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## THEORY AND PRACTICE OF EARLY RECOGNITION OF CRISIS PROCESSES IN ECONOMY

***Problem statement***. As of today, various aspects of the problem of appearance and development of crisis phenomena in economy are a subject of study and discussion of scientists and experts in many countries of the world. Moreover, a special attention in modern studies and developments is paid to the issues of recognition of crisis processes in economy with the aim to warn about them.

***Analysis of recent studies and publications.*** Recent studies of foreign and domestic scientists with respect to early recognition of crisis processes in economy, such as: A. Rose, G. Kaminski, S. Reinhart, S. Lizondo, A. Gaitan, K. Rogoff, A. Miksyuk, D. Sornette, A. Tabalov and W. Mitchell testify to the fact that they focus mainly on two methodical approaches: economic-mathematical modelling and signalling. At the same time empirical calculations show that all of these approaches, in the form proposed by authors, failed to forecast approach of the world financial crisis of 2008-2009.

***Task setting.*** Financial crisis of 2008-2009 showed imperfection of existing methodical approaches to solution of the problem of early recognition of crisis processes both in the world economies in general and in their real sector. Taking into account urgency of this problem, ***the goal of this article*** is presentation of results of the study directed at analysis of the existing theory and practice of early recognition of crisis processes in economy.

***Presentation of the main material of the study.*** As analysis of works of domestic and foreign scientists [1-28] shows, four main methodical approaches to early recognition of crisis processes both in economy in general and in its individual sectors – consensus forecasts, respondent surveys, economic-mathematical modelling and signalling approach – are used in the world economic practice as of today (Figure 1).

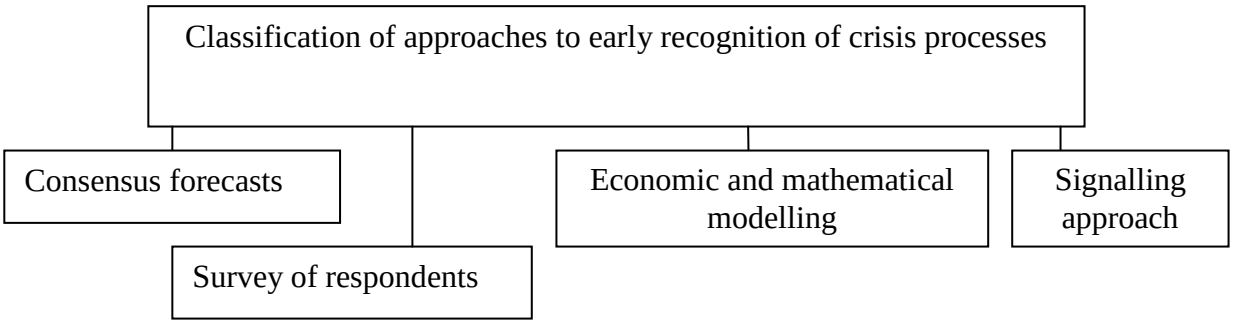


**Figure 1. Classification of approaches to early recognition of crisis processes in economy**
*developed by the author*

Let us consider approaches to early recognition of crisis processes in economy shown in Figure 1.

*Consensus forecast* is an average value of main forecast indicators of development of both the country economy in general and its individual sectors.

Consensus forecast is one of forecast methods widely used by many analytical forecast centres: 1) IMF, World Bank, European Commission and Organisation for Economic Co-operation and Development; 2) central banks of USA and Europe; 3) professional and entrepreneurial associations (for example, in USA - National Association for Business Economics and others); 4) companies that specialise in similar surveys (American – Forecasts Unlimited, BlueChipEconomicIndicators, British – Consensus Economics and others); 5) magazines and information agencies (The Economist, BusinessWeek, Bloomberg) and others; 6) consulting companies (for example, English – The Economist Intelligence Unit and others).

