

# Investment Determinants Modeling for Territorial Development of Southern Ukraine: Institutional Quality and Economic Growth

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**Abstract:** Foreign direct investment plays an important role in the global economy. There is a huge competition among countries for their attraction, since they have a positive impact on the economy of the country that receives the investment. In addition to direct effects - an increase in GDP, budget revenues, and the decrease in unemployment - foreign direct investment also indirectly has a positive impact on the host country in the form of new knowledge, transfer of experience, dissemination of technology. This study is aimed at identifying and assessing the factors (determinants) that affect the inflow of foreign direct investment into the regions of Ukraine. The paper proposes the use of modern tools for monitoring macroeconomic indicators and the study of their non-stationary dynamics in the context of the implementation of investment policy based on the tools of phase and co integration analysis, which makes it possible to obtain a comprehensive assessment and analyze the stability of the macroeconomic dynamics of Ukraine in the context of increasing globalization transformations in the dynamics of territorial development, ongoing in the conditions of global crisis processes. The paper examined the factors that have a significant impact on the volume of foreign direct investment. To verify the hypotheses, an economic-mathematical model with fixed effects is proposed. In this paper, the author proposes an analysis of models of interaction between macroeconomic indicators. The phase trajectories of modeling allow us to conclude that at this stage of the development of the Ukrainian economy, there is a non-stationary and unstable dynamics, the trajectories are oscillatory-periodic or periodic, therefore, insufficient stability of the system can lead to catastrophic consequences. The results which are obtained in the course of econometric modeling will be useful for representatives of public authorities, as they can be used to develop strategies aimed at attracting foreign direct investment in the regional economy.

**Keywords:** Direct Investment, Investment Activity, Investment Project, Investment Strategy, Determinants, Territorial Development, Non-Stationary Economy

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## 1. Introduction

Investigating the mechanisms of public administration in Ukraine, the target, functional, methodological, information-analytical and instrumental parts are need to be identified. Giving the positive assessment of this proposal, we note that the mechanism of systematic management of development processes in the region should have a structure, correlate with the structure of tasks and functions, be systemically integrated, take into account their purpose and content, strengthen its flexibility and adaptability to systemic transformation changes and present it as a mechanism for systematic management of

regional development processes. Numerous economic studies, the implementation of joint business projects and the mentality of Ukrainian society have proven the need to attract foreign investment for the progressive future of Ukraine and the achievement of European living standards. Foreign capital can significantly influence the introduction of technical innovations and advanced technologies in the area of production, provision of financial and non-financial services and the quality of management in the real and financial sectors of the economy. The current state of economic and social development of Ukraine requires an understanding of the effective role of investment policy in the economic system of

the state. Foreign direct investment (hereinafter referred to as FDI) plays an important role in the global economy. According to statistics, over the past 30 years, foreign direct investment flows have increased 26.3 times, while the world gross domestic product has increased only 5.8 times. The main driver of global growth, according to “UNCTAD” [1], is the sharp increase in international mergers and acquisitions. There is huge competition between countries for foreign direct investment, since FDI has a positive effect on the economy of the recipient country. In addition to direct effects, such as an increase in GDP, budget revenues, decrease in unemployment, an increase in the quality of products and, as a result, an expansion of relations with foreign markets, FDI also indirectly has a positive impact on the host country, in the form of new knowledge, transfer of experience, dissemination technologies, increasing demand for local goods and services, staff training, etc. Foreign investment also allows accelerating the process of adaptation for local enterprises to world standards. Thus, foreign capital is quite attractive not only for the economy of the host entity, but also for society. After analyzing the data on FDI inflows to Ukraine, we can conclude that their volume has declined sharply. Analysts say that the sharp decline in foreign investment was caused by the depreciation of the UAH, energy prices.

Foreign investments are long-term capital investments that foreign investors direct to various sectors of the economy, taking into account the attractiveness of the investment object and other factors. Part of the FDI literature argues that foreign firms have beneficial “side effects” on the productivity of domestic firms, allowing the latter to observe and learn from foreign partners and introduce new products and technologies. On the other hand, foreign firms can negatively influence domestic companies. They can force domestic firms to reduce production and charge a higher average price as fixed costs are spread over a smaller scale of production. Studies of the impact of foreign presence on the performance of domestic firms include as an explanatory variable some measure of foreign presence, typically the share of foreign firms in the output of the industry, as well as the financial and other performance of FDI recipient firms. According to the number of researchers, the effect of FDI on a domestic firm is negative in developing countries such as Morocco, Venezuela, as well as in countries with economies in transition, such as Bulgaria, Romania and the Czech Republic. Ukraine is no exception. Nevertheless, a number of authors find positive effects in five out of ten countries with economies in transition.

Will Ukraine finally become an investment-attractive country for doing business and investing, or is it better to continue withdrawing capital and selling off assets? When will the best time to invest and how not to miss it? What new opportunities may open up for private and institutional investors in Ukraine in connection with the change in the country’s geopolitical course? These and other topical questions are being asked today by business owners and active investors in Ukraine.

