on the shadowing of the economy can be used as indicators of the openness and transparency of the economy, its profitability and entrepreneurial activity, which determines the degree of creation of opportunities for development [Ajide, F.M. (2021)].

Several authors in their studies confirm the hypothesis regarding the factors influencing the processes of detinization of the economy, in particular, the factors of entrepreneurship development and corruption are considered, which determine the level of productivity/unproductivity of the economy as consequences. The tool for determining the size of the shadow economy in regression is the assessment of the results of entrepreneurial activity in the official sector based on statistical data on the development of the US economic system. As a result of the study, the hypothesis was determined that the size of the shadow economy has a strong connection with productive (unproductive) entrepreneurship. As a result of the study of the US economic system, a three-factor model has developed: indicators of entrepreneurship development, the size of corruption and the size of the shadow economy [Wiseman, T. (2015)].

A continuation of the study of the influence of corruption and the shadowing of the economy is the study of the geographical zoning of territories by income level. The main idea is that the initial manifestation of corruption may be country-specific and that different types of corruption may have different consequences. Accordingly, according to the results of the study, it was determined that the level of corruption affects the level of transparency and motivation for entrepreneurial and investment activity, and the level of entrepreneurial and investment activity determines the level of consumer activity, which already affects the level of shadowing of the economy [Virta, H. (2010)].

Therefore, according to the results of the analysis of literary sources, the following were identified among the directions of development of the study of influences on the processes of detinization of the economy: entrepreneurial and investment activity, transparency of economic systems, transparency of regulatory mechanisms in management processes, ensuring effective regulatory and legal regulation of economic systems management processes, the introduction of innovations and digital technologies.

Methodology

The article uses general scientific research methods. The analysis of scientific research and statistical data made it possible to identify ways of detinization of the

economy. Based on the analysis of scientific research works of various authors, systematization, synthesis and structuring of the results of the selection of key factors and priorities of detinization of economic systems, the article puts forward hypotheses regarding the set of factors and approaches that can be used for the further formation of proposals for practical implementation. By separating individual trends of social development from the system of the whole into parts, which are directly related to the processes of the shadow economy, trends in the development of economic systems were formed. By applying the methods of induction and deduction as methods of scientific knowledge, the cause-and-effect relationships of economic processes and their impact on the shadow economy were determined. By applying the methods of economic and mathematical modeling, the hypotheses of the dependence of the proposed factors and the share of detinization of the economy were proved. The hypothesis was confirmed by calculating the correlations of the share of shadowing of the economy in the country's GDP and by calculating the parametric indicators of the evaluation factors developed because of the study. Based on the grouping of research results and the use of heuristic research methods, which allowed to mathematically substantiate the proposed hypotheses, proposals for automating the processes of managing economic systems aimed at the detinization of the economy were developed. Accumulation of the developed hypotheses and totality made it possible to develop a model for managing the detinization of the economy, which allows determining the effectiveness of measures aimed at detinization. Due to the use of the method of systematization and synthesis, an algorithm for the implementation of the economic detinization management model was developed with recommendations for its practical implementation.

Results

Analysis of the resources of official statistical sources [Official web-site Ministry of Economy of Ukraine, National Bank of Ukraine, European Business Association] made it possible to determine the trends of detinization of the national economy, which are as follows:

- the highest indicators of detinization are observed in the real estate sector (reduction from 44% to 30% during 2021). The results of detinization processes were the reduction of losses of business entities and the activation of financial and economic processes in the industry. The deification of the industry was associated with the automation of the regulatory system and the direction of the state to ensure automated processes for issuing permits and deregulation of monitoring processes

by determining the possibility of applying public oversight processes in the field of construction.

- the reduction of the share of the shadow economy in transport amounted to 10% (from 44% to 34% in 2022), which was due to the activation of consumption processes and the installation of automated payment and control systems.

