

UDC 336.27

JEL: G33, G38, H0

## STATE REGULATION OF BANKRUPTCY RELATIONS IN THE NATIONAL ECONOMY

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**Received:** September, 2019

**Accepted:** December, 2019

DOI:10.31520/2616-7107/2019.3.4-3

**Introduction** The deepening crisis in numerous business entities of various sizes is due to macroeconomic and domestic political instability, complicated by the consumer credit crisis, as well as tax and administrative pressure. Therefore, the acute problem of bankruptcy of business entities of different sizes and the need to regulate this issue at the state level. Unprofitable business entities of various sizes cause negative consequences for the domestic economy.

**Aim and tasks.** The purpose of the work is to study state regulation of relations in the field of bankruptcy in the economy of Ukraine.

**Results.** The factors, internal and external, preceding the bankruptcy of economic entities. Thus, the external preconditions of bankruptcy are international, economic, political, demographic and others. Internal prerequisites include economic, technical, technological, social and others. The characteristic and gradation criteria of business entities in accordance with legislative acts of Ukraine are presented. It was revealed that the proportion of sales of micro-enterprises is unequal to their share in the total number of enterprises, indicating their negligible contribution to the development of the national economy. According to the results of empirical studies, it was found that during the analyzed period the share of unprofitable enterprises of different sizes is at least a 25%. Such a large number entails not only low financial stability, insolvency and efficiency of business entities themselves, but also inhibits the process of economic growth of the whole country. The application of the method of multivariate discriminant analysis will allow us to draw a conclusion about the financial condition with assigning it a class in accordance with the values of the integral indicator and taking into account the probability of non-fulfillment of obligations, that is, to identify the presence of an unprofitable enterprise and the likelihood of bankruptcy.

**Conclusions.** So, an analysis of the criteria for graduation of business entities made it possible to establish the difference between the administrative and accounting interpretation of the criteria for the attitude of enterprises to various sizes. The dynamics of structural statistics indicators of domestic business entities were monitored, suggesting that individual entrepreneurs make an insignificant contribution to the development of the national economy. Since a quarter of business entities still remain unprofitable, it is necessary to take preventive measures to prevent the loss of solvency by enterprises, one of which is to identify the existence of an unprofitable enterprise and the likelihood of bankruptcy.

**Key words:** bankruptcy, microenterprises, small enterprises, medium enterprises, large enterprises.

УДК 336.27  
JEL: G33, G38, H0

## ДЕРЖАВНЕ РЕГУЛЮВАННЯ ВІДНОСИН У СФЕРІ БАНКРУТСТВА В НАЦІОНАЛЬНІЙ ЕКОНОМІЦІ

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Отримано: Вересень, 2019

Прийнято: Грудень, 2019

DOI:10.31520/2616-7107/2019.3.4-3

**Вступ.** Поглиблення кризових явищ на численних суб'єктах підприємництва різного розміру зумовлено макроекономічною та внутрішньою політичною нестабільністю, ускладненою кризою споживчого кредитування, а також податкового і адміністративного тиску. Тому гостро постає проблема банкрутства суб'єктів підприємництва різного розміру і необхідність на державному рівні регулювання банкрутства, що спричиняє негативні наслідки для вітчизняної економіки.

**Мета і завдання.** Мета роботи полягає у дослідженні банкрутства в економіці України.

**Результати.** Встановлено фактори внутрішнього та зовнішнього характеру, що передують банкрутству суб'єктів господарської діяльності. Представлено характеристику та критерії градації суб'єктів господарської діяльності відповідно до законодавчих актів України. Виявлено, що частка реалізованої продукції мікропідприємствами є нерівноцінною їх частці в загальній кількості підприємств, що свідчить про незначний вклад ними у розвиток національної економіки. За результатами емпіричних досліджень встановлено, що протягом аналізованого періоду частка збиткових підприємств різного розміру становить не менше 25%, що спричиняє не тільки низьку фінансову стійкість, неплатоспроможність та ефективність самих суб'єктів господарювання, а й гальмує процес економічного зростання всієї країни. Застосування методу багатфакторного дискримінантного аналізу дозволить зробити висновок про фінансовий стан із присвоєнням йому класу відповідно до значень інтегрального показника та з урахуванням ймовірності невиконання взятих зобов'язань, тобто виявити наявність збитковості підприємства та ймовірність настання банкрутства.

