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STAGFLATION SUBSTANTIATION AS AN INDICATION OF SYSTEMIC CRISIS IN THE FINANCIAL SECTOR OF THE ECONOMY

Висунуто припущення, що наявність сучасних епізодів стагфляції та їхня глибина залежать від рівня розвитку економіки. Проведене дослідження за групами країн (розвинені, країни, що розвиваються, країни пострадянського простору), яке базується на ідентифікації епізодів стагфляції та визначенні їхньої глибини. Встановлено, що стагфляція – це явище, яке характеризується уповільненням економічного зростання й високими темпами інфляції, та в сучасних умовах є більш притаманним для економік, що розвиваються та супроводжують трансформаційні зміни.

Ключові слова: системна криза, фінансова криза, високі темпи інфляції, ідентифікація епізодів стагфляції, розрив ВВП.

1. Introduction

Current trends in the development of the Ukrainian economy are conditioned by the need to overcome the negative impact of globalization and crisis phenomena on world and national financial markets. The devastating consequences of the global financial crisis cause an unfavorable external environment for the functioning of the real and financial sectors of the Ukrainian economy complicated by unstable socioeconomic and geopolitical factors; the negative impact of these factors leads to the deployment of inflationary processes and makes economic growth impossible. In this regard, the study of the processes of stagflation acquires particular urgency. In the economic literature, the phenomenon of stagflation, which took place in developed economies in 1970–1980, was actively discussed. However, the modern recession to a certain extent restored the interest of scientists to high inflation against the backdrop of a slowdown in economic growth. However, it is considered that the issue of assessing and regulating stagflation is more relevant for developing and so-called transitive economies. In other words, for the economies of relatively recently experienced episodes of a transformational systemic crisis, but not to absorb the consequences of such crises in full. In this regard, it should be noted that the quantitative indicators for the systemic transformation crisis in the economic literature are not determined, given their complexity and uniqueness for national economies. Identifying the presence of an episode of a systemic transformation crisis can be done using the stagflation indicator.

2. The object of research and its technological audit

The object of research is the processes of identifying the stagflation phenomenon in different types of economies: developed; developing countries; transitive and in the countries of the so-called post-Soviet space. It should be added that stagflation as a phenomenon means low economic growth, and high inflation rates [1]. At the same time,

unemployment is often defined as the third constituent element of stagflation [2].

3. The aim and objectives of research

The aim of research is substantiation of the scientific hypothesis that stagflation in modern economies is the main sign of a systemic crisis.

To achieve this aim, it is necessary to perform the following tasks objectives:

1. To define the notion of a systemic crisis.
2. To identify stagflation episodes.
3. To substantiate methodological approaches to determining the depth of episodes of stagflation.
4. To characterize the causes and specifics of episodes of stagflation in the economy of Ukraine.

4. Research of existing solutions of the problem

Studies [3–5] are devoted to the issues of financial and systemic crises in the economy. Scientists define the concepts of «systemic crisis», «financial crisis», «systemic financial crisis», determine their causes and consequences. At the same time, the work does not define quantitative approaches to identifying episodes of a systemic crisis.

The problems of recognizing episodes of stagflation, its causes and regulatory policy developed in the period 1970–1980. Thus, in [6–8], the causes of stagflation in the world economy are determined. In the study [2, 9], special attention is paid to the contribution of monetary policy to the deployment of stagflation processes.

The world crisis of 2007–2008 to some extent restored the interest of scientists to study the phenomenon of stagflation. Scientists [1] substantiate the quantitative indicators for identifying episodes of stagflation, suggest a definition of its depth. At the same time, transitional economies suffer more from stagflation – a number of studies of central banks in Latin American countries deal specifically with the analysis of stagflation [10, 11].

Thus, it is possible to conclude that the issue of systemic crises and stagflation is considered by scientists separately. Therefore, the substantiation of the quantitative measurement of systemic crises is considered relevant and requires further scientific development.