- reduction of the share of shadow activity in the processing industry by 9% (from 35% to 26% in 2021), which is due to the orientation of the industry to European markets and the provision of operational and strategic management processes in accordance with European norms and quality standards,

- reduction of the share of shadow activity in the extractive industry by 8% (from 39% to 21% in 2021), which is due to the orientation of the industry to European markets and the provision of operational processes and processes of strategic management to European norms and quality standards,

- reduction of the share of shadow economic activity in the field of a trade by 19% (from 30% to 11% in 2021), which is due to the weakening of quarantine restrictions, the activation of entrepreneurial activity, the activation of indicators of the financial and economic activity of trading enterprises, i.e. the exit from the crisis and the beginning of provision development processes,

- an increase in the share of shadow assets in the financial sphere to 30%, which is associated with the financial crisis and the growth of losses in the financial sector due to financial and economic instability and fluctuations in exchange rates.

Therefore, the results of the analysis of the trends of detinization of the national economy allowed us to put forward hypotheses about the cause-and-effect relationships of the factors of crisis phenomena and the growth of the share of the detinization of the economy. Also, it is expedient to determine that the growth of consumption volumes and access to new markets with high standards require the subjects of economic activity to reduce the level of shadow activity.

The analysis of literary sources made it possible to identify additional factors influencing the growth of the share of the shadow economy, in particular:

- low level of protection of intellectual property rights informational property,
- low level of information security,
- low level of business liquidity,

- lack of effective regulatory mechanisms for ensuring the rights of investors,
- activation of the development of the stock market,
- development of anti-corruption legislation,
- lack of control over economic activity in the temporarily occupied territories.

That is, the main tasks of the development of the economic system with the aim of its detinization are openness, transparency, and provision of an effective normative and legal framework for regulation.

Based on the analysis, a system of causal relationships was formed – Figure 1.

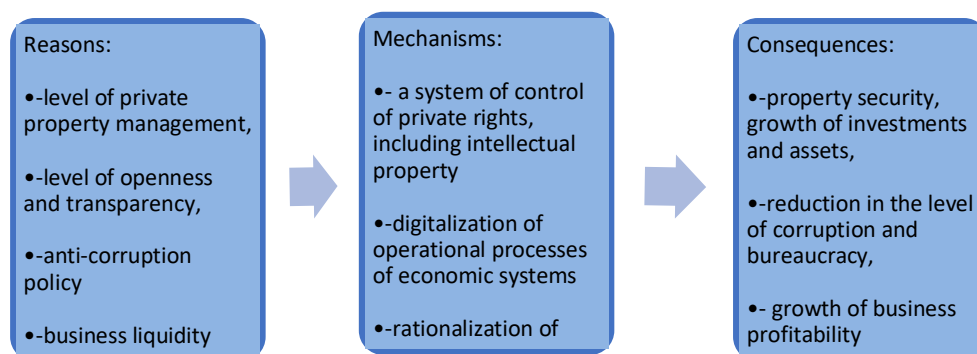


Figure 1. The system of cause-and-effect relationships of detinization of the economy

Source: developed by the author based on the analysis of national experience and literature review

To confirm the proposed hypotheses regarding the cause-and-effect relationships of the detinization of the economy, it is proposed to identify a set of influencing factors and analyze correlational interdependencies. The hypothesis was confirmed by calculating the correlations of the share of shadowing of the economy in the country's GDP and by calculating the parametric indicators of the evaluation factors developed because of the study. The results are presented in Table 1.

Table 1.

Calculation of correlations of the share of shadowing of the economy in the GDP of the country and calculation of parametric indicators of evaluation factors

Indicator	Evaluation parameter	Calculation of the indicator for 2021	Correlation to the country's GDP per capita	Correlation to the Chatsky shadow economy of the country
Protection of property rights				
Small Business Rights Protection Index	$SB_{rp} = \frac{SB_i}{SB_{i-1}}$ SB I - number of small enterprises opened in the current period, SB i-1 - number of small enterprises opened in the previous period	2,6	0,73	0,75
Judicial index	$J_i = \frac{AP}{AT}$ AP - number of judicial administrative proceedings, AT - number of administrative transactions	2,5	0,81	0,91
Entrepreneurial activity				
Production index of basic industries	$P_{i(t-12)} = \sum q_{i(t-12)} * w_{i,t-12}$ Pit/t-12 – change P in annual terms, qi,t/t-12 – change in output (activity) in a separate type of activity on an annual basis, wi,t-12 – the weighting factor for a separate type of activity, calculated on the basis of the gross added value created in the corresponding month of the previous year	0,47	0,69	0,73
Reducing the level of corruption				
Investment index	$I_i = \frac{Inv}{AA}$ Inv - the amount of involved investments, AA - the amount of assets	2,48	0,79	0,81

