

UDC 336.1

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MANAGEMENT OF THE INCOME AND BUSINESS ACTIVITY OF THE POPULATION IN THE CONTEXT OF DE-SHADOWING THE ECONOMY OF UKRAINE

Abstract. The shadowing of the economy is a significant obstacle on the way to stable economic development and the reason for deteriorating investment climate and imbalance of economic incentives in the national economy of Ukraine. The aim of the article is to determine the factors of shadowing and de-shadowing of Ukraine's economy in the areas of household income and business and investment activity of the population, as well as justification of measures to de-shadow economic processes in Ukraine. On the basis the calculation of the Fechner correlation coefficient, the relationship between the level of the shadow economy of Ukraine and indicators of household income and indicators of small and medium-sized business development was revealed. In the sphere of household income factors determining level of the black economy are as follows: increasing in disposable income per capita (the correlation coefficient -0,75), the change in the wage share in household incomes (the correlation coefficient -0,75), the level of social payments (the correlation coefficient +0,5) and employment (the correlation coefficient +0,75). In the field of entrepreneurship the most significant factors determining level of the underground economy are change in the volume of sales of small and medium-sized businesses (the correlation coefficient -0,75) as well as change of financial result of small enterprises (functional inverse relationship).

It is necessary to increase the incomes of the population, stimulate their investment and entrepreneurial activity, in particular, liberalize tax policy for small and medium-sized businesses in order to reduce the level of the underground economy of Ukraine. Special attention should be paid to the development of small businesses, in particular, to changing approaches to regulatory policy in the field of small businesses, to simplify organizational procedures related to doing business as much as possible and ensure the availability of credit.

Keywords: underground economy, tax policy, small businesses, medium-sized businesses, entrepreneurial activity.

JEL Classification O17, H25, D31

Formulas: 1; fig.: 9; tabl.: 8; bibl.: 21.

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УПРАВЛІННЯ ДОХОДАМИ І ПІДПРИЄМНИЦЬКОЮ АКТИВНІСТЮ НАСЕЛЕННЯ В КОНТЕКСТІ ДЕТІНІЗАЦІЇ ЕКОНОМІКИ УКРАЇНИ

Анотація. Тінізація економіки є значною перешкодою на шляху стабільного економічного розвитку держави і причиною погіршення інвестиційного клімату, а також дисбалансу економічних стимулів у національній економіці України. Метою статті є визначення факторів тінізації та детінізації економіки України у сферах доходів домогосподарств і ділової та інвестиційної активності населення, а також обґрунтування заходів щодо детінізації економічних процесів в Україні. На основі розрахунку коефіцієнта кореляції Фехнера виявлено взаємозв'язок між рівнем тіньової економіки України і показниками доходів домогосподарств і показниками розвитку малого та середнього бізнесу. У сфері доходів домогосподарств серед факторів, які мають визначальний вплив на рівень тіньової економіки, виявлено такі як: збільшення наявного доходу на душу населення (коефіцієнт кореляції -0,75), зміна частки заробітної плати в доходах домашніх господарств (коефіцієнт кореляції -0,75), рівень соціальних виплат населенню (коефіцієнт кореляції +0,5) і рівень зайнятості (коефіцієнт кореляції +0,75). У сфері підприємництва найбільш значущими факторами, які визначають рівень тіньової економіки, є зміна обсягу продажів малого і середнього бізнесу (коефіцієнт кореляції -0,75), а також зміна фінансового результату малих підприємств (функціональна зворотна залежність).

Зважаючи на результати кореляційного аналізу, в Україні з метою зниження рівня тіньової економіки потрібно збільшити доходи населення, стимулювати їхню інвестиційну та підприємницьку діяльність, зокрема лібералізувати податкову політику для малого і середнього бізнесу. Особливу увагу слід приділити розвитку малого бізнесу, зокрема

змінити підходи до регулятивної політики у сфері малого підприємництва, максимально спростити організаційні процедури, пов'язані з веденням бізнесу, і забезпечити доступність кредитування.

Ключові слова: тіньова економіка, податкова політика, малий бізнес, середній бізнес, підприємницька активність.

Формул: 1; рис.: 9; табл.: 8; бібл.: 21.

Introduction. The shadow economy is a phenomenon caused by many different factors. Among the important areas of Ukraine's economy that are in the shadows are the household incomes. Accordingly, incomes of the population and households have a significant impact on the level of economic processes shadowing.

The reasons for the black household incomes are instability, constant transformations and reforms in various sectors of the economy, public distrust in the effectiveness of these changes, and as a consequence, loss of confidence in the future. In such conditions, the country's population lives today and tries to work with maximum efficiency at present time, not ready to invest the money earned in long-term investment projects and hides part of the income.

Reasons for shadowing of business activities of the population include inefficiency of tax privileges for small and medium-sized businesses, frequent changes in tax legislation, complicated document flow, etc.

Taking into account these unresolved problems of low incomes of the population and issues of small and medium-sized businesses activity, it is important to study their impact on the shadow economy in Ukraine.

Analysis of recent research and problem statement. The problem of measuring the amount of shadow economic activity, determining the factors and financial key factors that minimize the level of the underground economy is one of the most discussed topics in the economic literature and practice of state regulation and ensuring the appropriate level of financial security.

Dernova I. A. (2010) has made a significant contribution to both methodological and methodical aspects of regulating the level of the shadow economy through analyzing monetary levers in Ukraine. The author had analyzed the features of changing an exchange rate of Ukrainian national currency under the affect of some monetary factors: the amount of money supply, the level of dollarization of the national economy and foreign exchange reserves.

Reikin V. S. & Makara O. V. (2017), in their turn, witnessed the fact of the large tax burden imposed on businesses in Ukraine (Indicator «Total Tax Rate» is (52,2%)) resulting in a significant increase of Ukraine's economy monetization levelling at 47.7% to 60.2%. The authors have proved that this configuration of indicators means that most of the cash is used for maintenance informal sector of national economy.

Colin C. Williams & Sara Nadin (2013) have estimated impact of undeclared work on sector of shadow economy.