Due to the high level of uncertainty in the military-

political sphere of Ukraine, it is difficult today to build any economic forecasts and give recommendations to investors. At the same time, we would like to draw the attention of the “waiting” investor to the opening prospects, unrealized and hidden investment opportunities. Ukraine today is a good place and time to invest.

The allocation of significant financial assistance and credit resources by international economic and financial organizations, the EU and the United States should stabilize the state of Ukraine’s financial system in the near future. In turn, such a precedent should draw the attention of international private investors to the economy of our country.

The current time must be used effectively; it is the most promising for attracting foreign capital, because the attention of the whole world is focused today on the events in Ukraine. Right now the capitalization of Ukrainian companies is reaching the bottom and they are being sold at a discount, right now investments are needed to financially support promising companies and bring them on a growth trajectory.

So, the aim of the work consists of studying investment determinants modelling for territorial development of southern Ukraine and transformation the investment policy in the context of non-stationary economy: on the base of institutional quality and economic growth.. The empirical part of the work is expressed by the economic and statistical investigations of foreign direct investment in targeted region. In this paper, author proposes systematisation of the main indicators which are used in economic and statistical methods for predicting the level of risk in assessing the effectiveness of investment projects. Author systematizes the instrumental base for extrapolating and building the prognostic validity of international investment activity at the territorial level.

## 2. Literature Review

For sustainable socio-economic development of the regions of Ukraine it is necessary to attract a sufficient amount of funds from both internal and external sources. The results of basic research by Ukrainian and foreign scientists clearly indicate that the processes of economic renewal and growth are determined by the size and structure of investments, the quality and speed of their implementation. Many scholars have paid attention to the study of modern vectors to the formation of the country investment policy. A wide range of issues related to research in the area of investment activity and attracting foreign investment in order to improve the investment climate are reflected in the works of domestic and foreign scientists and economists. For example, Drobyazko S. [3] presents innovative methods for the development of business economic security at the micro and macro levels. Mayorova [8] in the work explores the investment process and financial and credit importance of its revitalization in Ukraine. Piarce [2], for instant, investigates the strategic management, formulation, implementation, and control. Karpenko [4] is working on the issues analytical tools of integrated managerial analysis for the activation strategy of the enterprise innovative investment development

the system. Research in the formation of international investment strategies can be seen in articles of scientists Lipkova & Bohac [13]. Thus, the chosen research topic is relevant, requiring constant improvement and elaboration of ways to optimize investment activity.

### 3. Data and Methodology

At present, the activity of transnational corporations (TNCs) and the inflow of foreign direct investment in Ukraine are significantly inferior to other countries of Western Europe and the CIS, but, despite this, Ukraine has significant potential for foreign investors and is a promising market [2].

When making investment decisions and choosing a country for the implementation of an investment project, TNCs are guided by many factors. In the scientific literature, there is still no generally accepted explanation of the reasons that determine the choice by corporations of a particular area for deploying an investment project.

At the same time, there are several groups of criteria for evaluating the effectiveness of an investment project:

- 1) the attractiveness of the country in terms of costs (here, the cost of labour, the characteristics of the tax system and subsidies, the quality of infrastructure, human resources and the development of financial markets are taken into account);
- 2) the attractiveness of the country in terms of sales: characteristics of the local market, its development, growth potential and the country's openness to international trade;
- 3) the attractiveness of the country in terms of cultural characteristics and political risk. According to these criteria, Ukraine is quite attractive for the activities of TNCs, but some factors still offset this attractiveness, while reducing the competitive advantages of our country.

In terms of the number of consumers, Ukraine is a potentially large market in Europe. The relative under saturation of the Ukrainian market makes it quite promising for foreign investors, although the low income level of a significant number of the Ukrainian population hinders the formation of dynamic solvent demand. For TNCs from the EU and the US, the most attractive areas of Ukraine are the following:

- 1) Ukrainian food industry. In the food industry of the world, the Swiss company Nestle, the Belgian AB InBev, the American Kraft-Heinz and Coca-Cola Company, the Anglo-Dutch Unilever; - trading companies. Wall-Mart Stores, Carrefour SA, McDonalds Corporation have already entered the Ukrainian market;
- 2) financial sector. The largest TNC representative here is Raiffeisen International Bank-Holding AG;
- 3) pharmaceuticals. Known in Ukraine are the German brands "BASF SE" and "Bayer AG". It was in these industries before the recent well-known sad events in

Ukraine that there was a rapid turnover of capital [3].

After stabilization of the political and economic situation in our country, growth in these industries will undoubtedly resume, despite the fact that commercial risks will be low. It is also attractive for TNCs from industrialized countries to invest in business services infrastructure to serve, first of all, enterprises with foreign investments. Ukraine has a significant potential for foreign investors, which is determined by a relatively large and growing market, the availability of production factors, infrastructure, and favourable geographical position [4].