5. Methods of research

To solve the problems in the study, the threshold method has been used for identifying episodes and determining the depth of stagflation. To assess the similarities and differences in the dynamics of stagflation processes among groups of countries methods of generalization and comparison have been applied. In addition, the research is based on such general scientific methods as: constructing graphs for visualization and demonstrating the visibility of the results; analysis and synthesis, logical generalization – in the formation of aim of research requires identifying episodes of stagflation by the groups of developed economies (Advanced Economies) and emerging countries (Emerging and Developing Economies). Conducting qualitative research requires the use of comparable data – the statistical information of the International Monetary Fund (annual data) will be use the work [12]. The study period covers 37 years: 1980–2017. Among the developed economies, episodes of stagflation were identified for 27 countries (Australia, Austria, Belgium, Canada, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Japan, Korea, Luxembourg, Malta, Netherlands, New Zealand, Norway, Portugal, Slovak Republic, Slovenia, Spain, Sweden, United States of America and Great Britain). It is worth noting that individual indicators for different countries are available for different periods, so a sample of 27 countries for the period 1980–2017 made 950 observations. This sample has all the necessary data – on GDP growth, inflation and output gap (GDP gap). For countries that are developing statistical information on GDP gap does not exist, which determines the further methodology of the study. Among the developing countries, episodes of stagflation were identified for 47 countries (Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan, Albania, Bosnia and Herzegovina, Croatia, Hungary, Kosovo, Romania, Serbia, Turkey, Argentina, Barbados, Bolivia, Brazil, Chile, China, Colombia, Costa Rica, Dominican Republic, Ecuador, Honduras, Indonesia, Lebanon, Madagascar, Malaysia, Mexico, Morocco, Peru, Philippines, Puerto Rico, Suriname, Syria, Thailand, Uruguay, Venezuela, Vietnam) in the period 1980–2017, the total sample is 1532 observations.

6. Research results

According to the research tasks, first of all, it is necessary to define the notion of a systemic crisis. Summing up the analysis of definitions and characteristics of systemic crises, the author of [3] notes that «manifestations of systemic crises in the economy have long gone beyond the economy itself, they are increasingly pressing on social systems (confidence in the future, employment and wages, perspectives), on the systems of psychological adaptation of man to the environment», and «systemic risks play an outstanding role in the onset of systemic crises».

But the authors of [4] consider the effect of infection, which causes the global nature of economic crises, and lead the following chain of crisis development: financial

liberalization → the beginning of the banking crisis → the collapse of the currency → the growth of inflation → the peak of the banking crisis (or default) → default on external/internal debt → exacerbation of inflationary and banking crises (in case of default).

At the same time, the author of [5] does not consider systemic crises in the context of systemic risk, but links them to a significant change in external and internal conditions under which the system is not able to function effectively; these are the so-called bifurcation crises. An example of such crises is the state of the economy of the post-Soviet countries: in terms of the scale of its consequences it can be compared with the Great Depression of 1929, however, it is specific in its essential features. Specificity of the systemic crisis for the countries of the post-Soviet space is conditioned by the transition from a centrally planned state economy to a market system of management. Such crises lead to an inefficient functioning of the institutional level of the system. It is these characteristics of the bifurcation system crisis and the absence of an effective economic policy that determine the vulnerability of the Ukrainian economy to internal and external shocks.

So, the systemic (bifurcational, transformational) crisis of the economy characterizes such a state of it, which is formed under the influence of external and internal shocks, is characterized by inefficient functioning of the system and indicates the transition of the system to a qualitatively new stage of development. To identify the presence of a systemic crisis, it is necessary to use indicators that indicate a disruption in the functioning of the entire economy. The best way to meet these criteria is stagflation, which reflects high inflation, the economic downturn and the unemployment rate.

It should be noted that there are different approaches to identifying periods of stagflation. Thus, the scientists in the study [1] prove the equations of the following form:

$$s_{it} = \begin{cases} 1, & \text{if } i_{it} > 2\% \text{ and } g_{it} < 1,2\%, \\ 0, & \text{in other cases,} \end{cases} \quad (1)$$

where s_{it} – episode of stagflation; i_{it} – inflation level in the country i for the period t ; g_{it} – GDP dynamics in the country i for the period t .

In other words, the episode of stagflation is fixed if the price level is above 1.02 (or 2 %), and the growth is below 1.012 (or 1.2 %). The authors substantiate the inflation rate by the European Central Bank's inflation targeting and research of scientists [13], although they note that in some countries the target inflation rate may be 2, % (the US Federal Reserve System and the Central Bank of Ireland). The rate of GDP growth is determined by the authors using the R. Solow residue method – GDP growth, which can't be explained by the growth of labor and capital factors [14]. It is worth noting that the level of GDP growth of 1.2 % was determined for 10 developed countries. Therefore, this approach is developed for developed economies and limits its use to developing countries, including Ukraine. Therefore, episodes for GDP dynamics of less than 1 and inflation above 5 % will be additionally assessed.