A wide spectrum of indicators is used when conducting this type of forecast. Moreover, experts that take part in the consensus forecast procedure use different instruments, have unequal access to in-demand information and have different understanding of what is going on in reality and what would take place in future in economy. In the result, different experts have quite different forecasts by the same indicators. Moreover, accuracy of forecasts of the same experts in different years also differs.

As an example, we can quote consensus forecasts by main macro-economic indicators of the Ukrainian economy, which are conducted since 2009 under the aegis of the Ministry of Economic Development of Ukraine [1].

This consensus forecast is based on consultations and discussions of experts that represent the following organisations: Ministry of Economic Development of Ukraine, Ministry of Finance of Ukraine, Institute for Economics and Forecasting of the National Academy of Sciences of Ukraine State Institution,

Research and Development Economic Institute, Institute for Economic Research and Policy Consulting, Institute of Evolutionary Economics, Taras Shevchenko National University of Kyiv, IMF Representative Office in Ukraine, International Centre for Policy Studies, CASE Ukraine Company, Troika Dialog Ukraine LLC, Concorde Capital Investment Bank, Raiffeisen Bank Aval, BTA Bank Public JSC, OTP Bank, Dragon Capital, The Bleyzer Foundation, Adamant Investments and FOREX CLUB.

Experts from the above listed organisations forecast absolute and relative values of 25 macro-economic indicators combined into 6 groups: real sector, inflation, external sector, exchange rate, consolidated budget, money and loans, and average wages of employees.

Analysis of dynamics of the published consensus forecasts by main socio-economic indicators of development of Ukraine for 2011 showed, in various moments of time, that results differ significantly depending on time of conducting calculations. Forecast assessments are more accurate by the end of a forecasted period.

Experts also assess risks for a forecasted period, in the consensus forecasts of the Ministry of Economic Development of Ukraine, by two criteria: probability of realisation of a specific risk and its influence upon the Ukrainian economy with the help of a relevant scale [1]. Based on the materials presented by experts and this scale, we calculate an integral assessment of risks as a result of assessments of a probability of realisation of a phenomenon and its influence upon the Ukrainian economy, weighted on a number of respondents. The maximum consensus assessment of external and internal risks has the integral mark 16. As the analysis of the published risk assessments for Ukraine shows, they differ significantly depending on time of conduct of calculations.

Main consensus forecasts of socio-economic development of Russia and Ukraine are presented in Table 1.

Table 1

**Main consensus forecasts of socio-economic development of Russia and Ukraine**

| Organisation | Forecast period | Experts | Forecast indicators |
|---|---|---|---|
| National Research University Development Center – Higher School of Economics [3] | Quarterly | Survey of more than 30 experts, including: Bank of America, JP Morgan Chase, Institute of Economics of the Russian Academy of Sciences, Lukoil and others | Forecast by 17 indicators of socio-economic development of Russia, including: GDP, volume of industrial production, average wages, balance of the Federal Budget and others |
| Economic Expert Group [4] | Annually | Survey of experts | By the same 17 indicators of socio-economic development of Russia as in [3] |
| RosBusinessConsulting Company [5] | Annually | Russian and foreign investment companies and brokerage houses, including: HSBC, The World Bank, Troika Dialog, Renaissance Capital and others | Forecast by 8 indicators of socio-economic development of Russia, including: GDP, industrial production, inflation, unemployment and others |
| Ministry of Economic Development and Trade of Ukraine [1] | Quarterly | Survey of 15 experts, including: Ministry of Economic Development and Trade of Ukraine, Institute for Economics and Forecasting of the National Academy of Sciences of Ukraine State Institution, Federation of Employers of Ukraine, IMF Representative Office, OTP Bank and others | Forecast by 7 blocks of indicators of socio-economic development of Ukraine, including: GDP, investments, net export, current account position and others |
| CASE Ukraine Company [6] | Quarterly | Survey of 7 experts, including: Dragon Capital, Alfa-Bank, Kinto and others | Forecast by 4 indicators: GDP, inflation, balance of payments current account, and UAH exchange rate |

*developed by the author*

*Respondent surveys* is a form of a statistical observation and assessment of various phenomena and processes set forth by respondents when filling in questionnaires or in any other way.