On the contrary, the opposite relations of the share of wages in output and the level of shadow economy have been substantiated by Kharazishvili Yu. M. (2017). It has been concluded that the shadow economy may turn out to become an important reserve for economic growth. Tyshchuk, T. A. et al. (2011) have attempted to distinguish the factors influencing the shadowing Ukraine's economy and to analytically ground them.

Psychoyios et al. (2019) tend to estimate an informal sector in nineteen countries of the EU by the means of energy and in the way of implementing three variations of the physical input approach. The research shows that the EU countries having high black economy levels can easily show the significant downturn in the indicators of the latter mainly due to the increased rate of governance quality.

Certain investigation insights into the industrial issues of shadow sector taxation have been provided by Kuzmenko et al. (2016). Another set of facts can be found in the works of Huynh C. M. & Nguyen T. L. (2020) who are stating the obvious impact of underground economy on income inequality due to a pool of a panel data set of nineteen Asian countries for the 25 years. Besides, tax

instruments counteracting the economic activity in the shadow economy researched by Borisovich et al. (2016).

Moreover, the relations of the underground economy to inflation, taxation, financial development and economic growth have also been studied by Mazhar & Méonb (2017), Berdiev & Saunoris (2016) and Hajilee et al. (2017).

Following the studies of Enste D. (2015), who investigated the methods of reducing the volume of the shadow economy by an improvement of the official institutions, we may sort out the facts providing the scientific community with the profound reasons for the relation of the informal economy in the industrial countries and factors that have influenced the volume of the black economy.

The aim of the article is to study the interconnections between population’s incomes, its economic, investment, entrepreneurial activity and the level of the shadow economy and to determine the levers of de-shadowing of financial and economic processes in Ukraine.

Methodology. The correlation coefficients stand for the determination and/or measuring the tightness of different variables. Considering one of the most widely used indicators (Pearson Linear Correlation Coefficient), one has to bear in mind that there should only be the certain obligatory conditions for the latter to be applied — a distribution law of both variables, the relation tightness of which is being researched. That is, the asymmetry and the kurtosis values of the related data series are to be close to zero. However, the required conditions of the necessary economic indicators involved in this research are not met.

To correctly specify the correlation between the identified indicators of the population’s investing activity, their profit and the black economy level in relation to official GDP, we applied the comparison of parallel lines of two indicators method based on the calculation of Fechner coefficient.

Fechner’s coefficient analysis makes it possible to assess the degree and direction of deviation in individual values of factor and result indicators compared to their average values (Herasymenko S. S., 2000).

The calculation of Fechner’s coefficient is performed by the formula (Marmoza A. T., 2013):

$$K_F = \frac{n_a - n_b}{n_a + n_b},$$

where n_a is the sum of coincidences of signs; n_b is the sum of character mismatches.

Fechner’s coefficient may vary from 0 to ± 1 . If all the deviations coincide, up to $n_b = 0$, Fechner’s coefficient is equal to one. It indicates the presence of a direct connection. If the all mathematical deviations are different, then $n_a = 0$. The Fechner coefficient is equal to -1, which indicates the presence of an inverse relationship.

Research results. In the recent years, according to the official data, the level of the black economy has been declining (*Table 1*).

Table 1

**Integral indicator of the black economy level in the national economy
(percentage of the official GDP volume) and real GDP growth rates increase / decrease
(percentage compared to the corresponding period of the previous year)**

Indicators	2010	2011	2012	2013	2014	2015	2016	2017	2018
Informal economy level, %	38	34	34	35	43	40	35	32	30
Change in the real GDP of Ukraine, % to the previous year	4,1	5,5	0,2	0	-6,6	-9,8	2,4	2,5	3,3

Source. Created by the authors according to the National Risk Assessment Report (State financial monitoring service of Ukraine, 2019).

According to the above method of the Fechner correlation coefficient calculation, individual indicators related to household incomes and their economic and investment activity are selected (*Table 2*) and how they relate to the level of the underground economy is researched.

Table 2

**Some indicators of household incomes, their economic and investment activity
and the level of Ukraine's economy shadowing**

Indicators	2010	2011	2012	2013	2014	2015	2016	2017	2018
Disposable income per person, UAH	18486	21638	25206	26719	26782	31803	37080	47270	58442
The share of wages in household incomes, %	40.82	41.77	41.80	40.73	40.55	40.04	43.79	45.59	47.08
Share of social assistance in household income, %	21.54	20.81	20.69	20.86	20.53	19.33	16.47	14.77	14.34
Share of working population among economically inactive population, %	2.30	2.10	1.80	1.70	2.20	2.00	1.70	1.40	1.20
Increase in cash deposits and savings in securities, UAH million	81024	43607	71689	104727	-118734	-106306	32528	62180	60951
The level of the shadow economy, % to GDP	38	34	34	35	43	40	35	32	30

Source. Formed by the authors according to the data of the Ministry of Finance of Ukraine (2020) and the State Statistics Service of Ukraine (2020).

The *Table 3* below shows the values of change in the indicators in relation to the indicators of the previous year and their average values.

Table 3

**Changes in household incomes indicators and its economic and investment activity and
the level of Ukraine's economy shadowing**

Changes in the indicators	2011	2012	2013	2014	2015	2016	2017	2018	Average value
Increase in disposable income per capita, UAH	3152	3568	1513	63	5021	5277	10190	11172	4994.5
Change in the share of wages in household income, %	0.95	0.03	-1.07	-0.18	-0.50	3.75	1.80	1.49	0.78
Change in the share of social assistance in the income of the population, %	-0.73	-0.12	0.17	-0.34	-1.20	-2.87	-1.69	-0.44	-0.90
Change in the share of able-bodied population among the economically inactive population	-0.2	-0.3	-0.1	0.5	-0.2	-0.3	-0.3	-0.2	-0.13
Change of the black economy level, % to GDP	-4	0	1	8	-3	-5	-3	-2	-1

Source. Calculated by the authors according to the data of the Ministry of Finance of Ukraine (2020) and the State Statistics Service of Ukraine (2020).

The table shows intermediate data for the deviations of the analyzed indicators from their average values.