But, despite this, the instability and legal uncertainty of tax legislation, the lack of transparency of the financial market and privatization processes, the lack of protection of property rights, the bureaucratization of the administrative apparatus and the unreasonably high level of the country's participation in economic life are only an incomplete list of factors that hinder the inflow of foreign capital into Ukraine and complicate its integration into the global financial system. Recently, this list has been replenished with macroeconomic instability due to the volatility of prices for fuel and raw materials, and a high level of political risks.

Thus, it can be stated that the national economy does not fully use the available opportunities to increase FDI, and therefore the problem of attracting them, as before, remains extremely relevant for Ukraine.

The next step, we will review and describe the optimal investment strategies with investor commitments and investment drivers.

Up to this point, the optimization model has mainly focused on portfolio assets, but virtually all portfolios exist to meet some future liabilities. Pension funds are set up to provide income and benefits to retirees. The endowments support the current and future expenses of universities and foundations. The portfolios of insurance companies are designed to create assets to cover future claims. In all these cases, the investor's primary objective is not just the growth of assets, but the fulfillment of future obligations. The investor is therefore concerned about the growth of assets net of future outflows. A financial intermediary may be particularly concerned about changes in net worth when net worth is defined in terms of a series of existing liabilities [5].

There are several ways to define the equity optimization problem; however, they all relate to the fundamental challenge of fitting a potentially complex set of future liabilities into the two-dimensional framework of a portfolio optimization model. The liabilities faced by the fund must essentially be characterized by average return expectations, standard deviation and correlations with the assets if they are to fit into the risk-return space.

For example, consider a retirement fund that has a known series of cash payments due over a five-year period from ten to fifteen years into the future. Efficient frontier technology can be adapted to optimize the portfolio against these assumed liabilities. In this case, the risk-free asset from the fund's perspective would be a bond portfolio with cash flows that exactly match the future flow of liabilities. The risk and

return and correlations of this matched bond portfolio perfectly characterize the liabilities, so in this sense it could be called a "passive asset".

This cash flow coupled portfolio is also said to outweigh the liabilities. So it works similar to the risk-free business in the standard model. Once these known liabilities are defeated, the fund can optimize the remaining assets. This is mathematically equivalent to treating liabilities as negative assets and limits the portfolio to hold "liabilities" in the ratio between the present value of these future liabilities and the present value of the assets in the portfolio.

Thus, returns on net worth can be expressed in terms of assets and liabilities [6]. If  $S_t$  is surplus or net worth (assets minus liabilities), then return on surplus is

$$R_S = \frac{S_{t+1} - S_t}{S_t} \quad (1)$$

$S_{t+1}$  - is determined as assets minus liabilities in period  $t + 1$ . It follows that

$$(I + R_S) = \frac{A_{t+1} - L_{t+1}}{S_t} = \frac{A_{t+1}}{S_t} - \frac{L_{t+1}}{S_t} \quad (2)$$

Multiplying the first term by  $A_t / A_t$  and the second term by  $L_t / L_t$  results in

$$(I + R_S) = \frac{A_{t+1}}{S_t} \times \frac{A_t}{A_t} - \frac{L_{t+1}}{L_t} \times \frac{L_t}{S_t} \quad (3)$$

recognizing that  $A_t - L_t = S_t$ .

One approach to pure optimization is to use historical returns on assets net of liabilities as an empirical basis for the analysis. In the previous example, assume that the present value of the assets is twice the present value of the liabilities. Since a non-coupon medium-term government bond portfolio is insolvent, we can estimate risk, return and liability correlations using historical series of medium-term government bond performance.

We can also estimate the inputs for three asset classes: equities [S], medium-term government bonds [B] and treasury bills [F] using historical data. Then we transform each series of revenues into a return on equity by subtracting the series of appropriately scaled liabilities.

Thus, our "net" time-series, used to calculate inputs to the optimization model, are

$$R_S - \frac{1}{2}R_L, R_B - \frac{1}{2}R_L \text{ and } R_F - \frac{1}{2}R_L. \quad (4)$$

The means, standard deviations and correlations of these three pure series are then used to calculate the efficient frontier. What will this border look like? First, note that all positions of the underlying asset classes change due to the deduction of liabilities.

Consider a portfolio fully invested in B. Since L and B are perfectly correlated, to each other, the liabilities are paid off,

i.e., perfectly guaranteed by the corresponding cash flows. However, this requires only half of the goods. The remaining halves of the assets are then invested in medium-term bonds. This portfolio of assets now has half the expected return and half the variance of what the bond portfolio would have in an "asset only" optimization, because the liabilities actually covered that amount of risk and the return on the net investment perfectly.

## 4. Key Research Findings

The first step of modelling for territorial development is the *Empirical Solutions*. A data-driven empirical approach asks whether the capital premium is correctly measured given the data researchers have available to study. For example, perhaps a century ago, investors believed that investing in stocks was a very risky prospect and demanded adequate compensation for holding stocks. A century later, their equity investments have done well, at least according to historical US stock market data. Economist Thomas Reitz (1998) argues that past investors could correctly predict crashes that never occurred in the data, but that doesn't mean they couldn't happen, just that we were lucky to avoid such disasters [7].

