УДК 339.54
DOI 10.32342/2074-5354-2023-1-58-19

OLEKCANDR ZADOIA,
PhD (Economics), Associate Professor,
Global Economics Department,
Alfred Nobel University, Dnipro (Ukraine)
https://orcid.org/0000-0002-4251-3061

PHAN MINH DUC,
PhD (Economics), Lecturer, Faculty of Political Economics,
Academy of Journalism and Communication, Hanoi (Vietnam)
https://orcid.org/0000-0003-3662-4889

MODELS OF ECONOMIC OPENNESS OF EUROPEAN COUNTRIES AND UKRAINE: A COMPARATIVE ANALYSIS

The article raises the question of whether the openness of an individual country's economy corresponds to the level of its economic development. Retrospective analysis indicates the existence of a long-term close interdependence of the growth of international trade and world GDP with an accelerated increase in the share of exports. But in recent years, this share, having reached its maximum in 2008, has demonstrated an amplitude fluctuation with a range of 30%. Therefore, a hypothesis has been put forward regarding the existence of a probable limit of export-led growth and economic development at the expense of increasing the level of openness of the national economy.

In the study, the authors conduct an analysis of the models of economic openness used in a number of European countries, compare them with the Ukrainian model, and put forward proposals regarding the principles of building a post-war foreign economic model of Ukraine.

In the process of research, the authors have designed a system of absolute and relative indicators of economic openness and determined a number of factors affecting the degree of economic openness. The concepts of financial openness and foreign trade openness have been specified. It has been proved that the state has more freedom of choice in the formation of financial openness than foreign trade openness.

Based on the analysis of a sample of countries (8 countries of the European Union with different levels of economic development, including former socialist countries and Ukraine), the authors have explored the dynamics of foreign trade openness over the past ten years. As a result, two groups of countries have been identified: a group with a certain fluctuation of the indicator and a group with a clear direction of the change in the indicator (either decrease or increase). It has been found that more developed countries, as a rule, belong to moderately open economies. In contrast, countries that relatively recently have become members of the European Union have ultra-open models.

A more detailed analysis of economic openness has been carried out by calculating the ratio of net exports to GDP. This made it possible to qualify countries in another way: economies where the indicator fluctuates within 1-2% and economies with a dynamic indicator. It has been determined that states that have recently switched to a mixed economic model tend to show an increase in the positive net exports.

Given the fact that there are no generally accepted indicators of financial openness, the authors have proposed to use a two-fold excess of the country's GDP by the sum of foreign assets and liabilities as a criterion of openness. According to this criterion, only Ukraine and Poland should be classified as countries with moderate openness. All other economies can be considered ultra-open.

The analysis of the net investment position allows, firstly, to identify a country as a net recipient or a net investor, and secondly, to assess the degree of influence of this indicator on internal processes in comparison with GDP.

The relative indicators of openness and pair correlation have been also calculated for the indicators used to determine the level of foreign trade openness and financial openness of the countries under study, in particular: exports of goods and services; foreign direct investment, GDP and export quota.

Based on the results of the study, it has been found that Ukraine's foreign trade model should be dynamic, changing its type from decreasing to growing with a gradual transition to a positive net export value. The model of financial openness should change in the direction of transition from the existing model to dynamic one with positive dynamics of the openness indicator. However, growth should be driven by non-debt-creating foreign exchange flows, since the level of public debt (in particular, external debt) will be too high anyway. Under this condition, the growing negative value of the net international investment position will not create an additional threat to the country.

Keywords: economic growth, openness of the economy, integration processes, foreign economic model, foreign trade openness, financial openness, foreign trade turnover, net investment position, foreign direct investment, net exports

JEL: ***F11, F43, F21, P33***

У статті досліджуються питання відповідності відкритості економіки окремої країни рівню економічного розвитку. Ретроспективний аналіз вказує на існування протягом тривалого терміну тісної взаємозалежності зростання міжнародної торгівлі та світового ВВП при прискореному збільшенні частки експорту. Але в останні роки ця частка, досягши свого максимуму в 2008 р., продемонструвала амплітудне коливання у діапазоні 30%. Тому було висунуто гіпотезу щодо існування ймовірної межі експортоорієнтованого економічного зростання та економічного розвитку за рахунок збільшення рівня відкритості національної економіки.

Проведено аналіз моделей відкритості економіки, які використовуються у ряді європейських країн, їх зіставлення з українською моделлю та висунуто пропозиції щодо принципів побудови післявоєнної зовнішньоекономічної моделі нашої країни.

У процесі дослідження було сформовано систему абсолютних та відносних показників відкритості економіки, а також визначено ряд факторів, які впливають на ступінь відкритості. Виокремлено поняття фінансової та зовнішньоторговельної відкритості. Причому доведено, що у держави більше свободи вибору у формуванні фінансової відкритості, ніж зовнішньоторговельної.

На основі аналізу вибірки країн (8 країн Європейського Союзу з різним рівнем економічного розвитку, в тому числі в минулому соціалістичні країни та Україна), досліджено динаміку показника зовнішньоторговельної відкритості за останні десять років. У результаті сформовано дві групи: група з певним коливанням показника та група з чітким спрямуванням зміни показника (або зниження, або збільшення). З'ясовано, що більш розвинені країни, як правило, належать до помірно відкритих економік. І навпаки, країни, які порівняно нещодавно стали членами Європейського Союзу, мають надвідкриті моделі.

Проведено більш розгорнутий аналіз відкритості за допомогою розрахунку показника відношення чистого експорту до ВВП. Це дозволило провести ще одну кваліфікацію країн: економіки, в яких показник коливається в межах 1-2%, та країни з динамічним показником. Визначено, що держави, які нещодавно перейшли до змішаної економічної моделі, мають тенденцію до збільшення позитивного показника чистого експорту.

З огляду на те, що загальноприйнятих показників фінансової відкритості взагалі не існує, автор запропонував застосовувати як критерій відкритості двократне перевищення ВВП країни сумою закордонних активів та зобов'язань. За цим критерієм лише Україну та Польщу слід віднести до країн з поміркованою відкритістю. Усі інші економіки можна вважати надвідкритими.

Проаналізований показник чистої інвестиційної позиції дозволяє, по-перше, ідентифікувати країну як нетто-реципієнта або як нетто-інвестора, і, по-друге, порівняно з ВВП оцінити ступінь впливу цього показника на внутрішні процеси.

Також проведено розрахунок відносних показників відкритості та парної кореляції для різних показників, які використовувалися для розрахунку рівня зовнішньоторговельної та фінансової відкритості досліджуваних країн, зокрема: експорт товарів та послуг; прямі іноземні інвестиції, ВВП та експортна квота.

