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СВІТОВЕ ГОСПОДАРСТВО І МІЖНАРОДНІ ЕКОНОМІЧНІ ВІДНОСИНИ

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THE IMPACT OF EXTERNAL FACTORS ON THE REAL SECTOR DEVELOPMENT OF THE NORTHERN EUROPE NATIONAL ECONOMIES

ВПЛИВ ЗОВНІШНІХ ФАКТОРІВ НА РОЗВИТКУ РЕАЛЬНОГО СЕКТОРУ НАЦІОНАЛЬНИХ ЕКОНОМІК ПІВНІЧНОЇ ЄВРОПИ

ANNOTATION

The article analyzes the state of the real sector of the economies of Northern Europe and factors that influence the formation of their real sectors. The subject of the study is the structure and dynamics of the real sector indicators. Countries such as the Kingdom of Sweden, the Kingdom of Norway and the Republic of Finland in the period from 2015 to 2019 were selected for the study. In order to provide a generalized description of the state of the real sector of the country, it was decided to divide the analysis into more detailed parts: it is started with the country's nominal GDP in USD, nominal GDP in national currency and GDP per capita analysis, after that there is given the structure of GDP of each country and the components that ensure its growth are defined, then moved to the assessment of the external factors` impact on real sectors of the economies by means of Granger casualty test results analysis where the dependent variable is the annual nominal GDP of the countries, and the independent variables are the US dollar exchange rate to the national currency, assets and liabilities of international investment position, net international investment position, public debt and export price change. The data is obtained from the IMF statistical database for the period from 1990 to 2019.

Key words: real sector, external sector indicators, Northern Europe, gross domestic product, saving-investment balance.

АНОТАЦІЯ

У статті проаналізовано стан реального сектору економік Північної Європи та фактори, що впливають на формування їх реальних секторів. Предметом дослідження є структура та динаміка показників реального сектору. Для дослідження були обрані такі країни, як Королівство Швеція, Королівство Норвегія та Республіка Фінляндія в період з 2015 року по 2019 рік. Для того, щоб надати узагальнений опис стану реального сектору країн, було вирішено розділити аналіз на більш детальні частини: розпочато з аналізу номінального ВВП країн, вираженого в доларах США, номінального ВВП, вираженого в національній валюті, та ВВП на душу населення, після цього визначається структура ВВП кожної країни та визначаються компоненти, що забезпечують його зростання, далі надаються висновки за аналізом балансу заощаджень та інвестицій Швеції, Норвегії та Фінляндії, а після цього оцінюється вплив зовнішніх факторів на реальний сектор економік країн Північної Європи за допомогою аналізу результатів тесту причинності Грейнджера, де залежною змінною є річний номінальний ВВП країн в млрд. дол. США, а незалежними змінними є: курс долара США до національної валюти, активи міжнародної інвестиційної позиції в млрд. дол. США, пасиви міжнародної інвестиційної позиції в млрд. дол. США, чиста міжнародна інвестиційна позиція в млрд. дол. США, державний борг у % ВВП та зміна експортних цін країн (%). Дані отримані із статистичної бази даних Міжнародного валютного фонду за період з 1990 року по 2019 рік. Тема дослідження є актуальною на сьогоднішній день, адже в реальному секторі країн зовнішньоекономічна діяльність з кожним роком відіграє все більш значиму роль, яка, в свою чергу, не може не залишити за собою певні наслідки – чи то позитивні, чи негативні. Адже зміцнення реального обмінного курсу може збільшити безробіття в країнах, також, можуть існувати зв'язки між прямими іноземними інвестиціями, відкритістю торгівлі та економічним зростанням країн. Однак, цей вплив буде сильнішим, коли країна буде більш відкритою для зовнішньоторговельної діяльності. Волатильність обмінних курсів має негативний вплив на економічне зростання. В роботі використовуються загальнонаукові методи: наукова абстракція, порівняльний метод, метод аналізу та синтезу, систематизація та узагальнення, метод розрахунку, побудова векторної авторегресії.

Ключові слова: реальний сектор, показники зовнішнього сектору, Північна Європа, валовий внутрішній продукт, баланс заощаджень та інвестицій.