In fact, when we look at the US market returns, we know we are looking at a happy market. The United States was on the winning side of the two world wars of the twentieth century and by the end of the twentieth century it became the dominant stock market in the world. These facts alone would indicate that this is not a representative sample for measuring the performance of the stock market and for measuring the stock premium. In the next step, we will explore this question. Brown, Goetzmann and Ross (1995) [8] have developed a simple model in which some stock markets undercapitalize and eventually disappear, while others thrive and end up in historical records. They have shown that by including only the survivors, the estimated historical prize will be positively affected.

Claus and Thomas (2001) and Fama and French (2002) take a different tack. They use non-return data such as earnings forecasts, dividends, and growth rates to estimate the expected equity premium historically. Fama and French argue that the high returns in the second half of the twentieth century in the United States were a surprise and should not be considered as part of an expected premium. Claus and Thomas conclude that the equity premier might be as low as 3% now. These empirical approaches taken together have caused a downward adjustment in expectations about future equity premier, but do not explain away the entire magnitude of the historical equity premium [9].

The second step in the modelling of territorial development is represented by the *Theoretical Solutions*. Theoretical solutions to the equity premium puzzle, on the other hand, have led to the development of more sophisticated models of investor utility functions and risk attitudes. For example, one class of theoretical solutions assumes that rational investors do not like to see their

standard of living decline, even if it has recently risen. They are so opposed to even small dips in their wealth. It is called "habit formation" or "banning consumption". This way of modeling preferences means that no matter how much wealth an investor has accumulated, he has an extreme aversion to a small decline in his current level of wealth or his wealth relative to the wealth of everyone else. These models are theoretically correct, but they have some difficulty explaining the average level of participation in the stock market: they predict large equity investments by people early in life, a pattern not observed in surveys of household finances.

Another approach seeks to explain the conundrum of the capital premium as the result of an irrational or inconsistent choice by the investor. Benartzi and Thaler (1995) [10], for example, suggest that a high equity premium may be the result of equity investors focusing too much on short-term market performance. For example, let's say you've hired a money manager and entrusted him with an entire portfolio of assets. You also ordered the manager not to lose money in any year or you would have fired him. In this situation, the manager would not be willing to invest in equities or incur large insurance costs to cover the risk of loss in a given year. The portfolio would simply not grow as fast as it would if the manager were told that a loss in a given year is acceptable, but a loss over a twenty-year horizon is not. The effect of evaluating a portfolio's performance on an annual basis against a given required return makes investors more averse to investing in equity, effectively increasing investor premium demand for holding the stock.

While all of these attempts to solve the equity premium puzzle have made a significant contribution to financial research, none have yet satisfactorily reconciled investor utility models with the empirically observed excess return of equities over bonds. Until we further understand this difference between data and theory, it is wise to use utility analysis with some caution. The idea that we may not even understand the order of magnitude of investors overall risk aversion is worrying [11].

The non-stationary economy is such an "economic system, which is characterized by rather sharp and poorly predictable changes in many macroeconomic indicators, the dynamics of which do not correspond to the normal economic cycle. In essence, the non-stationary system is characterized by such conditions that are inherent in "crisis or post-crisis economic processes". In other words, such processes are constant in a non-stationary economy; while in stationary economic systems they (processes) are temporary, being only one of the elements of cyclical economic development. This is the most common conclusion of researchers from the analysis of the non-stationary economy of Ukraine for the period from 1992 to 2009, i.e. for 19 years. The author's research is also interesting from a narrowly professional point of view, especially in the area of efficiency of investment projects. Professionals involved in appraisal activities can also learn a lot.

The development and implementation of an effective investment policy strategy occupies an important place

among the main factors of effective management of the state economy. Therefore, there is a need to develop and implement a strategy for socio-economic development under proper control and evaluation, which in the long run will increase the effectiveness of strategic management of the economy and lead to economic growth based on modern tools of modelling and management.

Ukraine is a potentially rich country that is self-aware and externally perceived as a political and economic state. The National Strategy for Increasing Foreign Direct Investment in Ukraine was developed at the request of the Government of Ukraine with the support of the USAID Competitive Economy of Ukraine EY Ukraine in cooperation with the National Investment Council Office, the Ministry of Economy and the Ukraine Investment Promotion and Support Office.

The strategy provides recommendations for the development of promising industries to attract investment and ways to increase the inflow of foreign direct investment in Ukraine. The document was created primarily for the international investment community and Ukrainian institutions whose activities are focused on attracting investment.

The strategy is built around cross-sectoral (privatization, export promotion, education, digital transformation, etc.) and sectoral incentives to increase foreign investment. The strategy contains specific recommendations on how to make the country more attractive to potential foreign investors - both in terms of relocation of production capacity and in terms of starting activities in Ukraine. The strategy is divided into 3 sections: a macro view of FDI, sectoral analytical documents and a directly proposed Action Plan and Vision to 2030.