За результатами дослідження встановлено, що зовнішньоторговельна модель України має бути динамічною, яка змінює свій тип зі спадаючого на зростаючий з поступовим переходом до позитивного значення чистого експорту. Модель фінансової відкритості повинна змінитися у напрямі переходу від сформованої до динамічної з позитивною динамікою показника відкритості. Однак зростання має бути за рахунок валютних потоків, які не створюють заборгованості, оскільки рівень державного боргу (зокрема зовнішнього боргу) і так буде надто високим. За цієї умови зростаюче від'ємне значення чистої міжнародної інвестиційної позиції не буде створювати додаткової загрози для країни.

Ключові слова: економічне зростання, відкритість економіки, інтеграційні процеси, зовнішньоекономічна модель, зовнішньоторговельна відкритість, фінансова відкритість, зовнішньоторговельний оборот, чиста інвестиційна позиція, прямі іноземні інвестиції, чистий експорт

JEL: ***F11, F43, F21, P33***

Introduction. For a long time, it was believed that the increasing openness of national economies is a general pattern of the development of the world economy. And the facts confirmed such ideas. After all, the world trade grew almost twice as fast as the world GDP. This led to a significant increase in the ratio of exports of goods and commercial services to world production. So, if in 1986, according to the World Bank, this indicator was 16.7%, then, growing steadily, in 2008 it reached its historical maximum - 31.2% [1].

However, in recent years the situation has changed dramatically. First of all, the economic crisis led to the fact that in 2009 the share of exports in the world GDP decreased to 26.5%. And although in 2011 the indicator almost reached its pre-crisis level, in subsequent years there has been a clear downward trend (Fig. 1).

Of course, we can try to explain the situation by a prolonged world depression, a pandemic or some other external factors. However, it appears that the increase in the proportion of exports in the structure of GDP, being one of the indicators of the economic openness, has encountered some "invisible" obstacle, reaching the limit of 30%, and cannot overcome it. Most likely, this phenomenon prompts a revision of the idea of increasing openness of the economy as a universal trend in its development. This has already happened, for example, with integration in connection with the strengthening of disintegration processes [2].

On the other hand, the problem of openness of the economy becomes especially relevant for the post-war reconstruction of both Ukraine and the whole of Europe. In fact, today it is generally recognized that the foreign economic model of Ukraine in the pre-war period was far from optimal. The leadership of the united Europe also recognizes the mis-

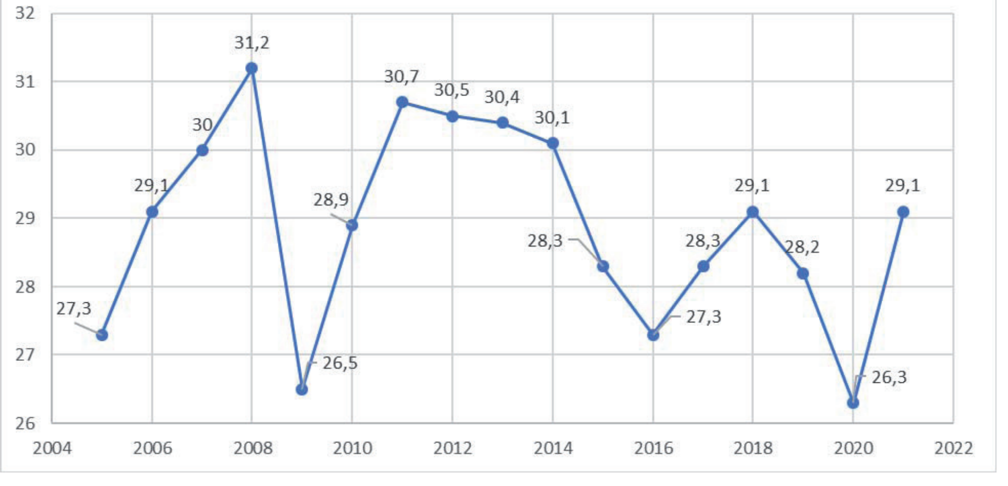

Fig. 1. Exports of goods and services as a share of the world GDP [1]

calculations in this area, which were manifested in the excessive dependence of the economy on individual suppliers, which created additional threats to economic security.

The purpose of the study is to analyze the models of economic openness used in a number of European countries, compare them with the Ukrainian model, and develop proposals regarding the principles of building a post-war foreign economic model of Ukraine.

Analysis of recent publications. In the last decade, the issue of economic openness of countries has been actively studied by both foreign and domestic scientists. At the same time, among the issues related to the degree of openness of the economy, Ukrainian researchers mainly focus on such issues as: assessment of the potential impact of the development of foreign trade on the intensification of trade processes within the country and the threats posed by the excessive openness of the economy [3]; clarification of the reasons that determine a particular level of openness of the economy [4]; calculation of general indicators of trade and total openness of the economy [5–6]; comparing the risks of both excessive openness of the economy and "neo-protectionism" [7]. In particular, S.O. Bila emphasizes that the risks to the economy that openness entails can be manifested in the destructive influence on the country's economy caused by both the world community as a whole and individual countries that occupy leading competitive positions in the world market; in the emergence of insurmountable obstacles to strategic planning due to excessive dependence of the domestic economy on unpredictable changes in the world market; in the transformation of the country into a commodity appendage of developed countries, etc. At the same time, the author warns about the possible negative consequences of attempts to revive protectionism, specific to the administration of the previous US president Donald Trump [7].

The main leitmotif of foreign research on the problems of openness of the economy is the search for indicators that most adequately reflect this process. Thus, the authors [8] try to characterize the state of openness of the economy through indicators of the degree of participation of in the world trade. They proposed a new indicator, which they describe as "trade potential index". This indicator quantifies the impact of a country's transition to free trade standards in international economic relations on its level of well-being. Using standard mathematical models, the authors proved that the openness of the economy is a more profitable form of conducting international trade than economic autarky.

At the same time, D. Rodrik [9] warns that calls for free trade can only be a cover for the implementation of selfish behavior on the part of politically well-connected firms – international banks, pharmaceutical companies, and multinational companies. They can lead to freer, mutually beneficial trade through the exchange of market access. But they are likely to lead to purely redistributive outcomes.

The authors of a significant number of studies try to go beyond foreign trade in goods and services as the only way to characterize the openness of the economy. Increasingly popular is the indicator of financial openness, which is calculated as the ratio of the sum of foreign assets and external liabilities to GDP, expressed as a percentage. Specialists of the International Monetary Fund calculated the value of this indicator for 203 countries of the world for the period from 1970 to 2015 [10]. T. Saadma and A. Steiner [11] supplement this general indicator with a number of partial indicators of financial openness.