At the same time, as noted above, individual researchers attribute high levels of unemployment to signs of stagflation. An approach based on estimating the actual GDP

gap from the potential one allows to take this factor into account [2]:

$$s_{i,t} = \begin{cases} 1, & \text{if } g_{i,t} - \overline{g_{i,t}} < 0; \\ \Delta |g_{i,t} - \overline{g_{i,t}}| > \sigma_{\overline{g_{i,t}}}; \\ \Delta i_{i,t} - \overline{i_{i,t}} \leq 0; \\ \Delta i_{i,t} > 0; \\ 0, & \text{in other cases,} \end{cases} \quad (2)$$

where $\overline{g_{i,t}}$ – potential GDP; $\sigma_{\overline{g_{i,t}}}$ – a certain level of «normal» fluctuation of potential GDP; $\overline{i_{i,t}}$ – target inflation (target).

$$\overline{g_{i,t}} = g_{i,t} \cdot \frac{u_n}{u_f}, \quad (3)$$

where $g_{i,t}$ – the actual GDP level; u_n – so-called «normal» unemployment rate; u_f – the actual level of unemployment.

So, in this case, the period of stagflation is determined if the potential GDP exceeds the actual (essentially determined by the excess of unemployment above the normal level) and inflation is greater than the target value.

The results of the analysis on identification of episodes of stagflation in developed economies according to the approaches that are reflected in formulas 1 and 2 (accordingly, 1 approach and 2 approaches) are reflected in Fig. 1.

As the data in Fig. 1, developed countries experienced episodes of stagflation during the period 1979–1984 and during 1991–1993. Most episodes of stagflation in developed countries were in 1993, and the number of countries that suffered from stagflation in 2008 and 2012 exceeded the number in 1981. Concerning the data for individual countries, it is worth noting the following. The highest inflation against a background of GDP decline was typical for Korea in 1980. Most of the episodes of stagflation were felt by Greece. It should be noted that when the criteria are relaxed, the number of episodes of stagflation decreases (GDP reduction and inflation above 5%) in the last 20 years characterizes the activities of only 2 developed countries – Estonia 2008 and Greece 2010. However, one of these countries in the period 2010–2015 is on the verge or in default, and the economy has been a composite Soviet for a long time. This suggests the hypothesis of the relationship between stagflation and the transformation crisis, but the strengthening of evidence requires the evaluation of stagflation processes by other criteria and other groups of countries. The data in Fig. 1 reiterate the conclusions on reducing the number of episodes of stagflation in developed countries since 2000.

At the same time, it should be noted that since 2000, the sample of countries in comparison with 1980 has increased from 19 to 27 developed economies (according to the available data), which led to a decrease in the share of developed countries that suffered from stagflation. In other words, it is possible to say about the reduction in episodes of a combination of economic decline and inflation. However, the development of final conclusions requires, first, an assessment of stagflation processes in developing countries, and, secondly, a definition of their depth.

As noted above, for most developing countries, there is no data on the GDP gap. Therefore, for this group of countries, episodes of stagflation are determined only by the approach, which is reflected in formula 1, that is, depending on the dynamics of GDP and the annual rate of inflation (Fig. 2). Comparing the data in Fig. 1 and Fig. 2, it should be noted that the growth in the number of episodes of stagflation across all economies falls on the periods 1980–1985, 1990–1994 and 2008–2012. At the same time, in other periods, the share of developed countries experiencing episodes of stagflation is significantly lower than the share of transitive economies and such developing countries. The above is also confirmed for the period after 2013.