**Висновки.** Отже, аналіз критеріїв градації суб'єктів підприємницької діяльності дозволив встановити різницю між адміністративним та бухгалтерським тлумаченням критеріїв відношення підприємств до різних розмірів. Проведений моніторинг динаміки показників структурної статистики вітчизняних суб'єктів господарювання, дозволив зробити припущення, що фізичні особи-підприємці роблять незначний вклад у розвиток національної економіки. Оскільки чверть суб'єктів підприємництва все ще залишається збитковими необхідним є проведення превентивних заходів з метою недопущення втрати платоспроможності підприємствами та виявлення наявності збитковості та ймовірності настання банкрутства, що робить доцільним використання методу багатфакторного дискримінантного аналізу із визначенням інтегрального показника фінансового стану.

**Ключові слова:** банкрутство, мікропідприємства, малі підприємства, середні підприємства, великі підприємства.

**Introduction.** The deepening of the crisis phenomena in the activities of numerous business entities of various sizes is caused by macroeconomic instability, complicated by the internal political crisis and consumer credit crisis, as well as tax and administrative pressure. Therefore, there is an acute problem of bankruptcy of business entities of various sizes and the need to regulate this issue at the state level, since it is the institution of bankruptcy that is the traditional instrument of state regulation of the functioning of unprofitable and financially insolvent business entities in order to restore their solvency.

This is explained by the negative consequences that unprofitable business entities of various sizes cause, among which it is worth noting a decrease in the quality of products (work, services), an increase in the number of unemployed, a drop in the standard of living of the population, a decrease in tax revenues to the budget, and a reduction in the possibilities of innovative development of the domestic economy. That is why the question of determining the prerequisites for the emergence and legislative regulation of bankruptcy, as well as empirical studies of the state of unprofitability of domestic business entities in the national economy, remain extremely important in modern conditions.

**Analysis recent research and publications.** Bankruptcy as a general economic issue, the question of bankruptcy, the study of the formation and development of the system to prevent bankruptcy in the works reveal domestic and foreign scientists. In particular, Altman (1968) in his works explores financial ratios, conducts discriminant analysis and bankruptcy forecast [1]. Beaver et al. (2012) discloses the influence of the characteristics of financial statements on the prognostic ability of financial indicators to bankruptcy [2]. Patsuriia et al. (2018) study the state of the legal regulation of bankruptcy in accordance with the legislation of Ukraine [3]. Fauzi (2018) conducts research in Indonesia regarding insolvency of entities in bankruptcy [4]. Mihus et al. (2018) along with co-workers (is a developer of techniques of bankruptcy prediction and raiding as a tool and state monitoring of the state of the financial security of Ukraine [5].

Wieczorek-Kosmala, Błach, Trześciok, (2018) developed the theoretical and methodological foundations of the formation of the bankruptcy institution system as an instrument of state regulation of the national economy [6]. Despite the fairly large range of scientific developments of the described subjects, i.e. in modern conditions of development, not all aspects of this complex issue covered and justified, which is responsible for the purpose of work.

**Aim and tasks.** The purpose of the work is to study the state regulation of bankruptcy relations in the Ukrainian economy by: analyzing the criteria for graduation of business entities by size in accordance with the legislation of Ukraine; monitoring dynamics of indicators of structural statistics of business entities with a gradation in the size of enterprises; an analysis of the dynamics of changes in the share of enterprises that are unprofitable; determination of the legal regulation of bankruptcy issues in Ukraine; display characteristics of the methodological foundations for assessing the financial condition of business entities of different sizes.