This instrument is widely used in many countries of the world for assessment of business activity of enterprises with the aim of early recognition of crisis processes both in the economy in general and in its individual sectors. Surveys are very widely used in the USA. Let’s check some of them.

Bureau of Labor Statistics of the Department of Labor of the USA calculates the unemployment level indicator on a monthly basis using results of survey of 60,000 American families and data from more than 400,000 companies and government institutions [2]. The following indicators are used during surveys: able-bodied citizens, unemployment level, number of working places, number of man hours, total workweek index, and wages.

New York economic research group named Conference Board conducts review of 51 newspapers published in major cities of the country and calculates the index based on volumes of advertisements of relevant matter [7]. According to index developers, it informs quite well about the forthcoming commencement of economic recession at an early stage. Index reaches its peak values several months before approach of the turning point in economy.

Institute for Social Research of the University of Michigan conducts assessment of relation of consumers to the establishing climate in the business sphere and state of personal finance and buying capacity twice a month [8]. The proposed index is the precursor of all existing surveys in the USA. Index of consumer expectations is based on results of calculation of two subsidiary indices: index of current economic state, which describes consumer opinion about the current state of their finance and nearest purchase plans, and index of consumer moods, designed to assess prospects of the financial state and purchase plans for the next year and nearest 5 years.

Ifo Institute of Economic Research conducts surveys on a monthly basis among 7,000 managers of leading German companies with the aim of assessment of the current and future economic climate [9]. Index of business environment by IFO and its two main components are calculated on the basis of the obtained responses: index of the current situation, which assesses the current state of business, and index of expectations, which reflects forecasts of respondents regarding development of business environment for the forthcoming six months. Index of expectations is of the highest interest out of the said three indicators.

Bank of Japan assesses the level of business activity in the country on the quarterly basis by means of survey of around 8,000 companies of various sizes and spheres of activity [10]. Respondents respond to seven questions that cover the most general topics: conditions of business environment, relation of demand and supply, income and current profit and others. The collected answers are calculated into the diffuse index, which is deduced through calculation of those respondents who gave an optimistic response.

The National Institute of Statistics and Economic Studies of France assesses the level of entrepreneurial trust (business activity) of leading enterprises of the country through surveying their leaders on a monthly basis [18]. Moreover, assessment is conducted by 8 key issues: output of products, demand, commodity stock, finished products and others. Calculation of the summary indicator is conducted through subtraction of the share of those who negatively responded to the questionnaire questions (“reduces”, “below the norm” or “weak”) from the share of those who were more optimistic in their judgements (“grows”, “above the norm” or “high”).

Table 2 shows main surveys with the help of which the level of business activity in the leading countries of the world is assessed.

Table 2

**Main surveys with the help of which the level of business activity in the leading countries of the world is assessed**

| Organisation | Forecast periodicity | Experts | Forecast indicators |
|---|---|---|---|
| Bureau of Labor Statistics, Department of Labor (USA) [11] | Monthly | Survey of 60,000 American families and 400,000 companies and government institutions | Employment level in the country: able-bodied citizens, unemployment level, number of working places, number of man hours, total workweek index, wages |
| Conference Board Agency (USA)[7] | Monthly | Review of 51 newspapers published in major cities of the country | Advertisements of vacancies index |
| Bureau of Economic Analysis, Department of Commerce (USA) [12] | Monthly | Analysis of reports of various state departments and organisations | Personal income and expenditures of citizens |
| Census Bureau, Department of Commerce (USA) [13] | Monthly | Questionnaire survey of 5,000 major and minor retail firms around the country | Retail sales |
| Federal Reserve Board of Governors (USA) [14] | Monthly | Information from banks, financial companies, credit institutions and others | Consumer credit payables |
| Institute for Social Research, University of Michigan (USA) [8] | Twice a month | Survey of 500 respondents | Consumer expectations index |