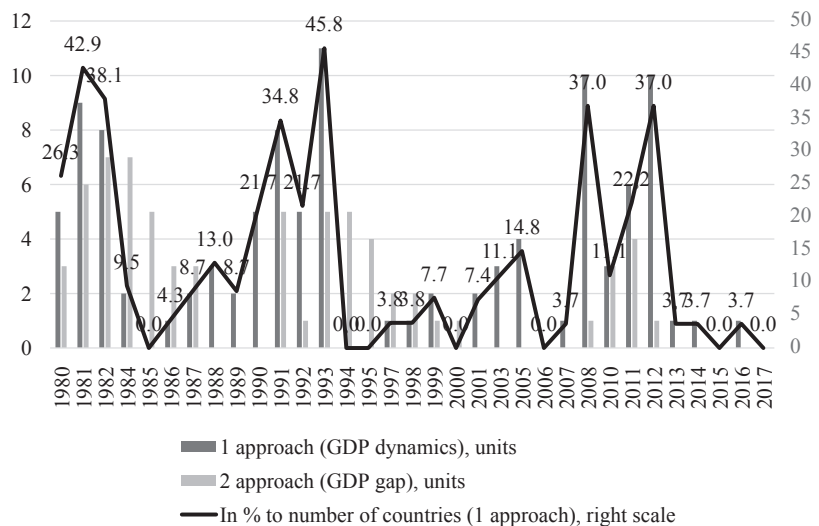


Fig. 1. The number of episodes of stagflation in developed countries, depending on the selected criteria (1980–2017)

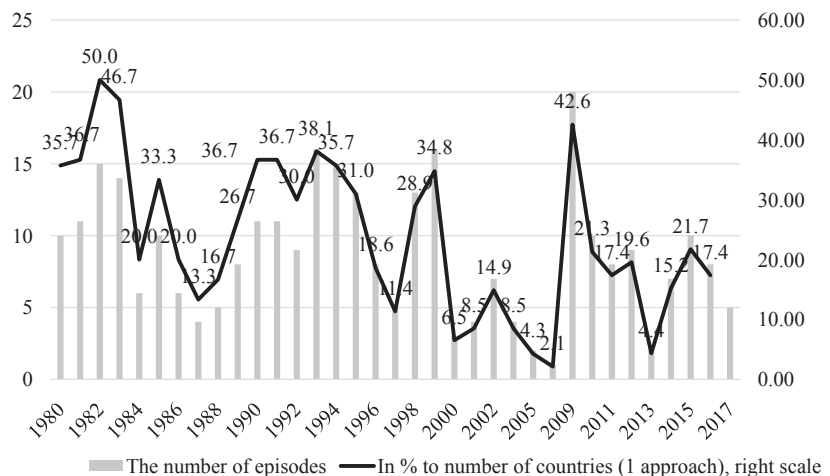


Fig. 2. The number of episodes of stagflation in developing countries, depending on the dynamics of gross domestic product and the consumer price index (1980–2017)

Thus, according to the research results, it is clear that for developed economies at the present stage of the development of the world economy, stagflation is not a widespread phenomenon. While developing, and now suffer from episodes slowing growth and inflation, which has a very negative impact on their level of socio-economic development and welfare. However, for a more accurate quantitative comparison, it is necessary to measure the depth of episodes of stagflation, which is proposed to be defined as follows:

$$Ds_{i,t} = \begin{cases} \max\{0; i_{i,t} - g_{i,t}\}, & \text{if } i_{i,t} > 0, \\ 0, & \text{in other cases.} \end{cases} \quad (4)$$

Estimating the depth of stagflation has several advantages over the identification of episodes:

- allows a quantitative comparison of the negative effects of stagflation;
- eliminates the main problem of identifying episodes of stagflation – the need to use different criteria depending on economic development (that is, it is possible to compare the results of the assessment to different groups of countries).

The results of calculations for the expression in formula (4) are shown in Fig. 3.

According to Fig. 3 it is obvious that the depth of episodes of stagflation in developing countries is significantly greater than in developed economies. For developed economies, the stagflation depth indicator did not exceed 35, while for transitive economies and those that develop in Fig. 3 is limited to 200, although the maximum values exceed 1000. At the same time, it is necessary to note the existence of common features of stagflation in individual groups of countries: deployment periods (early 1980s and 1990s, 1998–1999 and 2008–2010) and a gradual reduction in depth. The exception in these cases relates to a new surge of stagflation in individual developing economies, in 2015–2017. (The largest indicator of depth is Venezuela – 272 in 2016 and among the countries of the post-Soviet space – Ukraine). It should be noted that the significant depth of stagflation processes in developing countries is due primarily to high inflation rates. Given this, it can be concluded that when inflation hits a certain threshold, economic mechanisms are distorted, and growth is excluded.

The results of the analysis make it possible to identify the specific features of stagflation processes in developing economies. First, there are significantly worse indicators of economic dynamics: in developed countries, there were isolated cases of economic slowdown, below 10 %, in the case of transitive economies, much of the countries are characterized by a negative GDP dynamics.