The mechanism of formation and implementation of the socio-economic development strategy of the state should be based on the principle of systemic integration, as it is based on a cyclical planning process based on the principles of event management in the direction of achieving goals through monitoring; repeated cycles of analysis of decision-making, planning and implementation of tasks with specific goals and a deadline for their solution; continuous monitoring and evaluation of the achievement of goals according to the content of the strategy and selected measures; facilitating the coordination of the actions of the strategy implementers with the use of monitoring, analysis and availability of sources of funding for certain activities.

The set of principles of behaviour, the requirements for strategic analysis, is determined by the long-term goals of the state economy. In the conditions of high turbulence ("vortex" nature of changes), increasingly fierce mega-competition and transitive nature of Ukraine's economic development, the top hierarchical level of strategic monitoring is a priority. The set of requirements for strategic monitoring of macroeconomic indicators of socio-economic development and the monitoring of macroeconomic indicators based on cointegration analysis is presented in Figure 1.

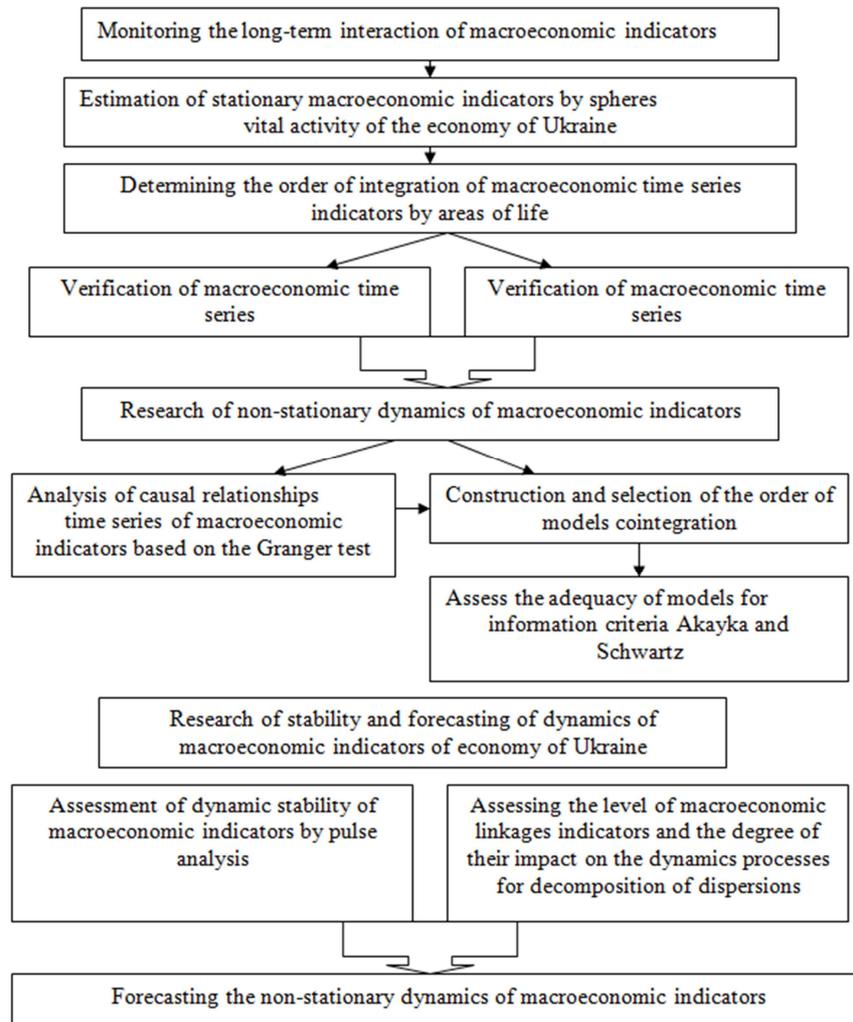


Figure 1. Monitoring of macroeconomic indicators based on cointegration analysis.

Since the monitoring of significant macroeconomic indicators, the dynamics of which is key in developing and implementing a strategy for sustainable socio-economic development in the context of strategic management, is a complex multifaceted process, to assess, analyze and predict their status in the literature uses a wide range of formalized and informal methods. There are tools which consist of: determination of integrated indicators of the level of security in the space-time section based on the use of a set for different indicators with their threshold and optimal values.

The methodology of the proposed tools allows building available for review models of processes taking into account pre-crisis and crisis phenomena. At the same time, pre-crisis phenomena are associated with a complication of the nature of the dynamic process. These approaches prove their applicability, they are used to study dynamic modes and, perhaps, not only qualitative but also quantitative determination of system parameters at which pre-crisis and crisis phenomena can occur.