The approach proposed by a group of researchers [12] is quite interesting. Summarizing the existing approaches to indicators of economic openness, scientists come to the conclusion that the ratio of foreign trade turnover to the country's GDP demonstrates "de facto" openness. However, it may turn out that even a country with a high value of this indicator is not actually an open economy, since there are significant foreign trade tariff or non-tariff barriers. The same can be said about financial openness, where, along with significant capital flows, there are certain restrictions on foreign direct investment or investment abroad. Therefore, the authors propose to supplement the concept of "de facto" openness with the concept of "de jure" openness.

At the same time, despite a significant number of studies, the criteria for selecting a model of economic openness by countries (as well as classifications of these models) remain unexplored. Since Ukraine will face the issue of choosing a new model of foreign economic activity in the post-war period, the study of existing models and factors of their choice is extremely relevant.

Research methods and information base. To achieve the goal, the following methodological approaches will be used in this article:

1. A system of indicators, which includes absolute and relative indicators (Table 1), will be used to evaluate the model of openness of the economy. Absolute indicators allow to assess the degree of openness of the economy independently of other countries, focusing only on certain criteria. The assessment of relative indicators requires mandatory comparison with similar indicators of other countries, since there are no more or less recognized criteria in this regard.

2. The degree of economic openness is determined by a number of factors, among which mention should be made of the level of provision of endowment with natural resources, the share of lower-tech industries, the degree of specialization of production, the level of international competitiveness of national production and the chosen model of foreign economic activity (Fig. 2).

Table 1

System of indicators of economic openness*

Absolute indicators	
Foreign trade openness	Export quota (ratio of exports of goods and services to GDP)
	Import quota (ratio of imports of goods and services to GDP)
	Ratio of external trade to GDP
Financial openness	Ratio of foreign assets to GDP
	Ratio of liabilities to non-residents to GDP
	Ratio of direct investment abroad to GDP
	Ratio of foreign direct investment to GDP
Relative indicators	
Relative indicators	Foreign trade turnover per capita
Relative indicators	Direct investment abroad per capita
	Foreign direct investment per capita

Developed by the authors.

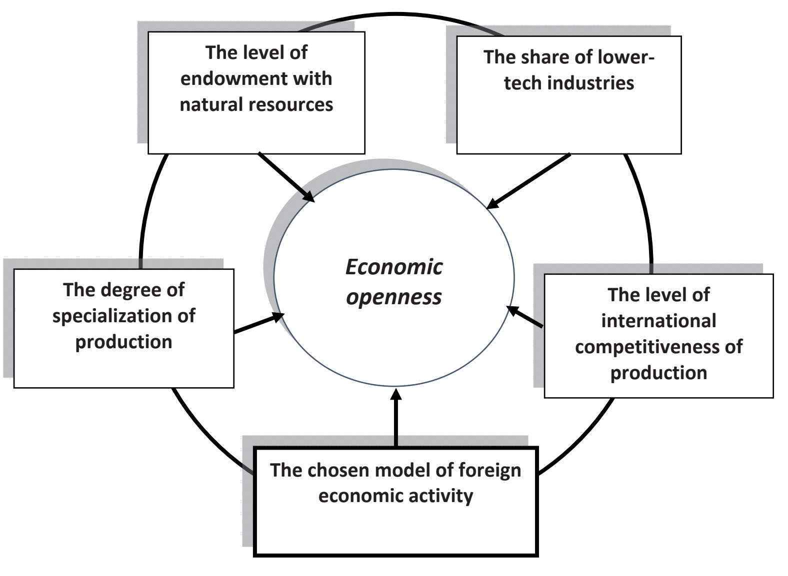

Fig. 2. Factors of economic openness (*developed by the authors*)

Of course, this list is not exhaustive. It can be supplemented with other factors. But the most important ones are listed here. All of them are interconnected and influence each other. However, in the final analysis, they manifest themselves in a generalized form through the adoption by the state of a certain model of foreign economic activity. It should be emphasized that the state's freedom of choice largely depends on the strength of these factors. For example, countries with high competitiveness of their production have more freedom to choose one or another variant of the foreign economic model. On the other hand, the limited supply of own resources will push the state towards greater openness of its economy.

And one more thing to remember: the state has more freedom of choice in the formation of financial openness than foreign trade openness. If the first one is a consequence of a particular political will and the perception of state leaders about the consequences of international currency and financial flows (subjective factor), then the second one depends more on the real state of affairs in the economy (objective factor). Although, for the sake of fairness, it should be recognized that the real state of affairs is largely determined by subjective decisions at previous stages of economic development.

3. Nine European countries (including Ukraine) were selected for analysis, which differ quite significantly in terms of economic development indicators (GDP per capita) and most often use different models of foreign economic activity. In particular, the analysis involves the countries of the Visegrad Four (Poland, Czech Republic, Slovakia and Hungary), whose economic models are most often offered as benchmarks for the Ukrainian economy. The data provided on the websites of the International Monetary Fund, the World Bank, and the CIA library served as the information base for calculating the indicators of foreign trade and financial openness. Correlation analysis is used to assess the degree of interdependence between individual indicators.

Research results. To assess the foreign trade openness of the economy, we will use the most common indicator – the ratio of the value of exports and imports of goods (foreign trade turnover, TO) to the country's GDP. 9 countries were selected as the object of the study, 8 of which are members of the European Union and Ukraine is a candidate for membership in this association. The selection includes both the most developed EU countries (Germany, France, the Netherlands), with an average level of development (Spain), and former socialist countries (Czech Republic, Slovakia, Hungary and Poland), which are somewhat inferior to the "old" members in terms of GDP per capita. It should be noted that the gap between the sample country with the highest GDP per capita (the Netherlands) and Ukraine is almost 13 times. Even its closest neighbor (Poland) is almost 4 times inferior in terms of this indicator. Of course, the level of development leaves a certain imprint on the choice of the model of openness of the economy, but it is not exclusively dominant.

Table 2 shows the indicators of the economic openness over the past 10 years. The order in which countries were placed was determined by GDP per capita (from highest to lowest). Analysis of the data in Table 2 allows us to draw several conclusions.