**Results.** Under the conditions of macroeconomic and internal political instability, as well as tax and administrative pressure, bankruptcy problems that every enterprise may face are of particular importance. The prerequisites for this phenomenon are the combination and interaction of many factors of the internal and external environment of business entities. Thus, the external preconditions of bankruptcy include:

- economic (deteriorating economic situation in general, the crisis in the economy, reducing the purchasing power of the population, a significant level of inflation, the instability of the financial system, imperfect fiscal policy of the state, rising prices for resources, increased monopolization in the market, etc.);

- international (a low level of competitiveness of the country, increase of the competitiveness of foreign products on the domestic market because of the faster development of scientific and technological progress, the imperfect state policy in a foreign economy, unfavorable foreign economic situation on the country's goods and services);

- political (the instability of society in the field of politics, the loss of foreign sales markets, the transformation of export and import conditions, the impeccability of antitrust policy and other expressions of the regulatory function of the state);

- demographic (size and composition of society, the level of well-being and cultural level, to determine the constituent volume and structure of demand and effective demand of society on all types of goods and services).

Internal prerequisites include:

- economic (lack of working capital due to inefficient production and commercial activity or ineffective investment policy, significant level of cost of production (works, services), reduction of capital turnover, presence of high level of debt, financial insolvency)

- technical and technological (deterioration and obsolescence of equipment, technologies and production adjustment, low quality of material and technical supply, reduced efficiency of the use of production resources and capacities, low level of competitiveness of products (works, services), etc.);

- social (availability of fully or partially insolvent clients, lack of professional and highly qualified specialists, instability of psychological state employees, the use of inefficient management practices, low level of social development of the care team) [13].

Despite the fact that the bankruptcy of business entities is due to various external and internal factors, statistics of developed countries indicate a significant proportion of bankruptcies due to internal factors, unlike domestic business entities [14-15].

Ukrainian authorities, by analogy with the European countries set the regulations, as the defining parameters characterizing the collective identity of entrepreneurial activity subject size, using the average number of employees, assets balance sheets, the net income from the sale of goods (works, services) or the annual income from any activity, (Table 1), but today they are mainly of technical importance and are mainly used to correctly compare the state of development of business entities in different spheres of economic activity

in Ukraine with EU countries.

So, having analyzed the approaches to determining the criteria of business entities, it is important to monitor the dynamics of indicators of structural statistics of business entities, the results of which are presented in table. 2. The analysis is based on statistical data for 2010-2018. Analytical studies conducted on the basis of data from the State Statistical Service of Ukraine [9], which do not take into account the indicators of economic entities of the temporarily occupied territory of the Autonomous Republic of Crimea, the city of Sevastopol and part of the anti-terrorist operation zone, show the following.

In the structure of enterprises, the ratio of large, medium, small enterprises and individual entrepreneurs is the largest - 80.65% of the total number of business entities in 2018. At the same time, the volume of manufactured and sold products (goods, services) is only 7.63%, and the number of employees is 30.16%. Small enterprises, whose share in 2018 of the total number of business entities is 18.45% (of which 15.92% are microenterprises), sold 17.72% of products (goods, services), while the number of employees is 19.23% (of which 8.25% are micro-enterprise workers). For comparison, medium-sized enterprises sold 39.37% of the total volume of sold products (goods, services), while the number of employees was 32.16%, and their share in the total number of business entities was only 0.87%. Large enterprises employ 18.45% of the total number of employees, the share of the volume of products (goods, services) sold is 35.28%, while their share in the structure of the total number of business entities is only 0.02%.

Consequently, it can be assumed that the share of products (goods, services) sold by individual entrepreneurs (7.63%) is an unequal share of individual entrepreneurs (80.65%) in the total number of business entities, which indicates an insignificant contribution by them in the development of the national economy. That is, there are many inefficient small business organizations are not able to produce and implement competitive, high-tech products (goods and services), resulting in a narrowing of the innovation development capacity of the domestic economy.