| | | | |
|---|---|---|---|
| UBS Investment Bank and Gallup, Inc. (USA) [15] | Monthly | Survey of 800 families that have investment capital of not less than USD 10,000 | Investor optimism index |
| Census Bureau, Department of Commerce (USA) [16] | Monthly | Based on reports about durables orders in 89 branches of industry by data of 3,500 production enterprises | Durables orders |
| Census Bureau, Department of Labor (USA) [16] | Monthly | Phone survey and questionnaire mailing to construction companies in 19,000 settlements all over the country | Number of new construction areas and issue of construction permits |
| National Association of Realtors (USA) [17] | Monthly | Data of 400 exchanges | Sales of housing in the secondary real estate market |
| Bureau of Labor Statistics, Department of Labor (USA) [11] | Monthly | Phone survey of 23,000 various sales outlets in 87 towns and cities of the country regarding prices on 80,000 goods and services | Consumer price index |
| Ifo Institute for Economic Research (Germany) [9] | Monthly | Survey among 7,000 leading production companies of the country | Assessment of the current situation in the country |
| Federal Statistics Department (Germany) [19] | Monthly | Data on 400,000 types of products of 560 free-lance interviewers | Consumer price index |
| Bank of Japan [10] | Quarterly | Questionnaire mailing to 8,000 companies | Assessment of business activity in the country |
| National Institute of Statistics and Economic Studies (France) [18] | Monthly | Survey of managers of 4,000 French companies of various branches | Level of entrepreneurial trust (business activity) |

*developed by the author*

The National Bank of Ukraine conducts surveys of managers of Ukrainian enterprises regarding the current and future business activity of enterprises [19]. Enterprises of various sizes, types of economic activity, forms of ownership and intensity of external links and financial and economic state take part in surveys.

Surveys are conducted by such types of economic activity as: agriculture, industry (mining, processing and others), construction, wholesale and retail trade, etc. Current forecast qualitative values of the following indicators are used when studying business activity of enterprises: financial and economic state, remainders of finished products, investment expenditures for construction works, machinery and equipment, change of a number of employees, change of product prices, etc.

Table 3 presents results of surveys of enterprises (respondents) of Ukraine regarding their expectations with respect of changes of volumes of sales of goods (services) in 2013.

Table 3

**Expectations of respondents with respect of changes of volumes of sales of goods (services) at Ukrainian enterprises in 2013 [19]**

| Type of economic activity | % of responses | | | Balance of responses |
|---|---|---|---|---|
| | Increased | Unchanged | Decreased | |
| Agriculture | 46.6 | 40.7 | 12.7 | 33.9 |
| Industry | | | | |
| mining | 38.4 | 49.1 | 12.6 | 25.8 |
| processing | 42.2 | 48.9 | 8.9 | 33.3 |
| production and distribution | 39.4 | 47.8 | 12.8 | 26.5 |
| electric energy, gas and water | 28.0 | 58.0 | 14.0 | 14.0 |
| Construction | 22.4 | 59.7 | 17.9 | 4.5 |
| Wholesale and retail trade | 36.2 | 50.0 | 13.8 | 22.4 |
| Transport and communication | 33.3 | 53.5 | 13.2 | 20.1 |
| Other | 34.4 | 51.4 | 14.2 | 20.2 |
| Total economy | 36.6 | 49.9 | 13.5 | 23.2 |

State Statistics Service of Ukraine conducts study of business activity of enterprises in accordance with the approved methodological provisions [20]. Methodological provisions are formulated in accordance with recommendations stated in the Joint Harmonised EU Programme of Business and Consumer Surveys [21] and Business Tendency Surveys – a Handbook of Organisation of Economic Co-operation and Development [22]. Enterprises of various sizes, types of economic activity, forms of ownership and intensity of external links and financial and economic state take part in the survey. Survey is conducted by the following types of economic activity: industry, construction, retail trade, services, transport and agriculture. Enterprise survey indicators are grouped by the following classification features:

1) by question types: harmonised and national (permanent, special, and irregular special);
2) by information character: qualitative and quantitative;
3) by meter scale type (nominal, binary, serial, and metric);
4) by assessment goal (past, current, and forecast);
5) by assessment periodicity (quarterly, semi-annual, and annual).