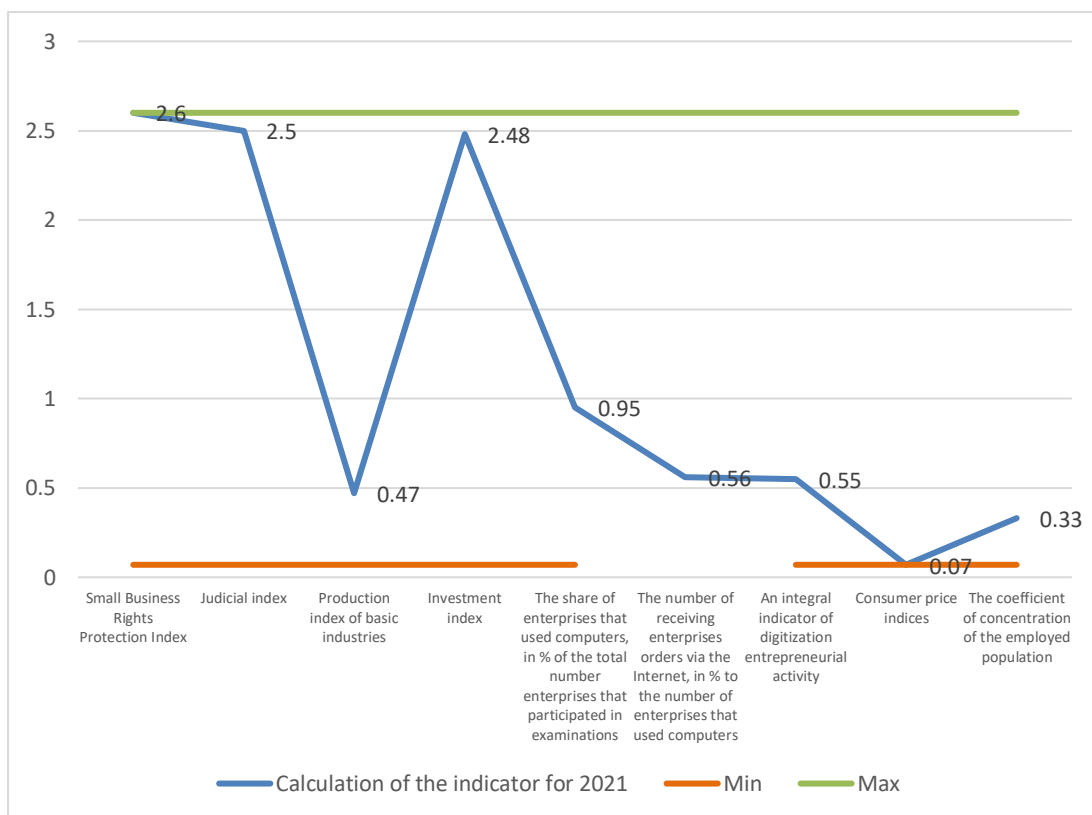
Digitization				
The share of enterprises that used computers, in % of the total number of enterprises that participated in examinations	$ID_1 = \frac{CompUs}{Total}$ CompUs - enterprises that used computers, in % Total - total number enterprises that participated in examinations	0,95	0,78	0,83
The number of receiving enterprises orders via the Internet, in % to the number of enterprises that used computers	$ID_2 = \frac{RE}{EUC}$ RE - number of receiving enterprises orders via the Internet, in % EUC - number of enterprises that used computers	0,56	0,81	0,83
An integral indicator of digitization entrepreneurial activity	$I_{id} = \frac{Dinvest}{A}$ D invest - investments in digital technologies A - the value of the company's assets	0,55	0,87	0,89
Profitability				
Consumer price indices	$CP_1 = \frac{LP_{cp}}{LP_{pp}}$ LP cp - the level of prices for goods and services of the current period, LP pp - the level of prices for goods and services of the previous period	0,07	0,56	0,74
The coefficient of concentration of the employed population	$EP = \frac{E}{AE}$ E - employed population of working age, AE - number of active enterprises,	0,33	0,57	0,53

Source: developed by the author based on the results of statistical analysis [Official web-site Ministry of Economy of Ukraine, National Bank of Ukraine, European Business Association]

In the structure of factors influencing the shadowing of the economy, factors with a correlation dependence of more than 50%, i.e., a high correlation, indicating a significant influence on shadowing processes, were identified.