1. Among the selected countries, it is possible to distinguish those in which models of foreign trade openness have already been formed, and those in which models are still being formed. The first group includes the Netherlands, Germany, France, the Czech Republic and Hungary, and the second group includes all the others. The criterion for division is the dynamics of the indicator. So, if we take the Netherlands as an example, it turns out to be impossible to determine the direction of the change in the indicator. We can talk about its certain fluctuations within minor limits. An exception may be some years in which, under the influence of some external factors, the indicator may deviate from a more or less stable average value (for example, 2020, when the pandemic caused a certain reduction in world trade).

The second group is characterized by a clear direction of change in the indicator. And here two subgroups should be distinguished:

Table 2

Foreign trade openness of countries (ratio of foreign trade turnover to GDP, %) *

Countries	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
The Netherlands	152.4	151.6	152.4	157.7	148.8	156.1	158.8	155.3	145.8	154.5
Germany	86.2	85.3	84.6	86.2	84.7	87.3	88.4	87.7	81.3	89.5
France	60.8	60.6	61.0	64.1	63.7	65.1	66.8	66.2	58.8	63.9
Spain	61.0	61.8	63.9	64.0	63.9	66.9	67.6	67.1	60.1	68.2
Czech Republic	146.6	146.1	157.9	155.2	150.8	151.5	148.0	142.1	134.3	142.2
Slovakia	177.0	181.7	178.8	178.1	182.5	188.3	189.3	184.4	170.2	186.8
Hungary	164.8	163.5	168.1	167.3	163.7	165.5	162.9	160.8	156.1	162.5
Poland	89.3	90.6	93.5	95.3	99.9	104.8	107.5	106.1	105.9	117.6
Ukraine	102.4	94.2	101.9	107.8	105.9	104.1	99.0	90.7	79.4	82.8

** Calculated by the authors based on the World Bank and IMF data. URL: https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=PL-FR-NL; International Monetary Fund. URL: https://data.imf.org/regular.aspx?key=61545851*

the model of increasing openness and the model of decreasing openness. For example, over 10 years, Poland increased its openness index from 89.3 to 117.6% (increasing openness), while Ukraine's index decreased from 102.4 to 82.8%. Thus, it can be argued that in Ukraine, a model of decreasing openness is being formed.

2. If we evaluate the absolute value of the indicator, it can be stated that the economies of all countries are open to foreign trade, since their indicators significantly exceed the world average. Today, many researchers continue to use the criteria of openness proposed by the World Bank in 2016, in the Doing Business 2017 report: the highest openness group («open economies») includes economies with the proportion of exports in the country's GDP structure exceeding 35% [16]. Since not only the ratio of exports to GDP was calculated, but also the ratio of foreign trade turnover to GDP, an indicator of about 70% can be considered an indicative criterion of openness.

Some of the studied countries can be classified as moderately open (foreign trade turnover does not exceed GDP) and ultra-open, in which foreign trade turnover significantly exceeds the annual GDP. And here we can trace a certain connection between the level of economic development of the country and its belonging to a particular group. It is noticeable that more developed countries tend to be moderately open economies. Conversely, countries that relatively recently have become members of the European Union have ultra-open models. The exception to the first group is the Netherlands. However, this country has its own special model of foreign trade. The Netherlands has chosen an intermediary model: most of the imported products are purchased not for domestic consumption, but for further export.

This dependence of the model on the level of development can be explained by several reasons. Firstly, developed countries have a greater value of GDP, and therefore a fairly large-scale foreign trade makes up a smaller percentage of gross domestic product. Secondly, a developed economy gives more freedom when choosing a model of openness, since it is able to meet most of its internal needs.

The forgoing gives grounds to assert that on the way to the EU, the Ukrainian economy will change its trend from decreasing openness to increasing openness, which was typical for all «new» members of the European community.

3. A more detailed analysis of openness based on the calculation of the ratio of net exports to GDP (Table 3) brings about one more option for classifying countries. There is a group of countries for which this indicator is more or less stable and fluctuates only within 1-2 percentage points under the influence of changes in the global

market situation. This group mainly includes countries with a higher level of development, which confirms the earlier conclusion about the formation of their model of foreign trade openness. On the contrary, the dynamism of relative net exports is typical for countries with lower GDP per capita. Slovakia and Hungary show a tendency to balance exports and imports (decrease in relative net exports). The Czech Republic and Poland increase the positive relative balance of the foreign trade.

Ukraine has a consistently high negative value of the relative indicator of net exports, which slightly improves only in the crisis years (2014–2015, 2020–2021), when imports decrease faster than exports fall. Building a post-war model of openness, Ukraine will have to solve this problem both by reducing imports (for example, by increasing its own gas extraction and biofuel production) and by expanding exports through lifting restrictions that still exist today.

No less important for identifying the model of economic openness is the analysis of financial openness based on the indicator, which is calculated by comparing the sum of foreign assets and liabilities to non-residents with the country's GDP (Table 4). We will use the previously formulated criteria for classifying models of financial openness.

1. *According to the indicator of the degree of formation*. It is easy to see that the indicator of financial openness is more dynamic than the indicator of foreign trade openness. This is due to the greater sensitivity of financial indicators to the economic situation in the world (reevaluation of both the value of assets and the value of liabilities) and the much greater mobility of financial flows (especially for portfolio investments and loans).

Due to significant fluctuations of financial openness indicators over time, it is quite difficult to detect dependence and trend with the help of simple visual observation. Therefore, we will calculate the correlation indicators of financial openness and time changes. As a criterion for the formation of the model, we will choose the value of the correlation coefficient at the level of 0.5: if the correlation coefficient is less than this indicator (that is, fluctuations of financial openness are determined to a greater extent not by time dynamics, but by other factors), then the model can be considered formed and vice versa.

According to the results of calculations, the formed models of financial openness include the economies of the Netherlands (0.348), Germany (0.474), Hungary (0.339), Poland (- 0.309), and Ukraine (- 0.121), while the emerging models include the economies of France (0.686), Spain (0.805), the Czech Republic (0.882), and Slovakia (0.924). It should be noted that the models that are being formed are characterized by a steady upward trend in the level of openness, while in Poland and Ukraine, albeit insignificant, a downward trend has been revealed.