The choice of this mathematical toolkit for studying the dynamics of time series and assessing the relationship of macroeconomic indicators is due to the following features of this toolkit:

- 1) cointegration analysis is based on the concept of long-term relationship between non-stationary variables. The proposed methodology allows: to identify long-term relationships in non-stationary time series; is a convenient tool for short- and medium-term forecasting of individual time series; allows you to include and explore the complementary relationships between indicators and their lag values; allows you to perfectly describe and interpret the relationships between variables and their deviation from equilibrium; assess the degree of stability of the system;
- 2) the methodology of phase analysis allows to determine the equilibrium state, which may be several, and to assess the stability or instability of the corresponding equilibrium state at this point and its type, and is to build a phase portrait of the system as a method of depicting a dynamic process the ability to visualize the whole set of movements that occur in the system under different initial conditions.

A comprehensive monitoring of the study of the dynamics of macroeconomic indicators was carried out on the following indicators: GDP dynamics (GDP), investment dynamics (INVEST), industrial production dynamics

(VPROD), import dynamics (IMPORT), M3 aggregate (M3), construction work dynamics (VBUD), wages (ZARPLATA), dynamics of migration rate (KOEFG\_MIGR) and natural population growth (EST\_PRIROST) according to official data of the state statistics of Ukraine.

Monitoring of the level of long-term interrelation of macroeconomic indicators of the economy of Ukraine on the basis of cointegration analysis was carried out in the following scheme, which is shown in Figure 2.

However, the intensification of globalization transformations in the dynamics of territorial development takes place in the context of global crisis processes and the strengthening of nonlinear relationships and processes that take place in them. Thus, it requires the improvement of management tools at all levels of the hierarchy and qualitative assessment of macroeconomic indicators, the dynamics of their behaviour and causation.

At present, the activity of transnational corporations (TNCs) and the inflow of foreign direct investment in Ukraine is significantly inferior to other countries of Western Europe and the CIS, but, despite this, Ukraine has significant potential for foreign investors and is a promising market.

When making investment decisions and choosing a country for the implementation of an investment project, TNCs are guided by many factors. In the scientific literature, there is still no generally accepted explanation of the reasons that determine the choice by corporations of a particular area for deploying an investment project [12].

At the same time, there are several groups of criteria for evaluating the effectiveness of an investment project:

- 1) the attractiveness of the country in terms of costs (here, the cost of labour, the characteristics of the tax system and subsidies, the quality of infrastructure, human resources and the development of financial markets are taken into account);

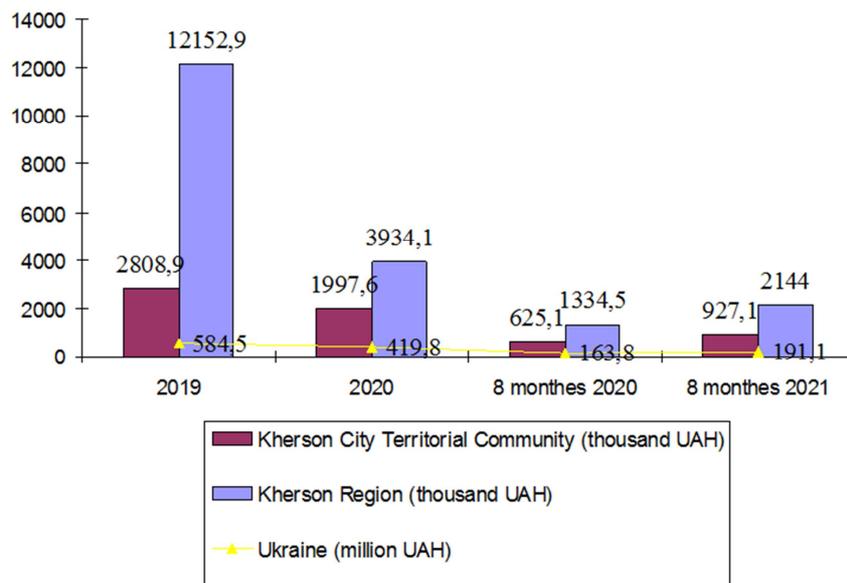
- 2) the attractiveness of the country in terms of sales: characteristics of the local market, its development, growth potential and the country's openness to international trade;
- 3) the attractiveness of the country in terms of cultural characteristics and political risk. According to these criteria, Ukraine is quite attractive for the activities of TNCs, but some factors still offset this attractiveness, while reducing the competitive advantages of our country.

## 5. Results

*Practical aspects of this work* are concerned with study of investment sector in Kherson, Ukraine. In this regard, statistical data concerning investment potential and enterprise activity on the market are examined below.