One of the main approaches to forecasting approach of crisis processes in the world economies and branches of their real sector is the use of *economic and mathematical models*. For example, the Central Economic Mathematical Institute of the Russian Academy of Sciences developed a structural econometric model that consists of 6 simultaneous equations and that allows a quarterly forecast of the following exogenous indicators: Gross Domestic Product, Consumer Price Index, aggregate income of the population, final consumption, export, and import [23]. The shortcoming of the model lies in the fact that it does not take into account seasonality.

The model of the Center for Macroeconomic Analysis and Short-term Forecasting (Russia) consists of 3 blocks [24]:

Block 1: short-term monthly model of forecasting economic dynamics (model A). Time series, which the help of which trends and cycles are forecasted, lie in the foundation of the model.

Block 2: balance-econometric quarterly model of economic development for a medium-term period (model B), which contains around 90 econometric equations, 250 balance relations and more than 400 variables. Scenario forecasts are developed and input data for the next block are prepared with the help of the model.

Block 3: medium-term annual model of forecasting System of National Accounts (SNA) indicators (model C), in which basic macro-economic proportions are calculated: structure of final demand, structure of income, gross savings and investments.

Distinction of this model from many other lies in the fact that it checks results of model B with respect to their balance and also builds forecast balances of SNA.

Institute for National Economic Forecasting of the Russian Academy of Sciences developed a system, which consists of three models, for short-term, medium-term and long-term forecasting [25]. This system is based on the annual inter-branch model of Russian economy (RIM). RIM model includes 38 exogenous variables that are combined into the following blocks: final consumption and production; income; prices; budget-financial block; and income/expenditures of the population. This model allows forecasting such indicators as final consumption of households, final consumption of state and non-profit organisations; GDP; gain of reserves, employment etc.

QUMMIR model is a quarterly macro-economic model of the Russian economy, which contains 500 variables and around 100 regression equations. Main blocks of the model are the following: budget and state consumption; consumption of households; foreign trade; money and credit block; balance of payments; employment and labour. Main goal of the model is development of scenario forecast calculations for a short-term and medium-term (up to 5 years) perspective.

MANAMORU annual macro-economic model is a training and adjustment one and is used for training purposes and for adjustment of non-branch blocks of the RIM inter-branch model.

Gaidar Institute for Economic Policy uses the following 2 model complexes for forecast calculations: time series models for short-term forecasts and medium-term macro-economic model [26]. They conduct forecasts by 49 indicators for the period of 1-6 months with the help of time series models. Main blocks of forecast indicators are as follows: industrial production, external trade, indices of prices and tariffs, exchange rate, indicators of living standards of the population, etc. The second model complex is a medium-term macro-economic model of the Russian economy with the forecasting horizon – 2-2.5 years. They calculate forecast values of 9 indicators by the results of modelling: nominal GDP, tax receipts, Federal Budget, Federal Budget expenditures, surplus/deficit of the Federal Budget, etc.

The model has the following shortcomings;

- some equations have low stability of marks, which results in a necessity to adjust the model each quarter;
- the model lacks a block of calculation for individual sectors of economy or for individual types of industrial activity;
- the model has a low forecast capacity in the event of serious changes in economic policy and qualitative conditions of economic development.

Table 4 presents main forecast economic-mathematical models that are used in Russia when forecasting indicators of socio-economic development of the country.