Table 3

Net exports as a percentage of GDP*

Countries	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
The Netherlands	9.5	10.6	10.7	7.5	10.2	10.7	10.5	9.8	10.0	10.2
Germany	6.1	5.9	6.6	7.6	7.4	7.1	6.1	5.7	5.7	5.4
France	-1.4	-1.1	-1.3	-0.4	-0.5	-0.9	-1.2	-0.9	-1.7	-1.3
Spain	2.0	3.9	3.1	3.0	4.0	3.6	2.7	2.9	1.5	1.5
Czech Republic	4.9	5.7	6.4	5.9	7.6	7.5	6.0	6.0	6.8	3.0
Slovakia	4.0	4.5	3.9	1.2	2.0	1.7	0.8	0.1	2.2	0.1
Hungary	6.7	6.9	6.3	8.0	8.7	6.8	4.3	2.3	2.0	0.4
Poland	-0.9	1.3	0.9	2.7	3.7	3.7	3.0	4.8	6.8	4.6
Ukraine	-7.8	-8.2	-3.5	-2.6	-6.9	-7.8	-8.7	-8.1	-1.5	-1.3

* *Calculated by the authors based on the World Bank and IMF data. URL: https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=PL-FR-NL; International Monetary Fund. URL: https://data.imf.org/regular.aspx?key=61545851*

Table 4

Financial openness (ratio of the sum of foreign assets and liabilities to non-residents to GDP, %) *

Countries	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
The Netherlands	2031.1	2078.7	1983.5	2292.0	2309.9	2484.2	2132.2	2253.7	2370.0	2041.4
Germany	523.1	488.1	451.8	477.6	465.9	508.1	454.5	497.8	598.5	545.2
France	615.4	592.1	569.0	593.8	585.0	628.5	586.8	648.8	787.3	691.9
Spain	387.8	384.1	363.1	395.6	392.1	442.9	404.0	436.6	533.3	471.2
Czech Republic	206.7	217.5	207.2	228.2	237.2	303.7	264.7	267.1	302.0	293.6
Slovakia	190.4	206.1	191.1	193.3	207.8	268.4	252.8	262.9	305.7	307.8
Hungary	593.8	558.8	487.2	528.0	588.4	539.2	391.3	497.6	772.6	693.4
Poland	165.5	165.8	148.9	157.9	170.6	173.6	149.7	150.4	164.0	151.0
Ukraine	183.1	178.4	219.5	305.5	295.7	251.8	216.8	201.3	206.4	171.5

* *Calculated by the authors based on the World Bank and IMF data. URL: https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=PL-FR-NL; International Monetary Fund. URL: https://data.imf.org/regular.aspx?key=61545851*

The latter position cannot be the basis for making a forecast about a decrease in the level of financial openness of Ukraine in the post-war period. On the contrary, the need to attract both foreign investments and loan resources will require changing the model to a dynamic one with a positive trend in the indicator of financial openness. The formation of such a model should become one of the key moments of the post-war development of Ukraine.

2. Unlike foreign trade openness, there are no criteria for financial openness at all. The share of international capital flows in world GDP can serve as certain benchmarks for this [17]. However, for countries with a high and medium level of development, such an indicator will be clearly too small. Therefore, for the study, as a criterion of openness, we will use a twofold excess of the sum of foreign assets and liabilities to the country's GDP. According to this criterion, only Ukraine and Poland should be classified as countries with moderate openness. All other economies can be considered ultra-open. Again, a special position is occupied by the Netherlands, whose indicator of financial openness is simply fantastic: it is more than 20 times higher than the country's GDP. As already noted, the foreign economic model of this country is oriented towards the performance of intermediary functions both in foreign trade and in the international movement of capital.

Since it is generally recognized that in the post-war period the attraction of external funds will be the decisive source of investment will be, then, most likely, within two or three post-war years, the indicator of financial openness of the Ukrainian economy will rise at least to the level of the Czech Republic or Slovakia. At the same time, it is important to form a model that would ensure this growth not at the expense of borrowing, but at the expense of foreign direct investments representing foreign exchange and financial flows that do not generate an increase in external debt.

3. The net investment position allows, firstly, to identify the country as a net recipient or as a net investor, and secondly, compared to GDP, to assess the degree of influence of this indicator on internal processes.

As the Table 5 shows, only two countries in the sample (the Netherlands and Germany) are net investors with a growing value of the relative indicator. All others belong to the net recipients to one degree or another. The largest relative net recipients as of 2021 were Spain and Slovakia. However, while Spain is trying to reduce its relative negative net investment position resulted from severe external debt problems a few years ago, Slovakia is demonstrating only fluctuations in this indicator without a clear tendency to improve it. This creates a threat of approaching a critical limit, beyond which financial problems may arise for this country as well.

As for the other studied countries, they are characterized by a decrease in the relative indicator of the net investment position (with the exception of France, where it grew almost throughout the period). Ukraine has the lowest net investment position. There is every reason to predict that it will grow in the post-war period, since, on the one hand, the country will not have free funds to increase foreign assets, and on the other hand, it should become an attractive place for foreign investors.

Thus, it can be noted that only Slovakia has a model based on the relative net investment position criterion. All other countries have dynamic models that are in the process of formation.

As already mentioned, indicators of foreign trade and financial openness of each country can be compared according to a certain criterion and thus assessed. In contrast, per capita indicators do not yet have any criteria (and the probability of their calculation is generally very doubtful). That is why they are called «relative indicators», as they can only be evaluated in relation to other countries.

A significant differentiation of these indicators is visible, although some trends can be traced here as well. Thus, FDI per capita shows the highest correlation with the level of the country's development. Only Hungary «drops out» of the general scheme, which, according to this indicator, generally ranks second after the Netherlands, ahead of Germany, France and Spain. The same conclusion applies to foreign direct investments attracted to the country. Therefore, the phenomenon of Hungary deserves a special analysis. Although it can already be said that a country with an average level of development and such indicators of trade and financial openness is very much at risk of becoming dependent on external factors.

Ukraine's significant lag behind the studied indicators can only be explained by the first steps towards full-fledged European integration. Successful completion of the application stage and obtaining the status of a full member of the EU will be accompanied by the transition to the regime of free movement of goods and capital within the framework of the association. However, it should be understood that in order to achieve the closest indicator of FDI per capita, at least to the level of Poland, it will be necessary to increase foreign direct investment in Ukraine by at least 5 times. It will be impossible to achieve this in a short time. Therefore, in the coming years there will be significant gaps between the values of the relative indicators of openness of Ukraine and other European countries.

Interesting results can be observed by comparing the calculations of pairwise correlation coefficients for various indicators that were used to calculate the level of foreign trade openness and financial openness of the studied countries (Table 6), in particular, export of goods and services, foreign direct investment, GDP and export quota.