The factor indicators in our study are the following: an increase in disposable income per person, a change in the share of wages in household incomes, a change in the share of social assistance in household incomes, a change in the share of the able-bodied population among economically inactive people, an increase in cash deposits and savings in securities. The change in the level of the underground economy is the resulting indicator, the one that is influenced by factor indicators (*Table 4*).

Table 4

Signs of factor indicators and result indicator deviations

Indicators	2011	2012	2013	2014	2015	2016	2017	2018
Increase in disposable income per capita, UAH	-1	-1	-1	-1	1	1	1	1
Change in the share of wages in household income, %	1	-1	-1	-1	-1	1	1	1
Change in the share of social assistance in the income of the population, %	1	1	1	1	-1	-1	-1	1
Change in the share of able-bodied population among the economically inactive population	-1	-1	1	1	-1	-1	-1	-1
Increase in cash deposits and savings in securities, UAH million	1	1	1	-1	-1	1	1	1
Change of the shadow economy level, % to GDP	-1	1	1	1	-1	-1	-1	-1

Source. Own calculations.

According to the results of the previous research, there exists tight inverse correlation between the increase in disposable income per capita and the change in the level of the black economy: Fechner's coefficient correlation is -0.75 (Fig. 1).

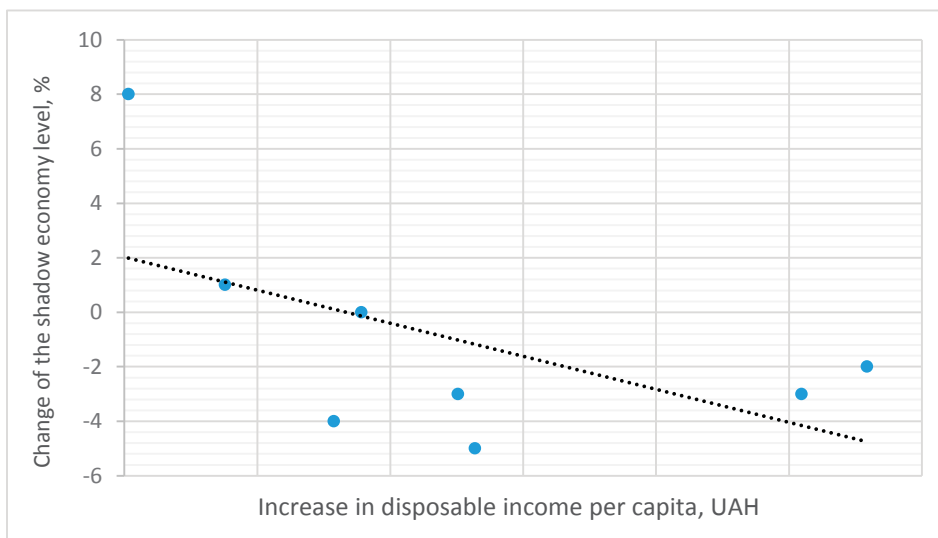


Fig. 1. The impact of the disposable income per person increase on the change of the shadow economy level

Source. Own calculations.

This value of the correlation coefficient indicates that with the growth of real official incomes, the level of the black economy decreases. Thus, by providing a stable growing real income, the state can influence the level of the shadow economy, because when every year the population is provided with a stable income that does not lose its purchasing power, people are not trying to look for additional sources of income, which are usually illegal.

Along with the available per capita income, the change in the share of wages in the income of the population is inversely dependent on the change of the underground economy level (correlation coefficient -0.75) (Fig. 2).



Fig. 2. The impact of the change in the wage share in household incomes on the level of the shadow economy change

Source. Own calculations.

Thus, wage is the determining factor for the income of the population, which affects the underground economy level.

There is also a moderate direct link between the change in the level of the underground economy with the change in the share of social assistance in the income of the population — +0.5 (Fig. 3).

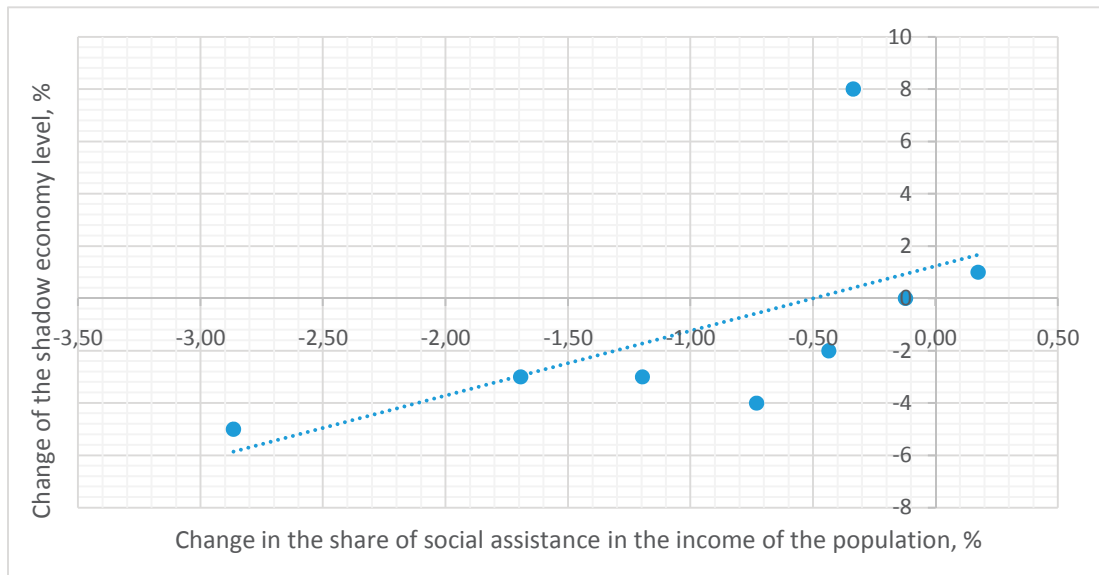


Fig. 3. The impact of changes in the share of social benefits in household incomes on changes in the level of the black economy

Source. Own calculations.