Secondly, developing during the period under investigation received much more episodes of hyperinflation. The maximum value for the sample of developed countries did not exceed 35 %. However, for developing countries, when constructing the graph, the maximum value was limited to 100 %, although in the sample the maximum value was 108619 % (Kyrgyzstan, 1993). Thirdly, among the episodes of stagflation in developing countries, there is much more data covering the period 1998–2016, which is additional evidence of the assumption that the developing economies are primarily affected by modern stagflation. So, stagflation is a phenomenon that is characterized by a slowdown in economic growth and high inflation rates, and is more characteristic of developing countries in modern conditions.

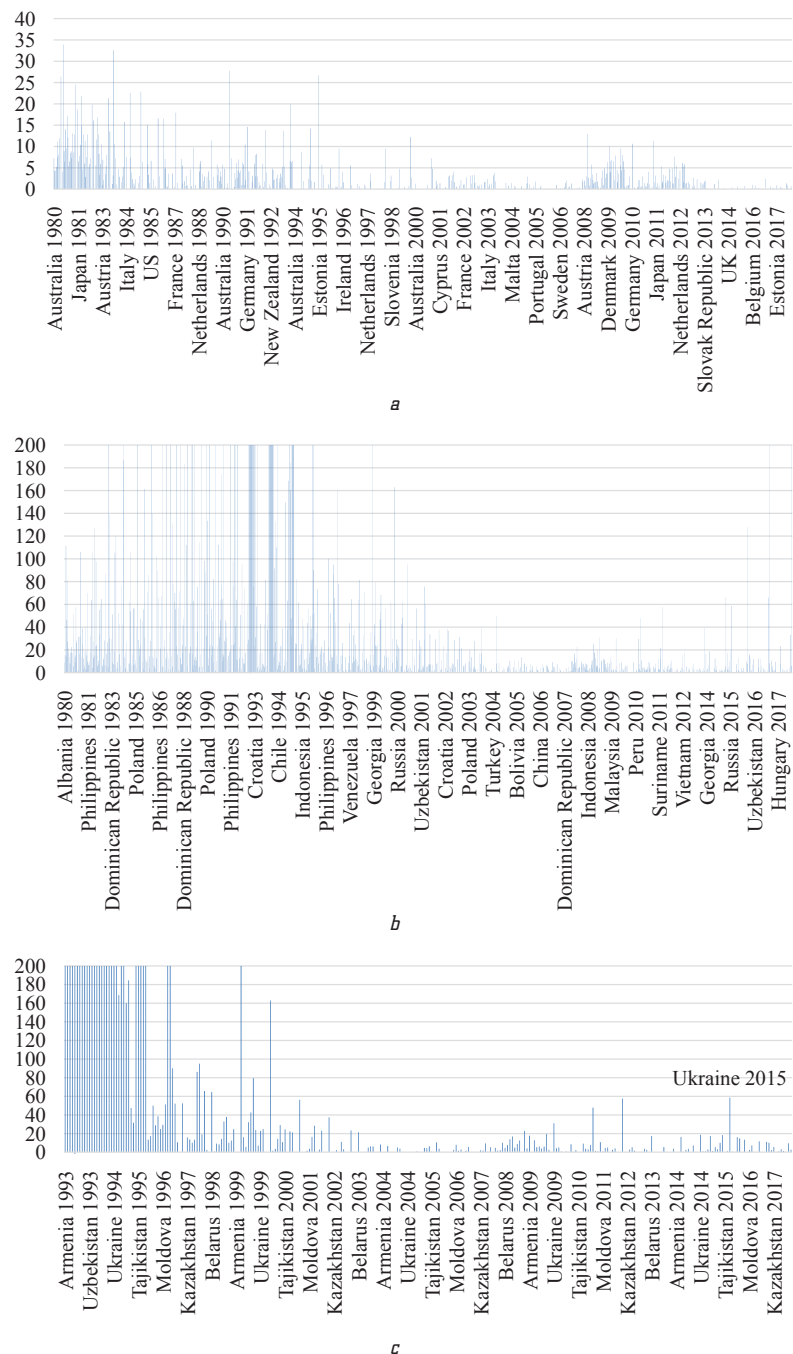


Fig. 3. Depth of stagflation episodes from the sample of the surveyed countries (1980–2017): a – developed countries; b – developing countries; c – including post-Soviet countries

To assess stagflation in the Ukrainian economy, two of the mentioned above approaches have been applied. First, the output gap is calculated, based on the normal unemployment rate of 7 and 9 % (the episodes are indicated by the corresponding figures) (Fig. 4, a) and the depth of episodes of stagflation, depending on the level of GDP and inflation (Fig. 4, b). It should be noted that acceptable levels of inflation and natural unemployment are used, according to studies conducted for emerging markets [15–17].