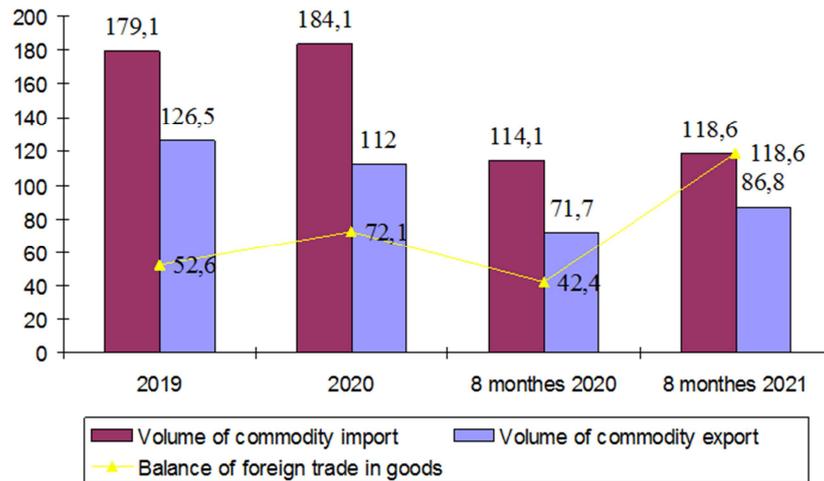
So, let's research the investments, implementation of the city's image policy, international cooperation and foreign economic activity. In 2020, there was a reduction in the amount of capital investment. Most economic agents have taken an investment pause: domestic - due to loss of financial resources due to the impact of restrictive quarantine measures, foreign investors - due to uncertainty about the timing and nature of the spread of disease and waiting for the situation to improve. For 6 months of 2021, enterprises and organizations, thanks to all sources of financing, mastered UAH 927.1 million of capital investments, which is 48.3% more than in the same period of 2020 (see Figures 2-3).

The implementation of the World Bank's investment project "Improving energy efficiency in the district heating sector of Ukraine" on the basis of MKP "Khersonteploenergo" (project cost 21.65 million US dollars). As of October 1, 2021, UAH 120.1 million of investments were made.



Source: formed by the author on the base of UKRSTAT (2022): *Statistics* [online]. [cit.2022-05-18]. Available at: <http://www.ks.ukrstat.gov.ua/>

**Figure 2.** Capital investment in Kherson City Territorial Community, Kherson Region and Ukraine.



Source: formed by the author on the base of UKRSTAT (2022): *Statistics* [online]. [cit.2022-05-18]. Available at: <http://www.ks.ukrstat.gov.ua/>

**Figure 3.** Dynamics of current trade activities in Kherson City Territorial Community.

Work continues on the investment project "Improvement of public transport infrastructure of Kherson by purchasing new low-floor trolleybuses and related repair equipment, repair and modernization of trolleybus catenaries", the main purpose of which is the development of environmentally friendly and socially significant transport. The cost of the Project is EUR 12.5 million, including EUR 10 million - EBRD loan (80%); 1.5 million Euro - grant Neighborhood Investment Platform (12%); 1 million Euro - local contribution (8%). The loan is provided for a period of 13 years. In addition to these funds, Kherson will receive additional funding in the form of grants:

- 1) 460 thousand Euro - for the payment of consultants in the framework of the Project;
- 2) 150 thousand Euro - for the development of the Plan for Sustainable Urban Mobility.

According to the results of the EBRD tender, the contractor was the French company "Egis International", which began operations in October 2020, which will last for 12 to 16 months. In 2020, tender procedures were conducted for the purchase of trolleybuses for MKP "Khersonelectrotrans", related equipment and spare parts. In 2021, the tender proposals of the bidders were evaluated, a draft contract for the supply of rolling stock was prepared, and the EBRD approved the report on the evaluation of tender proposals and the specified draft contract. In October of this year, MKP "Khersonelectrotrans" and the winning company finally agreed on the details of the contract.

The Kherson City Council, the Northern Environmental Finance Corporation (NEFCO) and the Clean Energy Solution (CES) consulting company are working together to develop a feasibility study for a project to improve the energy efficiency of public buildings in the Kherson Municipal Clinical Hospital and street lighting of the city of Kherson. During the work, 4 buildings were selected, which together occupy 81% of the total area of the hospital and use approximately 80% of the total level of basic energy consumption. The cost of the proposed measures - 4.2

million Euro, payback period - 10.5 years, energy savings - 46% [13].

#### *Main problems:*

- 1) low investment opportunity due to the unstable political and economic situation in Ukraine;
- 2) low activity in the promotion and promotion of new forms of investment, but also in the development of instruments of state-private partnership;
- 3) compliance with the pace of investment activity and business activity caused by the acute respiratory disease COVID-19 pandemic.
- 4) key targets for 2022:
- 5) formation of favourable investment climate on the territory of Kherson City Territorial Community (CTC);
- 6) raising domestic and foreign investments and organizing work from the future to finance the development of priority directions of social and economic development of the Kherson MTG.

#### *Main tasks for 2022:*

- 1) preparation, implementation and support of investment projects and programs for the budget of the state budget and the budget of the Kherson CTC;
- 2) shaping investment propositions for the development of the community and popularization among potential investors, setting out the promotion of investment activity in Ukraine;
- 3) development of a mechanism for the promotion of state-private partnership;
- 4) development of the project "Creation of an industrial park in the city of Kherson";
- 5) exchange of knowledge with other regions of Ukraine for effective methods of obtaining foreign investments;
- 6) holding seminars, investment forums;
- 7) obtaining funds from international financial organizations, international grant projects and programs of international technical assistance for the implementation of investment projects on the territory of the Kherson CTC.