АННОТАЦИЯ

В статье анализируется состояние реального сектора экономик Северной Европы и факторы, влияющие на формирование их реальных секторов. Предметом исследования является структура и динамика показателей реального сектора. Для исследования были выбраны такие страны, как Королевство Швеция, Королевство Норвегия и Республика Финляндия в период с 2015 года по 2019 год. Для того, чтобы предоставить обобщенное описание состояния реального сектора стран, было решено разделить анализ на более детальные части: было начато с анализа номинального ВВП стран, выраженного в долларах США, номинального ВВП, выраженного в национальной валюте и ВВП на душу населения, после этого определяется структура ВВП каждой страны и определяются компоненты, обеспечивающие его рост, а затем оценивается влияние внешних факторов на реальный сектор экономики, с помощью анализа результатов теста причинности Грейнджера, где зависимой переменной является годовой номинальный ВВП стран, а независимыми переменными являются: курс доллара США к национальной валюте, активы и пассивы международной инвестиционной позиции, чистая международная инвестиционная позиция, государственный долг и изменение экспортных цен. Данные получены из статистической базы данных МВФ за период с 1990 по 2019 год.

Ключевые слова: реальный сектор, показатели внешнего сектора, Северная Европа, валовой внутренний продукт, баланс сбережений и инвестиций.

Introduction and the problem statement. Sweden's economy is focused on the services sector with the share of 65.4% [7], in the Norwegian economy this segment is slightly less – 64%, and Finland is the leader, as services account for 69.1% of its GDP. The most industrialized country is Norway – the industrial sector accounts for 33.7% of GDP, followed by Sweden with 33%, and in the Finnish economy the share of industry is 28.2%. The smallest share in the economies of Northern Europe is the agricultural sector: in Finland it accounts for 2.7%, in Norway – 2.3%, and only 1.6% in Sweden.

Nowadays, the stability of the real sector of economies of the Nordic countries largely depends on the state of foreign economic relations and other external factors. And for this very reason, an individual country should take measures to prevent instability.

Analysis of recent research and publications. In modern literature different scientists deal with theoretical questions concerning external sector and its influence on economic growth. Some authors note that the components of foreign economic activity can be a resource of efficiency and growth, such as international trade (Md. H. Ahamad [1]), the inflow of foreign direct investment (R. Narula and A. Pineli [5]), flexible exchange rates, depreciated exchange rates (M. Kogid, R. Asid, J. Lily and V. Mulok [4]) and in some cases external debt. The country's export orientation helps to improve the balance of payments, investment provides access to international markets, creates jobs, accumulates capital, supplies technology and management skills. Given the efficient use of external debt, it can also contribute to growth, namely through the direction of productive investment with a rate of return that is higher than the interest rate on debt. But, at the same time, all these components of the external sector may adversely affect the national economies. Not all exports can contribute to economic growth equally, potential benefits are not equal for investors from different countries of origin, FDI can lead to capital outflows through profits (Rodionova T.A. [6]), excessive devaluation of the exchange rate can jeopardize financial stability of banks and the borrower's ability to repay loans, excessive amounts and inefficient external debt management can be a burden on the economy. Thus, the impact of individual indicators can be both positive and negative, which is due to the characteristics of a country.

The purpose of the article. Identification of external economic factors that influence the formation of real sectors of the economies of the Nordic countries.

Presentation of the main material. To compare the size of their real sectors, it is necessary to monitor the GDP of these countries. The following were selected for analysis: nominal GDP in national currency, nominal GDP in US dollars and GDP per capita. Thus, the average value of Sweden's GDP for 2015-19 is $529 billion, which is 1.3 and 2.1 times more than the GDP of Norway and Finland, respectively (Table 1). Sweden's GDP grows until 2018, and next year decreases by $27.2 billion, while, at the same time, GDP in national currency grows throughout. This is due to the depreciation of the Swedish krona against the US dollar.

The dynamics of Norway's GDP, expressed both in the national currency and in US dollars, is very volatile: in some years the figure decreases, in some – increases. In the case of Norway, there is also an increase in GDP in the national currency, and a decrease in US dollars, and the reason for this is the same.

The situation is identical with the Finnish economy, as the GDP, calculated in euros, grows throughout the period, but in 2019 it decreased by 1.7% in US dollars. And the depreciation of the euro against the US dollar this year was 2.3%.

It is possible to look at GDP from another point of view, namely to analyze GDP per capita, and in this case the leader is Norway, because the average value of the figure is 75.5 thousand US dollars per person, which is 1.5 times more the average value of Sweden (52.7 thousand US dollars) and 1.6 times than in Finland (46.3 thousand US dollars). Now it is necessary to analyze in more detail the real sector of each of the countries with its features.