**Table 1. Characteristics and gradation criteria of business entities for microenterprises, small, medium and large enterprises**

Size before acceptance	Legal act	Definition	Criteria		
			Assets balance sheets *	net income from sales of products (goods, works, services) *	average number of employees
micro enterprises (Subjects of small business)	Law of Ukraine	Enterprises whose indicators as of the date of preparation of the annual financial statements for the year preceding the reporting one meet at least two criteria	350,000 euros	at 700,000 euros	up to 10 people
	CCU	individuals registered in the manner prescribed by law as individuals - entrepreneurs; legal entities - business entities of any legal form and form of ownership	-	** does not exceed 2 million euros	does not exceed 10 people
small businesses (Small businesses)	Law of Ukraine	enterprises that do not meet the criteria of microenterprises and whose indicators as of the date of preparation of the annual financial statements for the year preceding the reporting one meet at least two criteria	up to 4 million euros	at 8,000,000 euros	up to 50 people
	CCU	individuals registered in the manner prescribed by law as individuals - entrepreneurs; legal entities - business entities of any legal form and form of ownership	-	** does not exceed 10,000,000 euros	does not exceed 50 people
Medium - sized enterprises (Subjects of medium business)	Law of Ukraine	Enterprises that do not meet the criteria for small enterprises and whose indicators as of the date of preparation of the annual financial statements for the year preceding the reporting one meet at least two criteria	to 20,000,000 euros	to 40,000,000 euros	up to 250 people
	CCU	Business entities that are not related to other types of entrepreneurial structures are medium-sized enterprises.	-	-	-
large enterprises (Subjects of large business)	Law of Ukraine	enterprises that do not meet the criteria for medium-sized enterprises and whose indicators as of the date of preparation of the annual financial statements for the year preceding the reporting period meet at least two criteria	more than 20,000,000 euros	more than 40,000,000 euros	more than 250 people
	CCU	legal entities - business entities of any legal form and form of ownership	-	exceeds 50,000,000 euros	exceeds 250 people

\* To determine compliance with the criteria set in euros, the official hryvnia exchange rate relative to foreign currencies (average for the period), calculated on the basis of the National Bank's rates, is set for the euro during the corresponding year.

\*\* Annual income from any activity

Source: compiled by the authors based on data [7-8].

The dynamics of changes in the share of unprofitable enterprises (Table 3) is also important for evaluating the activity of economic entities. Over the last three years, there has been a decrease in the share of unprofitable enterprises of various sizes compared to previous years. So, according to statistics, at the end of the analyzed period, the most unprofitable are microenterprises, whose share is 27.2% of the total number of these

enterprises, which is 15.9% less compared to the beginning of the analyzed period. The largest number of unprofitable enterprises during the analyzed period (Fig. 1) is observed in 2010, which is explained by the result of the global financial crisis. However, it should be noted that the financial crisis in 2013-2014, complicated by the political crisis and the crisis of consumer lending, as well as tax and administrative pressure, most affected the performance of large

enterprises and, to some extent, medium-sized enterprises and caused an increase in the number of unprofitable enterprises.

This, in turn, led to an increase in unemployment, an increase in the level of the shadow economy.

**Table 2. Dynamics of indicators of structural statistics of business entities with distribution by size of enterprises**