- 8) Expected results and target indicators to be achieved in 2022:
- 9) improving the investment climate in the Kherson CTC;
- 10) increase in the volume of disbursed capital investments on the territory of Kherson CTC.

In order to increase the investment attractiveness of the city, in January - September 2021, 19 meetings were held with representatives of foreign countries, including: the State of Israel, the United States, the Republic of Poland, the People's Republic of Bulgaria, the Independent Evaluation Mission of the Government of Denmark, the United Arab Emirates.

## 6. Conclusions

In the work author proposes to improve the mechanisms of the state's investment policy based on the institutional quality and economic growth. The issue of improving the investment climate and business conditions has been and remains the most relevant for any country, especially the developing one. Lack of stable economic development, low level of product competitiveness, depreciation of fixed assets by 90% in virtually all sectors of the economy and a number of other factors, exacerbated the investment attractiveness of the state, especially in the context of recent events. Discussions in the area of European integration processes are impossible without a detailed assessment of the investment attractiveness and competitiveness of the Ukrainian economy.

Currently, international cooperation in the region is somewhat formal. Interregional relations are limited to the signing of memoranda between partner regions. Large cities of different countries usually hold large-scale events of an international nature, which unite representatives of the world community and are of interest for establishing business contacts with foreign partners. There is also no practice of exchanging experience between specialists who are directly involved in attracting investment and international cooperation.

Particular attention needs to be paid to attracting projects (programs) of international technical assistance, which are important for socio-economic development of the region, as their implementation significantly reduces the burden on local budgets, active institutional changes, infrastructure development, which in turn, creates a favourable investment environment in the region. Some projects (programs) of international technical assistance allow to solve first of all social problems, which are often financed on a residual basis.

Common factors hindering investment attraction and development of foreign economic cooperation are imperfection, instability and inconsistency of the legal framework governing capital investment in Ukraine, low awareness of the international community about the investment potential of Ukraine as a whole and its individual regions.

Regional problems of attracting effective investment in the economy of the region are:

- 1) lack of a single system of preferences for investors

approved at the regional and local levels, which would combine a number of fiscal and administrative benefits for the implementation of investment projects under certain conditions;

- 2) lack of specific business plans, feasibility studies and development projects of territorial communities of the region, developed in accordance with international standards and on the basis of professional research of the investment potential of the region, etc.

The imperatives of sustainable development pose new challenges and diversify the investment policy of the state of Ukraine.

In the mid-term, in our opinion, attention should be paid to the following points:

- 1) digital transformation;
- 2) formation of the legal and regulatory framework for the investment market;
- 3) improving the quality of public investment management, as well as the responsibility of state organizations for the implementation of investment policy;
- 4) identifying reliable sources and new methods of financing investments, determining priority sectors of the economy for capital investments with appropriate measures to promote them;
- 5) creation of favourable conditions for all business entities in order to increase their investment activity, economic recovery, increase production efficiency and solve social problems;
- 6) intensive holding of investment fairs abroad;
- 7) to stimulate foreign investors and protect investments, providing them with additional discounts and preferences, as well as government guarantees;
- 8) development of investment projects to attract new, non-traditional investor countries.

Summarizing the above, the following can be noted. In the context of economic imbalances and global challenges, it is expedient to pursue an active state investment policy. An important role in attracting investment is played by ensuring political and legislative stability, purposefully informing the public about the results of measures taken to improve the investment climate in the country, which should give a positive signal to potential investors. The implementation of the proposed recommendations will raise the investment sphere of the state to a qualitatively new level and will contribute to its socio-economic and technological development.

The analysis of the constructed models of interaction of macroeconomic indicators and their phase trajectories allows to conclude that at this stage of development of economy of Ukraine unsteady and unstable dynamics is observed, trajectories have fluctuating periodic or periodic character, therefore, insufficient stability of system leads to strengthening over time, it can be increasingly influenced, which can lead to catastrophic consequences.

Taking into account nonlinear effects in models of economic dynamics allows to analyze the patterns of development of real socio-economic processes in difficult conditions, which determine the monitoring methodology is a

set of models of cointegration and phase analysis of macroeconomic indicators in Ukraine's economy qualitative analysis of factors of sustainability of development, determining the features of the development of transformation and transition processes. Introduction of tools for studying the dynamics of interaction of key macroeconomic indicators based on the proposed method of monitoring non-stationary dynamic processes will determine the strategy of stabilization and further development of the state economy, the quality of which is determined by close get adequate forecasts.

Further research is planned in the direction of development and application of adequate tools for monitoring macroeconomic indicators based on the study of their non-stationary dynamics in the context of the implementation of the investment strategy of the state.

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