Table 5

Net international investment position as a percentage of GDP*

Countries	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
The Netherlands	31,3	31,9	43,8	49,0	59,7	65,2	70,9	90,0	120,8	88,4
Germany	22,7	25,7	26,5	33,9	37,3	47,0	50,6	58,7	69,6	68,3
France	-13,2	-17,2	-14,3	-12,7	-12,4	-21,3	-18,7	-24,7	-33,1	-30,9
Spain	-93,4	-96,0	-87,8	-86,9	-81,5	-91,0	-76,8	-74,2	-91,9	-68,4
Czech Republic	-46,9	-40,1	-33,0	-32,4	-26,0	-27,5	-23,7	-20,2	-18,0	-15,6
Slovakia	-62,8	-64,6	-58,4	-62,9	-63,3	-72,6	-67,9	-66,7	-71,4	-59,1
Hungary	-93,0	-85,3	-71,6	-65,6	-56,6	-58,0	-48,4	-48,8	-54,1	-49,5
Poland	-67,3	-71,4	-61,4	-58,4	-61,9	-65,1	-52,6	-49,2	-45,7	-38,0
Ukraine	-27,9	-35,3	-37,6	-41,8	-37,6	-28,6	-19,8	-18,2	-14,1	-12,5

** Calculated by the authors based on the World Bank and IMF data. URL: https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=PL-FR-NL; International Monetary Fund. URL: https://data.imf.org/regular.aspx?key=61545851*

Table 6

Relative indicators of openness of the economy
(thousands of dollars per capita) *

Country	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
The Netherlands										
FTO	76.2	78.9	80.5	71.3	68.7	76.5	85.1	82.6	77.8	91.5
DIA	308.7	345.5	316.9	332.2	343.3	401.4	379.8	389.9	399.1	374.6
FDI	256.0	289.1	269.4	273.1	281.9	333.3	313.6	319.0	324.3	309.8
Germany										
FTO	37.6	39.2	40.4	35.4	35.8	39.0	42.3	40.8	37.4	44.8
DIA	23.8	25.8	24.5	23.9	24.2	28.9	29.7	31.3	35.4	35.8
FDI	17.9	19.7	18.0	17.0	17.2	20.8	21.1	21.6	25.0	24.0
France										
FTO	25.6	26.7	27.2	24.3	24.3	26.1	28.7	27.8	23.7	28.6
DIA	26.9	27.7	26.4	25.3	25.4	28.4	28.5	28.9	30.4	29.9
FDI	17.6	18.9	17.1	16.3	16.3	18.9	18.6	19.6	21.9	22.4
Spain										
FTO	17.1	17.9	18.7	16.4	16.9	18.8	20.6	19.9	16.4	20.8
DIA	15.0	15.8	14.5	14.3	14.9	17.4	16.8	17.4	17.7	17.1
FDI	15.5	17.3	16.0	15.4	16.1	19.4	20.0	20.5	23.1	22.3
Czech Republic										
FTO	29.0	29.3	31.2	27.5	27.8	31.0	34.5	33.5	30.7	37.3
DIA	3.8	4.3	4.0	4.0	4.1	5.8	6.3	6.7	7.3	7.6
FDI	15.0	15.1	13.8	13.2	13.7	17.4	17.8	18.5	20.7	21.2
Slovakia										
FTO	30.7	33.2	33.3	29.1	30.2	32.8	36.8	35.5	32.7	39.3
DIA	2.2	2.4	1.9	2.0	2.9	3.2	3.2	3.3	3.9	3.7
FDI	11.5	12.2	10.6	10.0	11.1	13.3	13.4	13.5	14.7	13.6
Hungary										
FTO	21.6	22.6	24.2	21.4	21.7	24.3	27.0	27.2	25.4	30.8
DIA	24.3	24.4	22.0	22.1	27.7	26.9	19.6	28.8	47.5	49.1
FDI	30.0	30.2	28.0	27.4	32.5	32.5	25.6	35.1	54.7	57.0
Poland										
FTO	11.7	12.4	13.3	12.0	12.4	14.6	16.6	16.7	16.7	21.0
DIA	1.9	1.9	1.7	1.6	1.7	1.9	1.8	1.8	2.0	2.1
FDI	6.6	7.2	6.6	5.9	5.9	7.5	7.2	7.6	8.1	8.6
Ukraine										
FTO	4.1	4.0	3.0	2.2	2.2	2.6	2.9	3.2	2.8	3.8
DIA	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
FDI	1.4	1.5	1.1	1.1	1.1	1.1	1.1	1.3	1.3	1.6

FTO - foreign trade turnover; DIA – direct investment abroad; FDI - foreign direct investment.

** Calculated by the authors based on the World Bank, IMF and CIA data. URL: https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=PL-FR-NL; International Monetary Fund. URL: https://data.imf.org/regular.aspx?key=61545851; Central Intelligence Agency [Електронний ресурс]. Режим доступу: https://www.cia.gov/the-world-factbook/countries/*

Table 6

Correlation coefficients between indicators of openness*

Countries	Export – FDI	Export – GDP	GDP – FDI	Export quota -FDI
The Netherlands	0.485	0.964	0.471	0.181
Germany	0.626	0.942	0.759	-0.177
France	0.336	0.760	0.505	-0.164
Spain	0.385	0.878	0.471	0.111
Czech Republic	0.805	0.993	0.926	-0.823
Slovakia	0.644	0.946	0.707	0.054
Hungary	0.540	0.979	0.654	-0.786
Poland	0.853	0.955	0.899	0.697
Ukraine	0.912	0.947	0.929	0.008

** Calculated by the authors in the World Bank and IMF data. URL: https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=PL-FR-NL; International Monetary Fund. URL: https://data.imf.org/regular.aspx?key=61545851*

The highest level of interdependence is demonstrated by the pair «Exports – GDP»: for most countries, this indicator is in the range of 0.95-0.99. And this is the only case when the dynamics of these indicators coincided so much for all countries over the last decade. All other pairs show not only a different degree of closeness of connection, but sometimes even a different direction. Most likely, this is due to the presence of foreign direct investment in these pairs, which for most countries is not closely related to either trade or GDP. For the pairs «Export – FDI» and «GDP – FDI», exceptions are Czech Republic, Poland and Ukraine (partially – France and Slovakia).

It is not possible to draw any generalizing conclusion from the analysis of the relationship between the pair “Export quota – FDI”. Here, the relationship is either completely absent (not significant), or if it is significant, it has opposite signs (for Poland, the value of the coefficient is positive, for Czech Republic and Hungary – negative). In other words, the conducted research does not confirm the opinion widespread in the economic literature that foreign direct investments significantly stimulate exports.

Conclusions. The conducted analysis demonstrates a fairly wide range of existing models of foreign economic openness. Moreover, there are no at least two countries with identical models among the studied countries (Table 7). This allows to conclude that, most likely, Ukraine cannot simply adopt a model of some country and try to reproduce it in itself, since the tasks to be solved by Ukraine are specific.