This result indicates that the reduction of social benefits will have a positive effect on changing the level of the shadow economy and reduce it, because reducing the share of social benefits in household incomes would mean that the share of socially disadvantaged population stratum is decreasing while household incomes increase in other active forms. This relation can also be explained by the fact that the management of financial resources allocated for social benefits is quite centralized in Ukraine. Financial decentralization of social benefits would provide for a higher level of financial resources control at the local level and targeted social benefits to vulnerable groups. Centralized management is less effective in terms of the quality of financial control, so the growth of social benefits in income directly correlates with the growth of the underground economy.

There is also a direct close link between the change in the share of the working population among the economically inactive population and the change in the level of the shadow economy (Fig. 4).

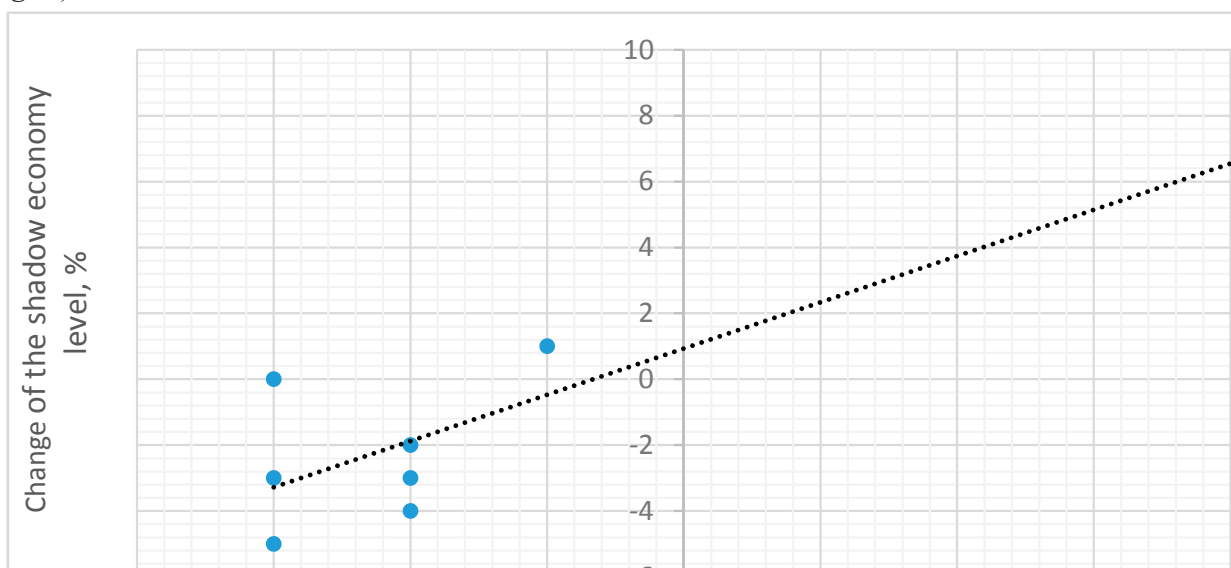


Fig. 4. The impact of changes in the share of able-bodied unemployed among the economically inactive population on changes in the level of the shadow economy

Source. Own calculations.

The correlation coefficient is also high +0.75. The able-bodied unemployed include those who are disappointed in their job search, unable to find a suitable job and those who believe that there is no decent job for them. With these statistics and research in this area, the state can develop appropriate methods and implement measures for the employment of these people, because they obviously receive shadow income. The task of the state is to make their activities legal.

To do this, it is necessary to conduct appropriate career guidance work, training, create additional jobs, encourage the population with career growth, real effective pensions and other bonuses related to the official length of service, etc.

A weak inverse relationship (Fechner’s correlation coefficient -0.25) also exists with the growth of cash deposits and savings of the population in securities (Fig. 5).

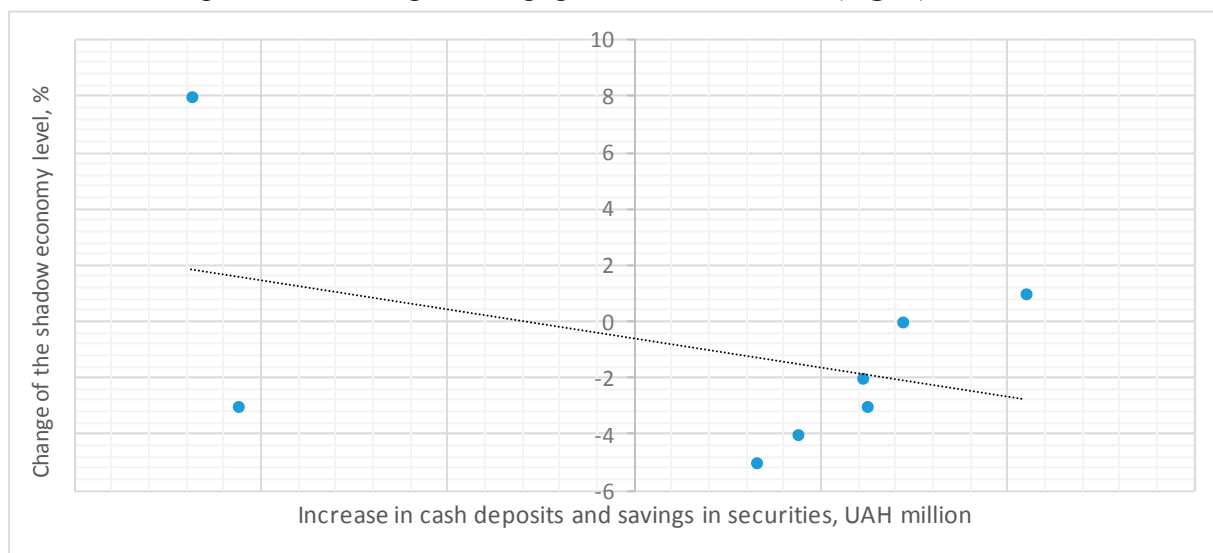


Fig. 5. The impact of the cash investments growth and savings in securities on changes in the level of the shadow economy

Source. Own calculations.