As the data in Fig. 4, in general, the identification of episodes of stagflation for the Ukrainian economy coincides with the 2 methods used in the study. Thus, the Ukrainian economy experienced episodes of stagflation of various depths during 1991–2000; 2005–2010 and 2014–2016 years.

The most profound and destructive for the economy were episodes of stagflation in 1991–1995. This period is associated with a transformational systemic crisis for the economy of all post-Soviet countries. As expected, such bifurcation crises are accompanied by significant deep episodes of stagflation (Fig. 3, c) and are characterized by a change in the economic and political system, the severance of economic ties and rising prices in foreign markets. At the present stage of economic development and in the countries of the post-Soviet space, the depth of episodes of stagflation is decreasing, but the Ukrainian economy with a value of more than 50 is characterized by insignificant economic growth against the background of too high inflation rates (only Latin America). As part of the preliminary analysis, this negative situation can be explained by the consequences of the transformation crisis of the 1990s, the consequences of the crisis of 2007–2008, which is exacerbated by external political and economic shocks. Among the causes of stagflation in world markets, scientists note the following:

- external shocks caused by a sharp rise in the prices of oil and other raw materials [6];
- the requirements of trade unions and the growth of wages [7, 8];
- restrictive monetary policy: in response to inflation, central banks have raised the level of interest rates, instead of curbing inflation led to an economic recession [9].

7. SWOT analysis of research results

Strengths. The strength of research is improvement of approaches to measuring the depth of episodes of stagflation and to prove that modern stagflation is inherent in transitive economies that are experiencing difficulties in overcoming the negative consequences of systemic transformation crises.

Weaknesses. The weak side is the difficulty in measuring episodes of stagflation due to different values of target inflation (targeting) and GDP gaps (the level of natural unemployment differs even within the groups of countries studied, and its further substantiation should be done).

Opportunities. Opportunities for further research are the justification of measures to overcome stagflation and the absorption of the consequences of the systemic transformation crisis in post-Soviet economies.