Table 4

**Main economic and mathematical models used in Russia when forecasting indicators of socio-economic development of the country**

| Organisation | Forecast periodicity | Model description and forecast indicators |
|---|---|---|
| Central Economic Mathematical Institute of the Russian Academy of Sciences [23] | Quarterly | Structural econometric model consisting of 6 simultaneous equations. The following endogenous variables are forecasted: GDP, consumer price index, aggregate income of the population, final consumption, export, and import. |
| Center for Macroeconomic Analysis and Short-term Forecasting [24] | Monthly<br><br>Quarterly<br><br>Annually | The model consists of 3 blocks:<br>Block 1: short-term monthly model of monitoring and forecasting economic dynamics (model A). Trends and cycles of socio-economic indicators are forecasted with the help of time series.<br>Block 2: balance-econometric quarterly model for a medium-term period (model B). Contains about 90 econometric equations, 250 balance relations and more than 400 variables. Forecast scenario developments.<br>Block 3: medium-term annual model of forecasting SNA indicators (model C), which calculates main macro-economic proportions: structure of the final demand, final demand satisfying resources, structure of income, gross savings and investments. |
| Institute for National Economic Forecasting of the Russian Academy of Sciences [25] | Quarterly<br><br>Annually<br><br>Quarterly | System consists of three models built on the basis of the inter-branch model of Russian economy (RIM).<br>RIM model includes 38 exogenous variables and the following blocks: final consumption and production; income; prices; budget-financial block; and income/expenditures of the population.<br>QUMMIR model is a quarterly macro-economic model of the Russian economy, which contains more than 500 variables and around 100 regression equations. Main blocks: budget and state consumption; consumption of households; foreign trade; money and credit block; balance of payments; employment and labour. |
| Gaidar Institute for Economic Policy [26] | Monthly<br><br>Quarterly<br><br>Quarterly<br><br>Monthly | Complex of practical forecast calculations on the basis of the time series model.<br>Forecast values by 49 indicators for the period of 1-6 months.<br>Used models: time series models, structural econometric equations and models that include results of competitive surveys of enterprises.<br>Complex of average monthly macro-economic forecasting. Forecasting horizon – 2-2.5 years. It calculates 9 forecast values of indicators.<br>A set of leading indicators that characterise financial stability in the Russian Federation.<br>Industrial optimism index is a leading indicator that is calculated on the basis of enterprise surveys by the following indicators: assessment of demand and its change, inventory assessment and others. |

*developed by the author*

One of the popular methods of early recognition of crisis processes in economy is the use of the system of *leading indicators*.

The USA conduct regular monthly publications of relevant indicators since the end of 1960s. US Department of Commerce uses the following indicators for calculation of the composite leading indicator [27]: average workweek duration; primary applications for obtaining unemployment relief; new orders for delivery of consumer goods; stock market prices; contracts and orders for new machinery and equipment; housing construction licences; volume of wholesale trade; change of the portfolio of durables orders; change of prices for some types of raw materials; money offer; and index of consumer expectations.

US National Bureau of Economic Research applies the following three groups of indicators when forecasting crisis processes in the country economy: leading, lagging and coincident, which consist of the following indicators (Table 5).

Table 5

Cycle indicators by methods of US National Bureau of Economic Research

| Leading indicators | Lagging indicators | Coincident indicators |
|---|---|---|
| Working week duration<br>Number of new enterprises<br>Commencement of housing construction<br>Stock Market Index<br>Corporate profits<br>Change in money supply<br>Change of inventory | Number of long-term unemployed<br>Costs of new enterprises and costs of production<br>Specific costs of wages<br>Average interest rates of commercial banks | GDP<br>Unemployment level<br>Industrial production<br>Personal income<br>Producer prises<br>Official interest rates<br>Advertisement applications |

*developed by the author*

According to S. Smirnov, one or another indicator could be a leading one in the event it: evokes a change of the general economic dynamics through the change of demand and supply; reflects expectations of economic agents; reacts to changes of economic activity faster than the economy in general; and showed itself as such in other countries [26]. The same author argues that, from the practical point of view, the leading indicators should meet the following requirements: their fluctuations should have a cyclic character, however, there should not be sharp or unexplained leaps; series should be sufficiently reliable and comparable along the whole analysed period; and information should be renewed on-the-fly.