At the same time, when forming the post-war model of foreign economic openness of Ukraine, it is necessary to take into account both the specifics of the tasks to be solved and the general trends characteristic of the modern world. Based on the results of the research, it was established that model of foreign trade should be dynamic, changing its type from falling to growing with a gradual transition to a positive value of net exports. The model of financial openness should change in the direction of transition from formed to dynamic with positive dynamics of the openness indicator. However, the growth must be at the expense of non-debt-creating foreign exchange flows, since the level of public debt (especially external debt) will be too high anyway. Under this condition, the growing negative value of the net international

Table 7

Models of foreign economic openness

Models			The Netherlands	Germany	France	Spain	Czech Republic	Slovakia	Hungary	Poland	Ukraine
Foreign trade openness	By degree of formation	Formed	+	+	+		+		+		
		Are forming				+↑		+↑		+↑	+↓
	By degree of openness	Moderately open		+	+	+					+
		Over-opened	+				+	+	+	+	
	According to the indicator of relative net export	Stable	+	+	+	+					
		Dynamic					+↑	+↓	+↓	+↑	+↑
Financial openness	By degree of formation	Formed	+	+					+	+	+
		Are forming			+↑	+↑	+↑	+↑			
	By degree of openness	Moderately open								+	+
		Over-opened	+	+	+	+	+	+	+		
	According to the indicator of the relative net investment position	Stable						+			
		Dynamic	+↑	+↑	+↓	+↑	+↑		+↑	+↑	+↑

investment position will not pose an additional threat to the country.

Further research will require a structural analysis of openness indicators and geographical and commodity features, since most of the external threats will be related to that. However, this will be the focus of further research.

Bibliography

1. World Bank. URL: https://data.worldbank.org/indicator/NE.EXP.GNFS.ZS?end=2021&start=1986&view=chart

2. Задоя А.О., Боцула А.П. Міжнародні інтеграційні та дезінтеграційні процеси: суперечливі наслідки. *Академічний огляд*. 2017. №1. С. 92–97.

3. Даниленко О.Л. Відкрита економіка як передумова взаємодії внутрішнього і зовнішнього ринків. URL: http://www.rusnauka.com/ONG/Economics/2_danilenko%20o.l..doc.htm.

4. Олефір В.К. Оцінка відкритості економіки України. *Економічний вісник НТУУ «КПІ»: збірник наукових праць*. 2012. № 9. С. 115–120.

5. Ладиченко К.І. Індикатори вимірювання зовнішньоторговельної відкритості національної економіки. *Економічний простір: [зб. наук. пр.]; ДВНЗ «Придніпровська державна академія будівництва та архітектури»*. – Дніпропетровськ, 2015. № 95. С. 16 – 25.

6. Саніна О.Р. Індикатори оцінки відкритості економічної системи України. *Менеджмент та підприємництво в Україні: етапи становлення і проблеми розвитку:* [зб. наук. пр. (спец. вип. Інст. підприємництва та перспективних технологій) / відп. ред. О.Є. Кузьмін]. Львів: Видавництво Львівської політехніки, 2011. С. 158–166.

7. Біла С.О. Сучасні тренди розвитку зовнішньоторговельних відносин та ризики «неопротекціонізму». *Стратегія розвитку України*. 2017. №1. С. 11–16.

8. Waugh M. & Ravikumar B. (2016). Measuring openness to trade. *Journal of Economic Dynamics and Control,* 72(6), 29–41.

9. Rodrik, D. (2018). What do trade agreements really do? *Journal of Economic Perspectives,* 32(2), 73–90.

10. Lane P. & Milesi-Ferretti G. (2017). *International financial integration in the aftermath of the global financial crisis* (IMF Working Paper. No. 17/115).

11. Saadma T. & Steiner A. (2016). Measuring de-facto financial openness: A new index (*Beiträge zur Jahrestagung des Vereins für Socialpolitik.* 2016. No. F16-V3). Kiel and Hamburg: ZBW.

12. Gräbner C., Heimberger P., Kapeller J. et al. Understanding economic openness: a review of existing measures. *Review World Economics*, 2021, 157, 87–120. URL: https://doi.org/10.1007/s10290-020-00391-1.

13. World Bank. URL: https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=PL-FR-NL.

14. International Monetary Fund. URL: https://data.imf.org/regular.aspx?key=61545851.

15. Central Intelligence Agency. URL: https://www.cia.gov/the-world-factbook/countries/.

16. Doing Business 2017: An Opportunity for All. *World Bank Group. Flagship Report*. Washington: WBG, 2016. 356 p.

17. Бублик Є.О. Взаємозв'язок фінансової відкритості та економічного зростання. *Економіка і прогнозування*. 2020. №1. С.142–157.

References

1. World Bank. Available at: https://data.worldbank.org/indicator/NE.EXP.GNFS.ZS?end=2021&start=1986&view=chart (Accessed 25 November 2022) (in English).

2. Zadoya A.O., Botsula A.P. (2017). *Mizhnarodni intehratsiyni ta dezintehratsiyni protsesy: superechlyvi naslidky* [International integration and disintegration processes: contradictory consequences]. *Akademichnyy ohlyad* [Academic review], no. 1, pp. 92-97 (in Ukrainian).

3. Danylenko O.L. *Vidkryta ekonomika yak peredumova vzayemodiyi vnutrishn'oho i zovnishn'oho rynkiv* [Open economy as a prerequisite for the interaction of internal and external markets]. URL: http://www.rusnauka.com/ONG/Economics/2_danilenko%20o.l..doc.htm (Accessed 28 November 2022) (in Ukrainian).

4. Olefir V.K. (2012). *Otsinka vidkrytosti ekonomiky Ukrayiny* [Evaluation of the openness of the economy of Ukraine]. *Ekonomichnyy visnyk NTUU "KPI": zbirnyk naukovykh prats'* [Economic bulletin of NTUU "KPI": a collection of scientific papers], no. 9, pp. 115-120 (in Ukrainian).

5. Ladychenko K.I. (2015). *Indykatory vymiryuvannya zovnishn'otorhovel'noyi vidkrytosti natsional'noyi ekonomiky* [Indicators for measuring the foreign trade openness of the national economy]. *Ekonomichnyy prostir: (zb. nauk. pr.); DVNZ "Prydniprovs'ka derzhavna akademiya budivnytstva ta arkhitektury"* [Economic space: (Coll. of science pr.); State Higher Secondary School «Prydniprovsk State Academy of Construction and Architecture»], Dnipropetrovsk, no. 95. P. 16 – 25 (in Ukrainian).