Sweden's small, open and competitive economy has reached a high standard of living thanks to a combination of free market capitalism and high social benefits. Forest, hydropower and iron ore are the resource base of the productive economy, which relies heavily on foreign trade. Exports, including engines and other machinery, vehicles and telecommunications equipment, account for more than 44% of GDP. In the short and medium term, Sweden's economic challenges include the

Table 1

Comparing of GDP of Sweden, Norway and Finland for 2015–19

	2015	2016	2017	2018	2019
Sweden					
GDP, bln. of national currency	4260	4415	4625	4828	5022
GDP, bln. of USD	503,65	515,74	540,6	556,07	528,9
GDP per capita, USD	51545	51965	53792	54589	51610
Norway					
GDP, bln. of national currency	3111	3098	3295	3530	3549
GDP, bln. of USD	385,8	368,8	398,4	434,2	417,6
GDP per capita, USD	74355	70459	75497	81735	75420
Finland					
GDP, bln. of national currency	211,4	217,5	225,9	233,7	240,6
GDP, bln. of USD	232,97	239,11	252,9	274,2	269,6
GDP per capita, USD	42785	43784	46316	50021	48654

Source: [2; 3; 8]

provision of affordable housing and the successful integration of migrants into the labor market [7].

It is possible to compare the structure of Sweden's GDP in 2015 and 2019. In 2015, consumption accounted for 71.8% of GDP, with private consumption accounting for the majority part (46.1%), and investment accounted for 24.4%. That is, domestic demand was then 96.2% of GDP, and only 3.8% – accounted for external. Already in 2019, the share of consumption decreases by 0.6%, as investment increased by 0.8%, but net exports also decreased – from 3.8% to 3.6%.

That is, you can specify which components are the main drivers of GDP growth. In 2015, Sweden's nominal GDP growth (expressed in Swedish krona) was 3.6%, with 3.1% provided by consumption, 1.2% by investment growth, while net exports, by contrast, decreased by 0.6%. Already in 2019, 4% GDP growth was provided by 2.3% consumption growth and 1.5% – by net exports, but investment accounted for only 0.2%.

The Swedish economy on average in 2015–19 saved 28.1% of GDP and invested – 25.2%, i.e. the first component exceeds the rate of investment. Therefore, the balance of savings and investments of Sweden for all observed period is positive – an average of 2.9% of GDP. This indicator grew strongly in 2019 – from 2.4% to 4.2%, which can be explained by a decrease in the share of investment by 0.8% and a simultaneous increase in savings of 1.1%. If one`s take into account the fact that the share of investment is one of the main determinants of the economic cycle, it can be noted that by 2019 the economy had grown.

Norway has a stable economy with an active private sector, a large public sector and an extensive social protection network. The country is rich in natural resources such as oil and gas, fish, forests and minerals. Norway is a leading producer and second largest exporter of seafood after China. The government manages the country's oil resources through broad regulation. According to official national estimates, the oil sector provides about 9% of employment, 12% of GDP, 13% of government revenues and 37% of exports. Norway is one of the world's leading oil exporters. Domestic electricity production in Norway is almost entirely dependent on hydropower. The Norwegian economy is adjusting to lower energy prices, which demonstrated the growth of labor force participation and employment in 2017 [7].

Comparing the components of Norway's GDP with Sweden, it can be seen that the share of consumption is on average 3.4% less in Norway, because in its economy the share of investment averages 28% (in Sweden – 25.2%), and net exports – 3, 8% (0.8% more). This is in terms of average indicator, but comparing the dynamics for 2015 and 19, it could be said that the share of consumption (44.8% of which is private consumption, and 24.4% – public) in Norway increased by 2.5% , the share of investment – also by 2.5%, but the share of net exports, by contrast, decreased – by 4%. This fact explains the decrease in the growth rate of nominal GDP of Norway (expressed in national currency) in 2019, which amounted to 0.5%.

Regarding saving-investment balance of Norway, its value on average in 2015-19 was 5.7% of GDP, i.e. almost 2 times more than in the case of Sweden. The average value of Norway's savings is 33.7% and investments – 28% of GDP. Compared to 2015, in 2019 the share of savings decreased by 2.7% of GDP, and the share of investment increased by 1.5%. Thus, in contrast to Sweden, Norway has seen economic growth since 2018.