It is worth noting that the stock market in market economies is, among other things, an independent tool for assessing the capitalization of the corporate sector, the value of assets and the prospects for changes in their value in the future. In Ukraine, due to the low functionality of the Ukrainian stock market and especially the underdevelopment of its stock segment, with the development of the securities market it is possible to expand the shadow sector, as unorganized securities market often serves underground business financing schemes Lukianenko I. H. & Markovska M. Yu. (2017). However, the investment of household savings in securities takes place mainly on the official stock market.

The growth of such investments generally indicates an increase in the share of the regulated stock exchange in the structure of stock market, its transparency and public confidence in securities as an object of investment savings. Investments and securities also indicate an improvement in the country’s domestic investment climate. Thus, a further increase in deposits and savings in securities will cause de-shadowing of economic processes.

The relationship between the indicators of small and medium-sized businesses, the tax component and the level of the Ukrainian economy shadowing were researched as well (Table 5).

Table 5

Some indicators of small and medium-sized business activity in Ukraine and income taxation

Indicators	2010	2011	2012	2013	2014	2015	2016	2017	2018
Volume of products sold by private entrepreneurs, UAH billion	230.4	211.21	256.64	284.23	289.04	397.47	489.20	604.33	760.75
Volume of sold products by small enterprises, UAH billion	779.19	807.77	916.28	933.71	981.30	1318.97	1651.98	2067.79	2496.94

Table 5 (continued)

Indicators	2010	2011	2012	2013	2014	2015	2016	2017	2018
Volume of medium-sized enterprises sold products, UAH billion	1415.85	1618.84	1782.44	1683.34	1735.89	2184.37	2683.30	3314.95	3954.01
Financial result before taxation of small enterprises, UAH billion	-15.64	-5.05	-9.25	-25.05	-175.26	-111.90	-24.15	-10.72	46.87
Financial result before taxation of medium-sized enterprises, UAH billion	41.58	31.09	47.74	8.39	-199.18	-91.16	32.81	90.77	147.16
The share of income taxes in the consolidated budget revenues, %	29.66	39.29	28.89	30.21	26.93	23.01	27.61	27.84	30.87

Source. Formed by the authors according to the data of the State Tax Service of Ukraine (2020) and the State Statistics Service of Ukraine (2020).

The table below shows the values of change in these indicators compared to the value of the previous year and their average values (Table 6).

Table 6

Changes in small and medium-sized business activity indicators and income taxation

Changes in the indicators	2011	2012	2013	2014	2015	2016	2017	2018	Average value
Change of volume of products sold by private entrepreneurs, UAH billion	-19.19	45.43	27.59	4.81	108.43	91.73	115.13	156.42	66.29
Change of volume of sold products by small enterprises, UAH billion	28.58	108.51	17.43	47.59	337.67	333.01	415.81	429.15	214.72
Change of volume of sold products by small and medium-sized enterprises, UAH billion	231.57	272.11	-81.67	100.14	786.15	831.94	1047.46	1068.21	531.99
Change of financial result before taxation of small enterprises, UAH billion	10.59	-4.2	-15.8	-150.21	63.36	87.75	13.43	57.59	7.81
Change of financial result before taxation of small and medium-sized enterprises, UAH billion	0.1	12.45	-55.15	-357.78	171.38	211.72	71.39	113.98	21.01
Change in the share of income taxes in the consolidated budget revenues, %	9.63	-10.41	1.33	-3.28	-3.92	4.61	0.23	3.03	0.15

Source. Calculated by the authors according to the data of the State Tax Service of Ukraine (2020) and the State Statistics Service of Ukraine (2020).

The table presents intermediate data on the deviations of the analyzed indicators from their average values (Table 7).

Table 7

Signs of factor indicators and result indicator deviations

Indicators	2011	2012	2013	2014	2015	2016	2017	2018
Change of volume of products sold by private entrepreneurs, UAH billion	-1	-1	-1	-1	1	1	1	1
Change of volume of sold products by small enterprises, UAH billion	-1	-1	-1	-1	1	1	1	1
Change of volume of sold products by small and medium-sized enterprises, UAH billion	-1	-1	-1	-1	1	1	1	1
Change of financial result before taxation of small enterprises, UAH billion	1	-1	-1	-1	1	1	1	1
Change of financial result before taxation of small and medium-sized enterprises, UAH billion	-1	-1	-1	-1	1	1	1	1
Change in the share of income taxes in the consolidated budget revenues, %	1	-1	1	-1	-1	1	1	1
Change of the shadow economy level, % to GDP	-1	1	1	1	-1	-1	-1	-1

Source. Own calculations.

The close inverse relationship (Fechner’s correlation coefficient -0.75) of the change in the level of the underground economy can be traced to the change in sales of small and medium-sized businesses and their pre-tax financial results (Fig. 6).