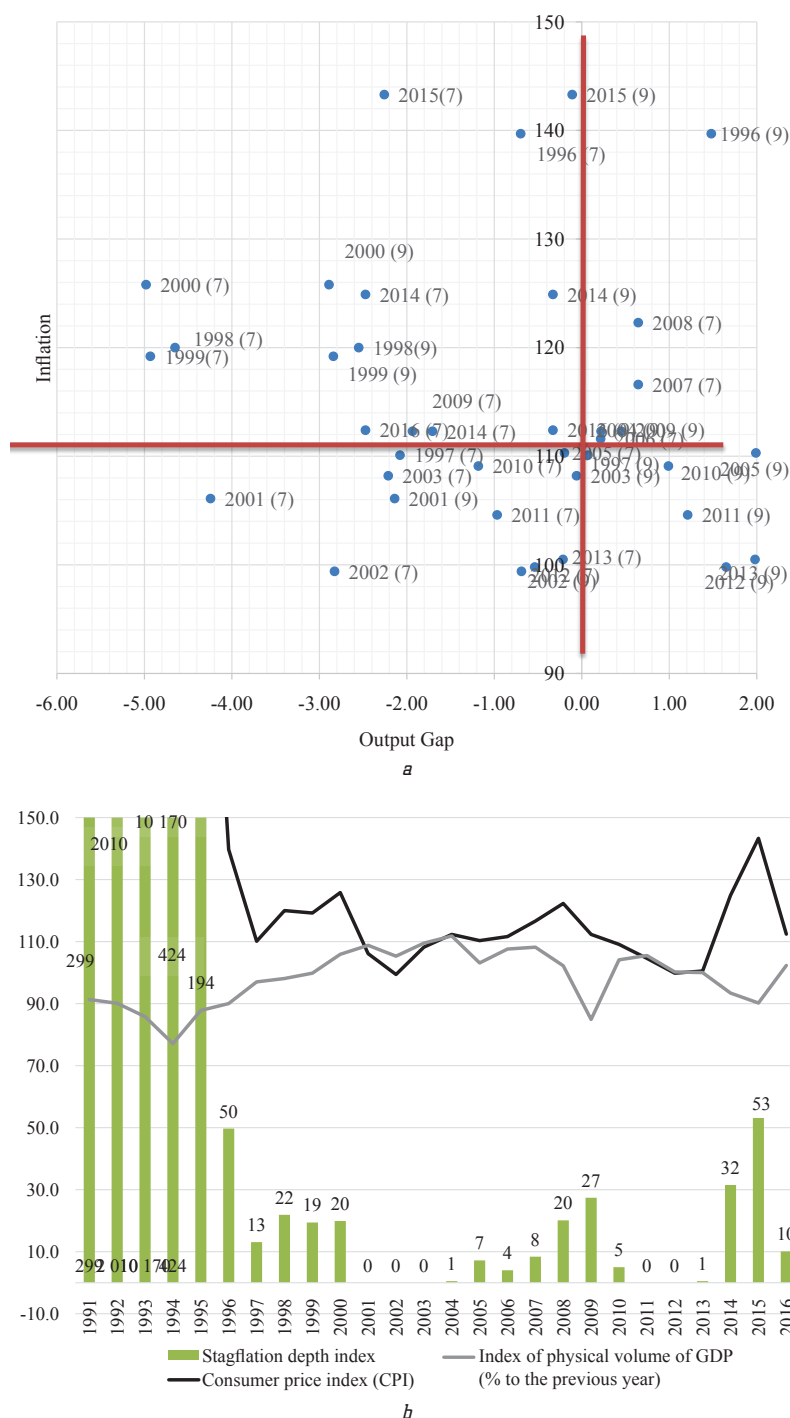


Fig. 4. GDP dynamics, GDP output gap, inflation and identification of episodes of stagflation in the economy of Ukraine: a – gross domestic product gap and consumer price index; b – the dynamics of the gross domestic product and the consumer price index and the depth of stagflation index (the author's own development)

Threats. The threat is the complexity in the formation of effective anti-crisis measures, due to the need to coordinate fiscal, monetary and sectoral policies.

8. Conclusions

1. The systemic (bifurcational, transformational) crisis of the economy characterizes such a state of it, which is formed under the influence of external and internal shocks, is characterized by inefficient operation of the system and indicates the transition of the system to a qualitatively new stage of development. Identification of the presence of a systemic crisis requires the use of indicators that reflect the disruption of the functioning of the entire economy. The best way to meet these criteria is stagflation, which is based on inflation, economic recession and unemployment.

2. Based on existing scientific developments, episodes of stagflation in developed economies, such as developing and transitive ones, have been identified. According to the results of such analysis, it is established that a significant number of economies suffered from stagflation in the periods in the early 80s, 90s of XX century and in 2007–2012. At the same time, compared to the developed ones, most of the transitive economies suffer from stagflation even after 2012. In addition, the rate of inflation for such economies is much higher. This indicates the need to assess the depth of episodes of stagflation. To solve this problem, the methodological approaches to determining the depth of episodes of stagflation are justified in the work – an integral indicator is proposed that takes into account the dynamics of consumer prices (inflation) and gross domestic product. The indicator is calculated by groups of countries for the period 1980–2017. It is established that in modern conditions stagflation is more inherent in developing ones. There is a connection between the presence of external shocks and anti-crisis policies and the depth of stagflation. The significant depth of stagflation processes in developing countries is due primarily to high inflation rates. In other words, when inflation hits a certain threshold value, economic mechanisms are distorted and growth is excluded.

3. Based on the results of measuring the depth of stagflation, the causes and specifics of its episodes in the economy of Ukraine have been characterized. The most profound and destructive for the economy were episodes of stagflation in 1991–1995 in the period of deployment of the transformational systemic crisis, which was characterized by a change in the economic and political system. The growth of inflation during this period was explained, first of all, by the disruption of economic ties and the growth of prices in foreign markets. Modern stagflation in Ukraine is less than in the early 90's, but similar or higher values are only in selected countries in Latin America. This situation is explained by the consequences of the transformation crisis of the 1990s, the consequences of the crisis of 2007–2008, which is exacerbated by external political and economic shocks.

4. The obtained results will make it possible to formulate the main directions for overcoming stagflation as the main feature of the systemic crisis in the Ukrainian economy. The solution of the absorption issue of negative consequences of systemic crises in Ukraine is in the sphere of ensuring sustainable economic growth: maintaining

export-oriented industries, eliminating structural imbalances in the economy, regulating the financial and credit market to eliminate imbalances in lending, reducing the level of external debt, ensuring innovative development, and so on.