Finland is characterized by a highly industrial, mostly free market economy. Historically, it has been competitive in manufacturing, especially in the woodworking, metallurgy, engineering, telecommunications and electronics industries. Finland excels in technology exports as well as the promotion of information and communication startups, games, clean technologies and biotechnologies. With the exception of wood and a few minerals, Finland is dependent on imports of raw materials, energy and some components

Table 2

Granger causality test for nominal GDP and external sector indicators of Finland, Norway and Sweden

Country	Dependent variable	Lags					
		Asset_iip	Liab_iip	Niip	Exch	Exp_price	Public_debt
Sweden	GDP_nom	0,65 (0,42)	0,63 (0,43)	0,65 (0,42)	2,43 (0,12)	8,69 (0,00***)	0,7 (0,4)
Norway		2,35 (0,13)	1,94 (0,16)	0,08 (0,78)	2 (0,16)	3,55 (0,06*)	0,66 (0,42)
Finland		3,59 (0,06*)	6,38 (0,01**)	8,59 (0,00***)	0,01 (0,93)	0,01 (0,94)	1,3 (0,25)

Source: compiled by the author

for industrial goods. Due to the cold climate, agricultural development is limited to supporting self-sufficiency in basic products. Forestry, which is an important export sector, provides secondary employment for the rural population. The main challenges for the Finnish economy in this aspect are the reduction of high labor costs and increasing demand for its exports [7].

The share of consumption in Finland in 2019 was 75.4% of GDP, which is 3.4% less than in 2015. Of these, 75.4%, 52.4% – goes to private consumption, and the other 23% – to public. The share of investment, by contrast, increased by 2.5%. If in 2015 net exports amounted to -0.6% of GDP, i.e. it was negative, and in 2019 it reached 0.3% of GDP. That is, on average, the share of Finnish consumption exceeds that of Norway and Sweden, which cannot be said for the share of investment and net exports.

Talking about the main components that ensured the growth of nominal GDP in Finland of 3% (expressed in euros) in 2019, it can be noted that the engines are consumption (growth rate is 1.8%) and net exports (growth rate – 1.4%), and the investment rate is -0.4%.

The balance of savings and investments of Finland, in contrast to Sweden and Norway, has been negative over the years, i.e. Finland invests more than it saves.

But in 2019, this figure increased slightly – from -1.9% in 2018 to -0.6% of GDP. The average share of savings is 22.7% of GDP and investment – 23.7%. And these two figures are lower than for the other two countries. By 2018, the share of investment relative to GDP had grown, i.e. the Finnish economy had grown.

Now it is necessary to find out which of the indicators of the external sector plays the greatest role in the formation of the real sector of the economies of Northern Europe. To do this, it was decided to conduct a Granger causality test for Finland, Norway and Sweden (Table 2).

The dependent variable is the nominal GDP of billions of US dollars (GDP_nom), and independent variables are assets of the international investment position in billions of US dollars (Asset_iip), liabilities of the international investment position in billions of US dollars (Liab_iip), net international investment position in billions of US dollars (Niip), the exchange rate of the US dollar to national currencies (Exch), changes in export prices (Exp_price) and public debt in % of GDP (Public_debt).

The results showed that in the case of Sweden, of all the above indicators, its real sector is affected only by changes in export prices (Prob. = 0.00). Speaking of Norway, there is also a significant relationship in this case between the country's nominal GDP and the change in export prices, as Prob. = 0.06. And in Finland the main influence is made by indicators of the international investment position: assets (Prob. = 0.06), liabilities (Prob. = 0.01) and a net international investment position (Prob. = 0.00).

Conclusions. Thus, having analyzed the real sector of the economies of Northern Europe, it could be noted that all three countries are post-industrial, as the share of the services sector in GDP is more than 60%, and in the case of Finland it is almost 70%. Norway is the most industrialized country. In terms of nominal GDP, the largest real sector belongs to Sweden, and based on the GDP per capita indicator – already belongs to Norway. Consumption occupies the largest share in the GDP of all three countries (Finland is the leader). If it is talked about the components that are the engines of GDP growth, then for Sweden – it is consumption and net exports, for Norway – consumption and investment (net exports, by contrast, are declining), and for Finland – consumption and net exports. The balance of savings and investments for Sweden and Norway for the whole period was positive, but in Sweden in 2019 it increased, and in Norway – vice versa. In Finland, the balance is negative for all observed period. Regarding the results of the Granger causality test, the main impact on the real sector of the Swedish and Norwegian economies is provided by indicators of changes in export prices, and in Finland – by indicators of the international investment position.

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