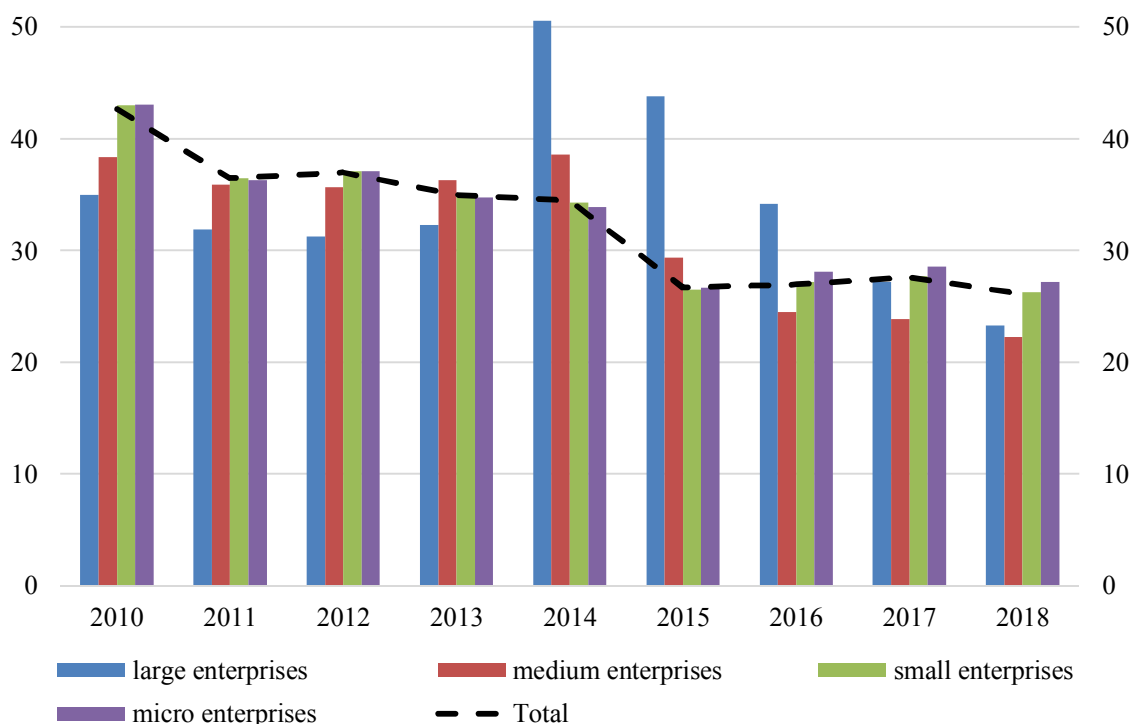
structural indicators	Years								
	2010	2011	2012	2013	2014	2015	2016	2017	2018
The number of business entities, units									
Total	2183928	1701620	1600127	1722070	1932161	1974318	1865530	1805059	1839593
large	586	659	698	659	497	423	383	399	446
medium	20983	20753	20189	18859	15906	15203	14832	14937	16057
small	357241	354283	344048	373809	324598	327814	291154	322920	339374
among which micro enterprises	300,445	295815	286461	318477	278922	284241	247695	278102	292772
Individuals-entrepreneurs	1805118	1325925	1235192	1328743	1591160	1630878	1559161	1466803	1483716
The number of employed workers, thousand people									
Total	10772.7	10164.5	9957.6	9729.1	8796.7	8180.0	8108.3	8141.0	8532.5
large	2,400.3	2449.0	2484.2	2383.7	1915.1	1708.6	1586.6	1560.9	1574.3
medium	3393.3	3252.6	3144.2	3012.1	2696.5	2604.7	2622.8	2593.1	2744.2
small	2164.6	2091.5	2051.3	2010.7	1686.9	1576.4	1591.7	1658.9	1641.0
among which micro enterprises	832.6	788.9	788.2	795.3	723.5	691.4	642.7	714.6	704.3
Individuals-entrepreneurs	2814.5	2371.4	2277.9	2322.6	2498.2	2290.3	2307.2	2328.1	2573.0
The volume of sales (goods and services) million \$									
Total	451743.52	525977.52	557965.57	542281.13	282822.49	231516.08	247389.76	296155.84	359964.95
large	176042.40	222262.01	220328.54	214861.92	110505.23	85547.19	87950.67	104375.01	126979.41
medium	175385.19	201210.04	221372.48	208002.65	109277.70	90362.69	98146.80	117447.24	141722.85
small	71375.10	76069.79	84155.31	83855.69	44709.26	39045.28	43300.77	52801.83	63786.97
among which micro enterprises	22847.27	23755.18	26604.68	27037.58	14632.24	12810.06	13305.35	17735.17	21656.31
Individuals-entrepreneurs	28940.83	26435.68	32109.25	35560.88	18330.30	16560.93	17991.51	21531.76	27475.72

Source: built by the authors based on data [9].