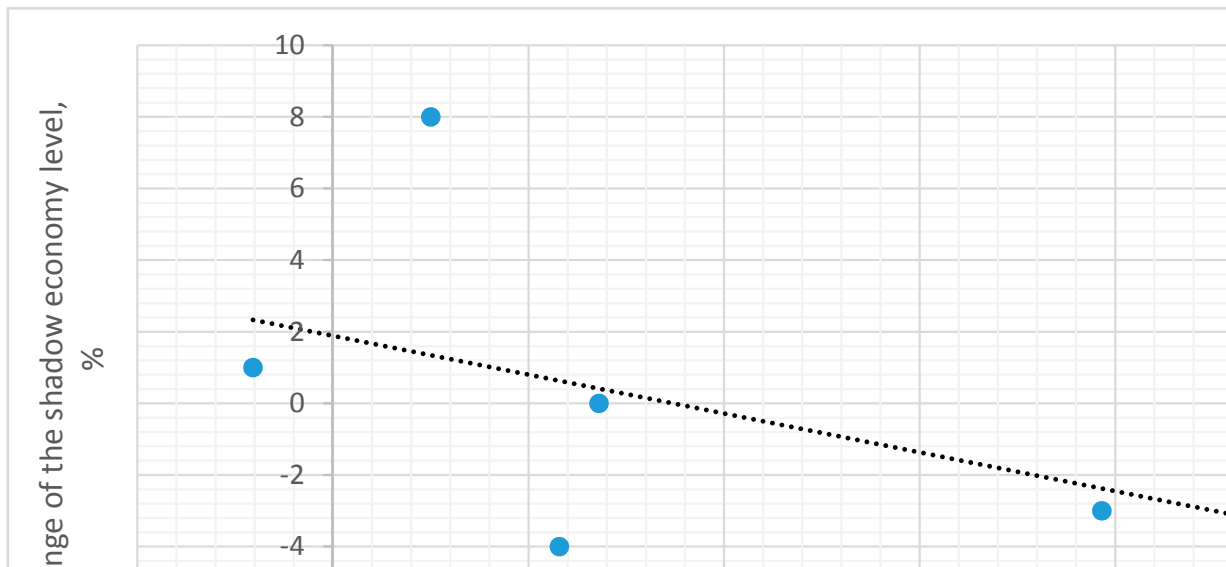


Fig. 6. The impact of changes in the volume of sales of small and medium-sized businesses on the change in the level of the shadow economy

Source. Own calculations.

If we consider only the change in the small enterprises pre-tax financial result, then there is a functional inverse relationship (Fig. 7).

Such high correlation indicators demonstrate the need to develop small and medium-sized business to reduce the level of Ukraine’s economy shadowing, and special attention should be paid to the small business.

Note that the development of small and medium-sized businesses strengthens the financial security and independence of the regions, because the only tax paid by these entrepreneurs in Ukraine goes to local budgets. Small business is flexible; it reacts quickly to changing market conditions and can be a generator of rapid economic development. All these features and peculiarities of small enterprises functioning are vitally important in the current conditions of economic development in Ukraine, so the need for development of this segment is obvious.

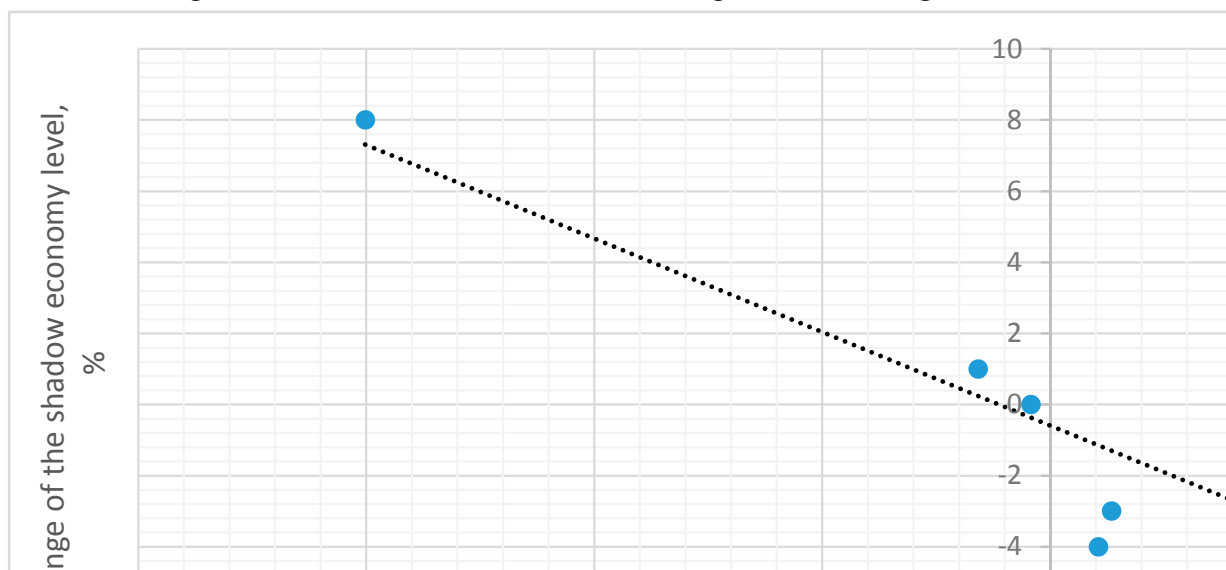


Fig. 7. The impact of changes in the financial result before taxation of small enterprises on the change in the level of the shadow economy

Source. Own calculations.

At the same time, the growth of the share of income taxes in the revenues of the Consolidated Budget is a factor in the de-shadowing of the economy in Ukraine. Moderate inverse relationship between the change in the level of the black economy can be traced to the change in the share of income taxes in the revenues of the consolidated budget of Ukraine -0.5 (Fig. 8).

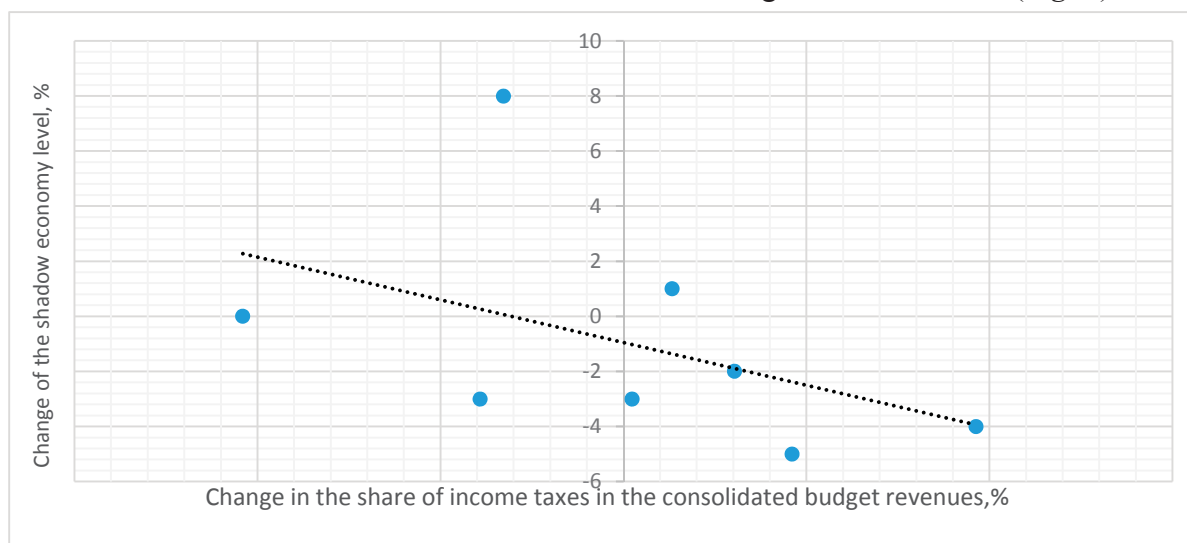


Fig. 8. Influence of the income tax share changes in the consolidated budget revenues on the change of the shadow economy level

Source. Own calculations.