Statistics Department of the Organisation for Economic Co-operation and Development started to calculate leading indicators for member countries in 1980s [28]. Two different concepts are used in the world practice when building a system of leading indicators. The first one focuses on the direction of economic movement (up-down and growth-decline) and corresponds with the classical understanding of the business activity cycle. It is used in the USA for analysis of turning points. The second one is built on assessment of the rate of movement (faster-slower and acceleration-slowdown) and corresponds with understanding of the growth cycles. It is used in the Organisation for Economic Co-operation and Development for tracking transitions from the accelerated growth to slowdown and vice versa.

Both informal and formal methods are applied for dating turning points.

Informal approach is used in the USA by the Business Cycle Dating Committee of the National Bureau of Economic Research. There is no single indicator, the level or dynamics of which the National Bureau of Economic Research would orient at, that is why decisions about accurate dating of the regular peak or recess are made at its meetings on the basis of the qualitative analysis of all existing information.

Methods of the Organisation of Economic Co-operation and Development are based, on the contrary, on the idea of a reference indicator, which in practice is the index of industrial production. Peaks and recesses are identified namely for it and the whole system of leading indicators is built with respect to it.

The procedure of dating turning points, applied by the Organisation of Economic Co-operation and Development, has a rather formal character. It is based on comparison of actual values of the index of industrial production with trend values. The point, where the local maximum of the fact/trend relation is achieved, is considered to be a peak and the point of local minimum – a recess.

***Conclusions and further studies.*** The conducted analysis of early recognition of crisis processes in the real sector of economy, forecast assessments proposed by experts and actual results of socio-economic development of the countries of the world allowed, on the basis of various methodical approaches, drawing a conclusion about their imperfection, which is confirmed by unpreparedness of the countries of the world for the financial crisis of 2008-2009 and absence of relevant warning signals about its approach. Moreover, as the conducted analysis shows, only one out of four above described approaches, which are used in the world practice for recognition of crisis processes, is used in Ukraine.

The conducted analysis shows that the problem of recognition of crisis processes in the country economy should be solved on the basis of a signalling approach within the institutional direction, in particular, the market-statistical one of W. Mitchell, strengthening its theoretical justification.

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Pronoza P.V. THEORY AND PRACTICE OF EARLY RECOGNITION OF CRISIS PROCESSES IN ECONOMY

**Purpose.** The goal of the article is justification of the scientific problem of building the system of early recognition of crisis processes in the Ukrainian economy.

**Methodology of research.** Synergetic paradigm serves in the article as the general outlook structure of the scientific study. The following logical, general scientific, theoretical and empirical methods were used in the process of the study: comparisons, descriptions, groupings, logical inference – for detection of shortcomings of approaches, which exist in the economic theory and practice, to early recognition of crisis processes in the economy of the country, and classification – for classification of methodical approaches to early recognition of crisis processes in economy.

**Findings.** The article reveals shortcomings and advantages of existing methodical approaches to early recognition of crisis processes in the economy of the country. The article justifies a necessity of use of the signalling approach in economy for these purposes.

**Originality** lies in identification of theoretical grounds of building the system of early recognition of crisis processes in the Ukrainian economy on the basis of the signalling approach within the institutional direction, in particular, market-statistical institutionalism of Wesley Clair Mitchell.

**Practical value.** The obtained results serve as the theoretical ground for building the system of early recognition of crisis processes in economy in practical activity of Ukraine.

**Key words**: recognition, crisis, economy, signalling approach.