**Table 3. Dynamics of changes in the share of large, medium, small and micro enterprises, which are unprofitable in the Ukrainian economy**

year	Total	including			
		large enterprises	medium enterprises	small businesses	micro enterprises
2010	42.7	35.0	38.4	43.0	43.1
2011	36.5	31.9	35.9	36.5	36.3
2012	37.0	31.3	35.7	37.1	37.1
2013	35.0	32.3	36.3	35.0	34.8
2014	34.5	50.6	38.6	34.3	33.9
2015	26.7	43.8	29.4	26.5	26.7
2016	27.0	34.2	24.5	27.2	28.1
2017	27.6	27.2	23.9	27.7	28.6
2018	26.1	23.3	22.3	26.3	27.2

Source: generated by the authors based on data [9].



**Fig. 1. Trends in the proportion of large, medium, small and micro enterprises, which are unprofitable in the Ukrainian economy**

Source: built by the authors based on data [9].

At the same time, attention should be paid to the fact that the most unprofitable during the entire analyzed period (Table 4) are enterprises for the supply of electricity, gas and air conditioning (59.4-49%), water

supply, sewage and waste management (37,3%). The largest reduction in the number of unprofitable enterprises occurred in the field of transport, warehousing, postal and courier activities.

**Table 4. Changes in the share of enterprises, which are unprofitable, by economic activity, %**

Type of economic activity	year								
	2010	2011	2012	2013	2014	2015	2016	2017	2018
Agriculture, forestry and fisheries	30.8	17.1	21.8	20,2	15.9	11.6	12.3	13.8	13.8
Mining and quarrying	54.3	50.6	52.3	47.2	48.6	38.9	41.9	37.6	36.1
processing industry	41.0	37.3	37.5	35.8	35.6	25,2	25.1	26,4	24.8
Supply of electricity, gas and air conditioning	59,4	52.1	50,0	56.1	49.6	46.7	46.0	47.1	49.0
Water supply; sewage, waste management	53.7	50,0	47.3	44.9	48.3	36,4	36.5	37.7	37.3
Construction	46.1	41.2	41.1	38.6	38.1	29.2	29.6	29.0	27.6
Wholesale and retail trade; repair of motor vehicles and motorcycles	39.7	35,4	36.0	34.1	34,4	24.3	24.6	25.1	23.1
Transport, warehousing, postal and courier activities	47.2	38.6	39.9	37.9	38,4	29.5	28.9	28.9	26,4
Temporary accommodation and catering	43.6	40.7	42.6	41.6	41.5	28,4	28.6	30.7	28.9
Information and telecommunications	43.1	40.9	38.6	37.9	36.5	29.6	32,0	32,3	30,2
Financial and insurance activities	43,2	42.8	41.8	41.5	39.6	37.5	37.7	37,2	36.3
Real estate operations	51,2	46.9	45.7	43,2	44.7	39.9	40,4	38.8	36.8
Professional, scientific and technical activities	44.0	38.7	39,4	37.6	37.6	31,0	32.1	32.1	30,4
Administrative and support activities	45.9	40,4	41.3	36.8	38.3	31.3	31.1	32,3	30.3
Education	37.1	33.0	32.9	31,2	34.5	29.3	33.6	35,4	30.8
Health and social assistance	41.1	40.5	38.8	36.8	36.7	31.1	31,2	35.8	31.6
Arts, sports, entertainment and recreation	50.7	45.9	47.5	43.7	45.4	37.7	39.0	39.7	36.9
The provision of other types of services	39.3	35,2	37.7	33.1	35,4	28.1	28.1	32,4	28.9

Source: generated by the authors based on data [9].

Thus, according to the results of empirical studies, it was found that during the analyzed period the share of unprofitable business entities is at least a quarter. Such a large number entails not only low financial stability, insolvency and efficiency of business entities themselves, but also inhibits the process of economic growth of the whole country [10]. Despite the fact that in recent years the number of bankruptcies of enterprises in Ukraine has decreased, a large percentage of liquidation of enterprises remains, therefore, the institution of bankruptcy as an instrument of crisis management requires additional study.

Currently, Ukraine has a number of laws and codes governing the bankruptcy system, but the main one is the Ukrainian Bankruptcy Code [11].