This is due to the fact that direct taxes, compared to indirect taxes, have a more transparent and simpler mechanism of accrual and payment, which allows for more effective tax control. Instead, the complex and confusing mechanism of indirect tax administration creates the preconditions for the widespread use of tax evasion schemes.

The reasons for the unsatisfactory state of small business development in Ukraine, related to direct government regulation, are:

- frequent changes in tax legislation, which does not allow small businesses to operate in a stable manner and plan their activities. In particular, in recent years the criteria for assigning enterprises to certain groups of small businesses have changed several times;
- absence of real valid tax benefits for newly created small businesses;
- excessive government regulation that slows down the development of small business;
- complicated document flow and excessive requirements for the organization of small enterprises.

Among the factors influencing the development of small business related to the financial sector of the economy: difficulties with borrowings, expensive loans; instability of the national currency exchange rate; low activity and efficiency of use by the small enterprises the advantages of leasing, factoring, franchising in the creation of an economic entity and the expansion of their activities; lack of reliable small business insurance, taking into account the specifics of the sector;

Along with this, there are a number of general macroeconomic factors that shape the environment of small businesses and negatively affect their development: insufficient effective demand of the population; lack of qualified personnel (specialists, managers); low financial literacy of the population; corruption and bureaucracy; uneven development of regions; the tendency to concentrate the able-bodied young population in large cities.

Fig. 9 schematically shows the impact of the analyzed household income indicators and their economic, investment activity and activity of small and medium-sized businesses on the change in the level of the black economy in Ukraine in terms of factors of shadowing and de-shadowing of the economy.

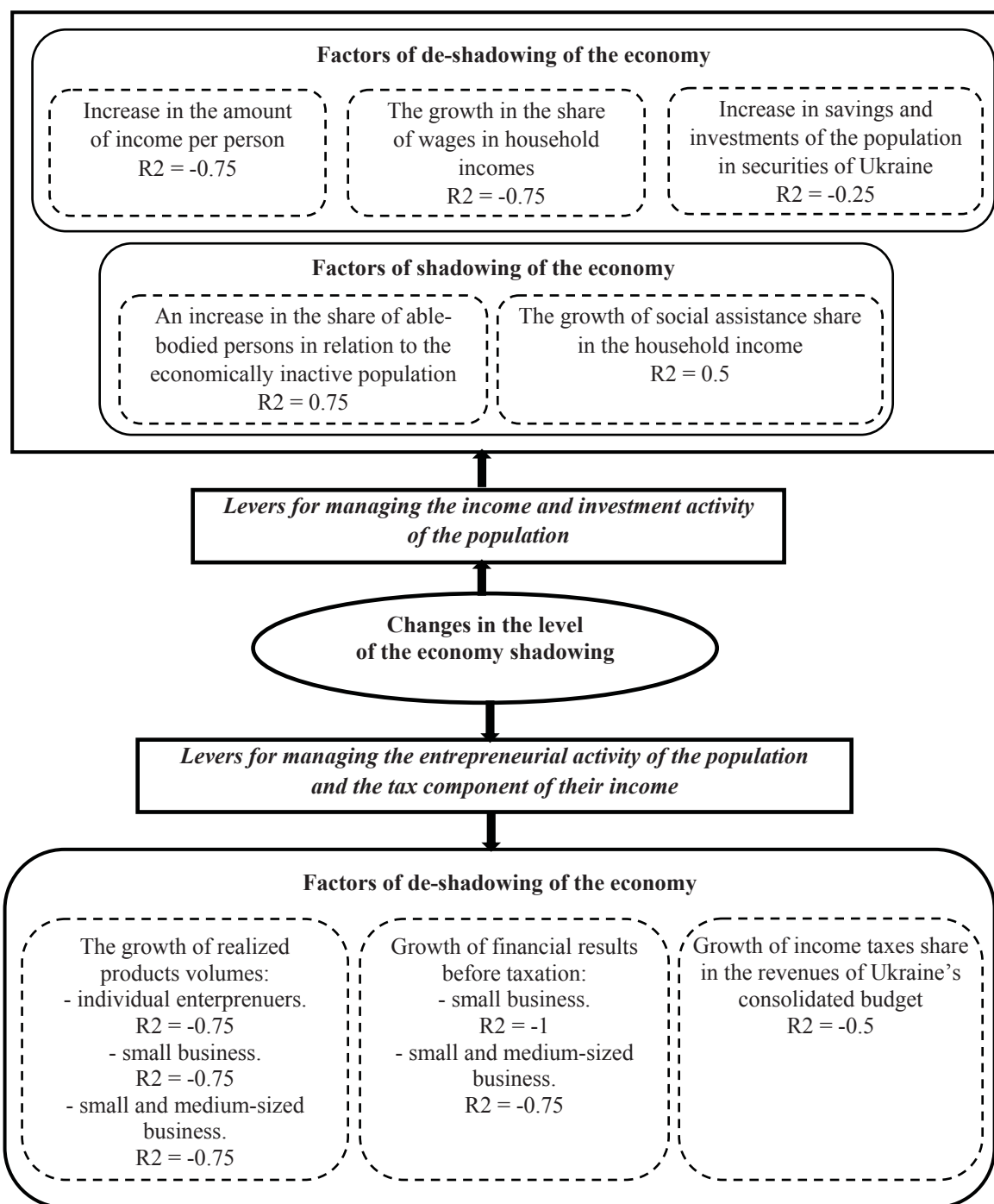


Fig. 9. Factors of shadowing and de-shadowing of Ukraine's economy

Source. Developed by the authors.