The developed set allows modeling the processes of detinization of the economy by projecting factors. The trend line developed based on the results of the analysis determines the standard errors of the deviations. Graphically, the model is presented in Figure 2.

Figure 2. Model of management of economic detinization indicators



Source: developed by the author based on the calculation of the correlation coefficient and the selection of evaluation indicators

Based on the development of a set of indicators of influence on detinization processes and determination of the relevance of automation of business processes as an element of ensuring transparency and impartiality, the article offers proposals for automation of economic systems management processes aimed at detinization of the economy.

Discussion

As a result of the conducted research the analysis of factors influencing the processes of detinization of the economy and the analysis of national statistics of the results of financial and economic activity, a set of factors influencing detinization, consisting of the following groups of indicators, was selected and mathematically substantiated:

- Protection of property rights,
- Entrepreneurial activity,
- Reducing the level of corruption,
- Digitization,
- Profitability.

Mathematical modeling by determining the parameters for the evaluation of the above groups of factors, calculation of the correlation coefficient of the indicators made it possible to identify a set of influencing factors as the cause-and-effect relationships of the model. The projection of mathematical calculations determined the limitations in the parameters of the model.

Mathematical calculations and the analysis of theoretical and methodological approaches to the formation of detinization processes made it possible to highlight the following recommendations for ensuring the detinization of the economy:

- formation of an effective system of regulatory and legal protection of property rights, primarily intellectual,
- creation of a system of automated monitoring of intellectual property rights compliance,
- formation of technical and technological measures aimed at protecting intellectual property rights and property rights,
- deregulation of economic systems by introducing into the system the state regulatory policy of the public sector and public institutions with profile specificity for assessment,
- digitization of processes for issuing permit documents in order to minimize the level of corruption,
- transferring all payments into a digital format in order to ensure financial control,
- automation of digital financial control processes,

- increasing the liquidity of enterprises through the development of a sustainable business development policy,
- determination of opportunities to increase the profitability of enterprises through the rationalization of regulatory policy,
- increasing the level of investment attractiveness by guaranteeing investments, investment transparency, the minimum tax rate, minimal bureaucratic processes for controlling investment processes, digitalization and the transition to digital currency markets.

The practical implementation of the proposed measures lies within the sphere of responsibility of public administration bodies and interaction within the framework of public and private partnership.

The question of supplementing factors influencing the processes of detinization is debatable, the development of which may become the tasks of further scientific research.

Conclusions

As a result of the conducted research, it was determined that the shadow economy exerts a significant negative influence on the processes of economic development. Economically developed countries have the world's lowest indicators of the shadow economy in the structure of the country's GDP, the poorest countries, respectively, have the highest indicators of shadow economy (up to 45%). Therefore, there is a direct dependence of the formation of prerequisites for the development of the shadow economy and the economic development of the country. It was determined that the factors influencing the shadowing of the economy are both external in nature (instability, social development transformations, pandemics, military conflicts), and internal levels of digitization, liquidity, and economic activity. The article develops a model of cause-and-effect relationships of the processes of detinization, which has an innovative character. Based on the conducted research, practical recommendations were developed regarding the detinization of the economy, which are related to the implementation of management mechanisms aimed at increasing the transparency and openness of regulatory systems, reporting systems, management and licensing systems and creating opportunities for the development of investment and entrepreneurial activity. The growth of consumer activity because of investment and innovation processes is the basis of the formation of economic prerequisites for the reduction of shadow activity, and the development of digital regulatory processes and the simplification of regulatory procedures determine the mechanisms of public management of processes of detinization of the economy at the global and national levels of economic systems.

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