The legislation provides the following measures to restore the solvency of the debtor as [11] restructuring of the enterprise; reprofile of the production; the closure of unprofitable industries; deferment and installment or forgiveness of a debt or part thereof; implementation of the debtor's obligations by third parties; reimbursement of creditors' claims in another way, not contradicting their Code [11]; liquidation of receivables; debtor assets restructuring in harmony with the demands of the Code [11]; sale of part of the debtor's property; fulfillment of obligations of the debtor by the owner of the debtor and his responsibility for failure to fulfill the obligations undertaken;

alienation of property and repayment of creditors' claims by replacing assets; the dismissal of debtor employees who cannot be involved in the implementation of the rehabilitation plan; obtaining a loan for the payment of severance pay to employees of the debtor is released according to the rehabilitation plan, which is reimbursed in harmony with the demands of the Code [11] out of turn due to the sale of the property of the debtor; obtaining borrowings, the purchase of goods on credit; other measures to restore the solvency of the debtor.

However, in order to prevent the loss of solvency, enterprises need to take preventive measures, which include the ongoing monitoring of financial stability, solvency, financial condition and the like. For example, the assessment of the financial condition of the company can be carried out using the method of multivariate discriminant analysis [12], which is used by the Ministry of Finance to assess the financial condition of the beneficiary and determine the type and collateral for servicing and repayment of the loan, which is planned to be provided from the funds of the international financial organizations.

The methodological basis for assessing the financial condition of the beneficiary, who prepares reports in accordance with P (C) BU, is carried out by assigning him a class depending on the value of the integrated indicator of the financial condition, the basic algorithm of which is [8]:

$$Z = a_1 \cdot K_1 + a_2 \cdot K_2 + a_3 \cdot K_3 + a_4 \cdot K_4 + a_5 \cdot K_5 + a_n \cdot K_n - a_0, \quad (1)$$

where  $Z$  – is the integral indicator of the financial condition of the beneficiary;

$K_1, K_2, \dots, K_n$  – financial ratios determined on the basis of the financial statements of the beneficiary;

$a_1, a_2, \dots, a_n$  – the parameters of the discriminant model, which are determined taking into account the importance and the degree of financial ratios;

$a_0$  – is a free member of the discriminant model.

The application of the method of multivariate discriminant analysis will allow us to draw a conclusion about the quality of the financial condition with assigning it to the class according to the interpretation and values of the integral indicator of the financial condition and taking into account the probability of default, that is, to identify the presence of an

unprofitable enterprise and the likelihood of bankruptcy.

**Conclusions.** So, an analysis of the criteria for the distribution of business entities into microenterprises, small, medium and large enterprises made it possible to establish the difference between the administrative and accounting interpretation of the criteria for the attitude of enterprises of various sizes. The dynamics of structural statistics indicators of domestic business entities was also monitored, on the basis of which it can be assumed that the share of products (goods, services) sold by individual entrepreneurs (7.63%) is an unequal share of individual entrepreneurs (80.65%) in the total number of business entities, which indicates their slight contribution to the development of the national economy.



This indicates that there is a significant amount of inefficient small business organizations, which are not able to produce and implement competitive, high-tech products (goods and services), resulting in narrowing of the innovation development capacity of the domestic economy. The dynamics of change in the share of unprofitable enterprises is also important for evaluating the activity of domestic economic entities. Thus, over the last three years, there has been a decrease in the share of unprofitable enterprises of various sizes compared with the beginning of the studied period. It is determined that the financial crisis in 2013-2014, is complicated by the political crisis and consumer credit crisis, as well as tax

and administrative burden, most likely influenced the results of the large companies that, in turn, led to increase in the number of unprofitable enterprises and how the consequence led to increase in unemployment, an increase in the level of the shadow economy and the like. Taking into account a significant part of unprofitable enterprises, it is necessary to take preventive measures to prevent the loss of solvency by enterprises, one of which is to identify the existence of an unprofitable enterprise and the likelihood of bankruptcy. Therefore, it is advisable to use the method of multivariate discriminant analysis with the definition of an integral indicator of financial condition.

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