6. Sanina O.R. (2011). *Indykatory otsinky vidkrytosti ekonomichnoyi systemy Ukrayiny* [Indicators of assessment of the openness of the economic system of Ukraine]. *Menedzhment ta pidpryyemnytstvo v Ukrayini: etapy stanovlennya i problemy rozvytku: (zb. nauk. pr. (spets. vyp. Inst. pidpryyemnytstva ta perspektyvnykh tekhnolohiy), vidp. red. O. YE. Kuz'min)* [Management and entrepreneurship in Ukraine: stages of formation and development problems: (Coll. of science pr. (special issue. Institute of entrepreneurship and promising technologies), resp. ed. O. E. Kuzmin)]. Lviv, Publishing House of Lviv Polytechnic. P. 158 – 166 (in Ukrainian).

7. Bila S.O. (2017). *Suchasni trendy rozvytku zovnishn'otorhovel'nykh vidnosyn ta ryzyky "neoprotektsionizmu"* [Modern trends in the development of foreign trade relations and the risks of "neo-protectionism"]. *Stratehiya rozvytku Ukrayiny* [Development strategy of Ukraine], no. 1, pp. 11-16 (in Ukrainian).

8. Waugh M. & Ravikumar B. (2016). Measuring openness to trade. Journal of Economic Dynamics and Control, no. 72(6), pp. 29-41 (in English).

9. Rodrik D. (2018). What do trade agreements really do? Journal of Economic Perspectives, no. 32(2), pp. 73-90 (in English).

10. Lane P. & Milesi-Ferretti G. (2017). International financial integration in the aftermath of the global financial crisis. IMF Working Paper, no. 17(115) (in English).

11. Saadma T. & Steiner A. (2016). Measuring de-facto financial openness: A new index. Beiträge zur Jahrestagung des Vereins für Socialpolitik, no. F16-V3, Kiel and Hamburg: ZBW (in English).

12. Gräbner C., Heimberger P., Kapeller J. et al. (2021). Understanding economic openness: a review of existing measures. Review World Economics, no. 157, pp. 87–120. URL: https://doi.org/10.1007/s10290-020-00391-1 (Accessed 3 December 2022) (in English).

13. World Bank. URL: https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=PL-FR-NL (Accessed 5 December 2022) (in English).

14. International Monetary Fund. URL: https://data.imf.org/regular.aspx?key=61545851 (Accessed 5 December 2022) (in English).

15. Central Intelligence Agency. URL: https://www.cia.gov/the-world-factbook/countries/ (Accessed 5 December 2022) (in English).

16. Doing Business 2017: An Opportunity for All. World Bank Group. Flagship Report. Washington: WBG, 2016. 356 p.

17. Bublyk E.O. (2020). *Vzayemozv'yazok finansovoyi vidkrytosti ta ekonomichnoho zrostannya* [Relationship between financial openness and economic growth]. *Ekonomika i prohnozuvannya* [Economics and forecasting], no. 1, pp.142-157 (in Ukrainian).

MODELS OF ECONOMIC OPENNESS OF EUROPEAN COUNTRIES AND UKRAINE: A COMPARATIVE ANALYSIS

Oleksandr A. Zadoia, Alfred Nobel University, Dnipro (Ukraine).
E-mail: o.zadoia@duan.edu.ua
Phan Minh Duc, Academy of Journalism and Communication, Hanoi (Vietnam).
E-mail: phanminhduc@ajc.edu.vn
DOI 10.32342/2074-5354-2023-1-58-19

Keywords: economic growth, openness of the economy, integration processes, foreign economic model, foreign trade openness, financial openness, foreign trade turnover, net investment position, foreign direct investment, net exports
JEL: ***F11, F43, F21, P33***

The article raises the question of whether the openness of an individual country's economy corresponds to the level of its economic development. Retrospective analysis indicates the existence of a long-term close interdependence of the growth of international trade and world GDP with an accelerated increase in the share of exports. But in recent years, this share, having reached its maximum in 2008, has demonstrated an amplitude fluctuation with a range of 30%. Therefore, a hypothesis has been put forward regarding the existence of a probable limit of export-led growth and economic development at the expense of increasing the level of openness of the national economy.

In the study, the authors conduct an analysis of the models of economic openness used in a number of European countries, compare them with the Ukrainian model, and put forward proposals regarding the principles of building a post-war foreign economic model of Ukraine.

In the process of research, the authors have designed a system of absolute and relative indicators of economic openness and determined a number of factors affecting the degree of economic openness. The concepts of financial openness and foreign trade openness have been specified. It has been proved that the state has more freedom of choice in the formation of financial openness than foreign trade openness.

Based on the analysis of a sample of countries (8 countries of the European Union with different levels of economic development, including former socialist countries and Ukraine), the authors have explored the dynamics of foreign trade openness over the past ten years. As a result, two groups of countries have been identified: a group with a certain fluctuation of the indicator and a group with a clear direction of the change in the indicator (either decrease or increase). It has been found that more developed countries, as a rule, belong to moderately open economies. In contrast, countries that relatively recently have become members of the European Union have ultra-open models.

A more detailed analysis of economic openness has been carried out by calculating the ratio of net exports to GDP. This made it possible to qualify countries in another way: economies where the indicator fluctuates within 1-2% and economies with a dynamic indicator. It has been determined that states that have recently switched to a mixed economic model tend to show an increase in the positive net exports.

Given the fact that there are no generally accepted indicators of financial openness, the authors have proposed to use a two-fold excess of the country's GDP by the sum of foreign assets and liabilities as a criterion of openness. According to this criterion, only Ukraine and Poland should be classified as countries with moderate openness. All other economies can be considered ultra-open.

The analysis of the net investment position allows, firstly, to identify a country as a net recipient or a net investor, and secondly, to assess the degree of influence of this indicator on internal processes in comparison with GDP.

The relative indicators of openness and pair correlation have been also calculated for the indicators used to determine the level of foreign trade openness and financial openness of the countries under study, in particular: exports of goods and services; foreign direct investment, GDP and export quota.

Based on the results of the study, it has been found that Ukraine's foreign trade model should be dynamic, changing its type from decreasing to growing with a gradual transition to a positive net export value. The model of financial openness should change in the direction of transition from the existing

model to dynamic one with positive dynamics of the openness indicator. However, growth should be driven by non-debt-creating foreign exchange flows, since the level of public debt (in particular, external debt) will be too high anyway. Under this condition, the growing negative value of the net international investment position will not create an additional threat to the country.

Одержано 23.12.2022.