Thus, the factors of de-shadowing of the economy in the field of entrepreneurial activity of the population and the tax component of their income are the growth of sales of individual entrepreneurs, small and medium businesses, growth of financial results before taxation of small and medium businesses and the share of income taxes in the budget of Ukraine.

Regarding the sphere of income and their economic and investment activity, the shadowing is deepened by the following indicators: an increase in the share of able-bodied persons in relation to the economically inactive population; the growth of social assistance share in the household income. Factors of de-shadowing in this area are: increase in the amount of income per person, the growth in the share of wages in household incomes and increase in savings and investments of the population in securities of Ukraine.

Given the close connection between certain factors and the level of the underground economy, it could be said that in Ukraine, first of all, it is necessary to implement economic regulation measures, which are presented below (*Table 8*).

Table 8

Measures for regulating the analyzed factor indicators in order to reduce the level of the shadow economy

Indicators	Direction of the change	Measures
Increase in disposable income per capita	↑	Raising wages, promoting investment activity, economic development in general
Change in the share of wages in household incomes	↑	Rising minimum wages, balancing the highest and lowest wages in the country, raising living standards in general
Changing the share of social assistance in income	↓	Increasing the minimum wage of able-bodied people, creating additional jobs for people with disabilities
Changing the share of the working population among the economically inactive population	↓	Creating additional jobs, intensified activities of the employment centers, trainings for the desperate in search of work, encouragement to employment
Increase in cash deposits and savings in securities	↑	Stimulating the population to investment activity, ensuring transparency of the stock market in Ukraine, open access to it for all citizens of the country
Change in the share of income taxes in the consolidated budget revenues	↑	Legalization of income, wage growth, differentiation of tax rates, reduction of tax pressure on income, introduction of incentive benefits
Change in sales volume and financial result before taxation of small and medium-sized business	↑	Incentive benefits for small and medium-sized business development, tax holidays for start-ups with criteria adequate to economic realities, simplification of the business registration and accounting procedure, strengthening efforts for advising potential entrepreneurs, providing cheap loans to start and expand a business

Source. Developed by the authors.

The synergistic effect of the above indicated measures application will reduce the level of the black economy in Ukraine.

After all, small businesses occupy an important place in a market economy, they can resist monopolization, and as a consequence balance prices for goods and services. Small businesses provide a wide range of services and provide the market with a variety of goods, they are able to balance the interests of different market participants. In addition, such enterprises attract a large number of young workers, including socially vulnerable groups. The state tax policy on small business needs to be more flexible.

The situation in the sphere of small business and the results of our research as to the influence of small enterprises on the change of the underground economy level give all the grounds to emphasize the necessity of changing the approaches towards regulation of the small business sphere in Ukraine with clearly defined steps to overcome the crisis of small business development. First of all, regulatory reforms aimed at changes in the system of state business regulation are needed. Such system should be fully transparent, efficient, consistent, stable and focused on ensuring the interests of small business and its consumers. Secondly, it is necessary to remove obstacles to the development of small business, significantly reducing the financial and time costs associated with legal operation. This is about the decrease of registration procedures, reduction of bureaucracy and state control (inspections) of small and medium-sized businesses. The third aspect of supporting the development of small business is to encourage commercial banks to lend to small businesses. To this end, the state should create a credit-guarantee institution, which would receive refinancing of the National Bank of Ukraine at a lower discount rate, financing from budgets of various levels, provided that these financial resources are directed to lending to small and medium-sized businesses. It is also necessary to intensify the processes of insurance legislation

implementation similar to the EU countries to improve the investment climate and insurance of investment risks, which will reduce the risks for small business in Ukraine.

The combination of these blocks of reforms will improve the situation in the social sphere, in the investment sphere, and in the revenue system of the consolidated budget of Ukraine. After all, increasing the financial security of the population and improving the financial situation of small and medium-sized enterprises will reduce social benefits in the structure of household income and increase their investment capacity, as well as increase budget revenues of corporate income tax, single tax and personal income tax.

Conclusion. Thus, the results of the study identified main financial levers for managing income and investment activity of citizens, which can be used to de-shadow financial and economic processes in the country. An analysis of the relationships between indicators that characterize the income of the population, its investment and economic activity and the level of the Ukrainian underground economy. The Fechner correlation coefficient revealed a direct relationship between the change in the share of social assistance in the household income (the correlation coefficient is +0,5), share of the working population (the correlation coefficient is +0,75) and the change in the level of black economy. There is an inverse relationship between changes in personal income (the correlation coefficient is -0,75), the share of wages in household incomes (the correlation coefficient is -0,75), savings and investments in securities (the correlation coefficient is -0,25), the income taxes share in the revenues of Ukraine's consolidated budget (the correlation coefficient is -0,5) and changes in the level of shadowing. Among the indicators of entrepreneurial activity of the population, the factors of de-shadowing (there is a close inverse relationship with the change in the underground economy) are changes in pre-tax financial results (for small business — functional inverse relationship and for small and medium-sized business — the correlation coefficient is -0,75) and volumes of sales small business and medium-sized business (the correlation coefficient is -0,75).

To minimize the risk of the national economy shadowing, state regulators should pay special attention to the financial levers of income management, investment and economic activity of Ukraine's population, taking into account the correlations between the researched indicators.

In general, taking into consideration the results of correlation analysis based on the Fechner correlation coefficients calculation for the individual indicators of household income and the population's economic and investment activity and small and medium-sized businesses activity with the level of the black economy, it can be argued that in Ukraine governmental reforms should be aimed at raising living standards, the basis of which are the level and structure of the household income and development of small and medium-sized businesses. Thus, the growth of wages level and its share in the household income, disposable income per capita in general will have a positive impact on reducing the shadow household income. Stimulating employment, in particular formal employment, also helps to reduce the underground economy.

Along with ensuring the growth of household incomes, the government of Ukraine should actively implement measures to stimulate the development of small and medium-sized businesses, which will create additional jobs and contribute to the growth of incomes.

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Статтю рекомендовано до друку 30.04.2021

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The article is recommended for printing 30.04.2021

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Mayovets Ya.