The questions of studying foreign experience regarding the policy of overcoming stagflation have particular importance in carrying out further research. Given the causes of stagflation in the developed economies of the 1970–80's, it is necessary to prove a relationship between fiscal, monetary and sectoral

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ОБОСНОВАНИЕ СТАГФЛЯЦИИ КАК ПРИЗНАКА СИСТЕМОГО КРИЗИСА В ФИНАНСОВОМ СЕКТОРЕ ЭКОНОМИКИ

Выдвинуто предположение, что наличие современных эпизодов стагфляции и их глубина зависят от уровня развития экономики. Проведено исследование по группам стран (развитые, развивающиеся страны, страны постсоветского пространства), которое базируется на идентификации эпизодов

стагфляции и определении их глубины. Установлено, что стагфляция – это явление, которое характеризуется замедлением экономического роста и высокими темпами инфляции, и в современных условиях является более характерным для развивающихся экономик, которые сопровождают трансформационные изменения.

Ключевые слова: системный кризис, финансовый кризис, высокие темпы инфляции, идентификация эпизодов стагфляции, разрыв ВВП.

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EXPLORATION OF THE ROLE OF BUSINESS SCHOOLS IN THE DEVELOPMENT OF WORLD-CLASS RESEARCH UNIVERSITIES

Досліджено сфери впливу бізнес-шкіл на потенціал дослідницьких університетів світового класу. Проведено аналіз рейтингу 25 провідних бізнес-шкіл світу та охарактеризовано їх діяльність. Показано основні відмінності та спільні риси у підходах до організації навчання на основі використання графічного методу. Ідентифіковано та систематизовано закономірності функціонування бізнес-шкіл в структурі дослідницьких університетів.

Ключові слова: сфери впливу бізнес-шкіл на розвиток дослідницьких університетів, рейтинг бізнес-шкіл, закономірності функціонування бізнес-шкіл.

1. Introduction

Let's analyze the indicators of the ratio of higher education expenditures to research and development (R & D) [1]. Let's depict expenditures financed from state-run general university funds in Fig. 1. The trend is revealed in many countries of Europe and the world shows a significant underfunding of research activities and its development. Based on the current underfunding trends (Fig. 1), there

is an urgent need for research universities to find alternative sources of financing their research activities by providing educational services, offering the market that is able to pay competitive MBA (Master of Business Administration) programs. This way out of the situation is doomed to success, because today business administration and law occupies the first place in the world in terms of popularity in the educational sphere and makes up 23 % of the total volume of educational services.

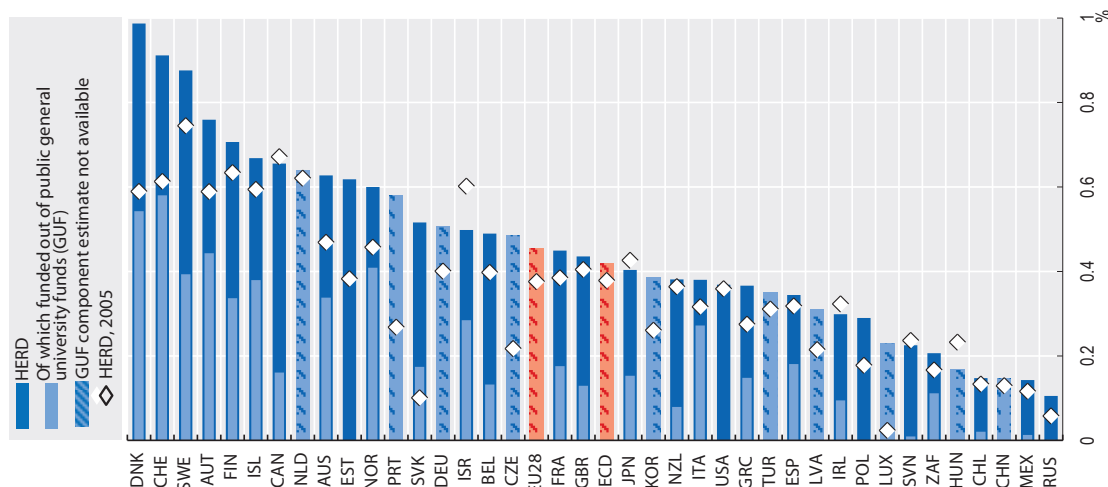


Fig. 1. Expenditures of higher education on research and development work in the world, 2015, % [1]