

Behavioral Economics in Cyberspace Practical Work No. 3

Analysis of indicators of development of the municipal sector in the context of the development of modern economy

Performed by students of group IA-401

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Introduction

In the current conditions of economic and social transformation, municipal enterprises play a key role in ensuring an adequate standard of living for the population, forming local budgets and implementing socially oriented state policies. The level of development and efficiency of the municipal sector directly reflects the quality of public administration, the state of the economy and the degree of satisfaction of needs. citizens.

The purpose of this practical work is to analyze the activities of utility companies in the services market, determine the composition and structure of their revenues, assess development trends in 2014–2025, and compare the dynamics of indicators between Ukraine and Norway.

The scientific novelty lies in an attempt to systematically compare the performance indicators of utility companies in Ukraine and Norway in long-term dynamics (2014–2025), identify differences in revenue sources and service structure, and identify potential areas for improving the efficiency of Ukrainian utility companies.

Task 1

KOF Globalization Index

This is a comprehensive indicator that quantifies the degree of a country's involvement in globalization processes.

The goal of creating the index was to create an objective tool that would allow comparing the level of openness and integration of countries into the global system using clear quantitative indicators.

Globalization, as defined by KOF, is the process of expanding and deepening international flows of goods, services, capital, information, people, and ideas, leading to ever closer interdependence between countries.

Structure of the KOF Globalization Index

Component	Essence	Examples of indicators
Economic globalization Globalization)	<p>Reflects the level of integration of a country into the global economy through trade, financial flows, investment, barriers and restrictions.</p> <p>volumes of portfolio investments. High values indicate active participation in international trade, technologies. If the economic index increases, this is usually accompanied by an increase in the competitiveness of the economy.</p>	<p>Export/import flows, foreign direct investment, customs tariffs, availability of foreign capital, investments, by an increase in the competitiveness of the</p>
Social globalization (Social Globalization)	<p>Measures the spread of information, contacts, and cultural influences between countries.</p> <p>openness of society to the outside world, tourist flows, participation in international mobility of citizens, international exchange programs, development of digital communications. presence of foreign media.</p>	<p>The number of international phone calls, internet users, high value means the active presence of foreign media,</p>
Political globalization (Political Globalization)	<p>Reflects the level of a country's participation in international political interaction.</p> <p>High indicators are characteristic of states that are members of numerous international organizations, actively conduct diplomatic activities, participate in peacekeeping missions and global agreements.</p>	<p>Participation in international organizations (UN, WTO, IMF, etc.)</p> <p>representative offices abroad.</p>

Calculation method

$$KOF_{index} = \alpha_1 * Economic + \alpha_2 * Social + \alpha_3 * Political$$

A high index value means that the country:

- actively participates in international trade and investment; has
- an open information space and a significant exchange of people, ideas, and technologies;
- maintains numerous diplomatic ties and membership in international organizations.

A low indicator, on the contrary, indicates limited external contacts, dominance of the domestic market, and a low level of international interaction.

The growth of the indicator indicates the country's

increased integration into world processes, trade liberalization, development of information technologies, and reduction of barriers to the movement of capital, goods, and

A decrease in the index may indicate economic or political isolation, crisis, the introduction of restrictions on international trade, or reduced participation in global institutions.

Country's place in the ranking

Place from 1 to 10

The country is one of the most globalized countries in the world (example: Switzerland, the Netherlands, Belgium).

Places 11 - 30

characterize a high level of globalization inherent in developed countries with open economies (for example, Norway, Sweden, Canada).

Places 31 - 100

average level of globalization, typical for developing countries.

Over 100 places

low level of globalization, which indicates weak integration into the world system (often these are countries with political conflicts or economic restrictions).

Dynamics of Norway's ranking according to the KOF Globalization Index

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
General index globalization	82.83	85.68	85.55	85.32	85.23	85.38	84.86	84.9	84.75	84.9	83.68
Place	20	18	13	21		11	12	13	16	14	15
Index economic globalization	74.61	78.19	77.49	73.4	77.15	77.97	77.01	77.68	76.51	72.51	77.56
Place	40	31	31	49		30	31	30	35	43	32
Social index globalization	89.92	89.68	89.86	89.74	89.62	89.16	88.49	88.54	88.69	88.54	86.32
Place	13	14	14	12		3	5	6	9	7	12
Political Index globalization	83.33	82.62	92.26	92.7	81.61	80.89	80.2	78.37	89.09	78.37	88.09
Place	21	18	15	12		27	29	29	32	38	30

Dynamics of Norway's ranking according to the KOF Globalization Index



After a rise in the mid-2010s, there was a decline, which can be attributed to fluctuations in global oil prices (Norway's main export) and the impact of the pandemic.

Social globalization in Norway remains one of the strongest components of its integration. This indicates an open society, active international communication, a high level of information flows and cultural ties.



Dynamics of Norway's ranking according to the KOF Globalization Index



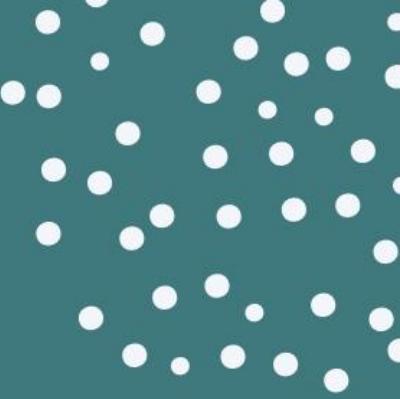
The peak in 2016–2017 may be related to the country's active foreign policy. The decline after 2018 is the result of changing political priorities and general global instability.

Social globalization is the most stable and highest area where Norway ranks best in the world. Political globalization fluctuates in waves, depending on the country's international activity.



Dynamics of Ukraine's ranking according to the KOF Globalization Index

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
General index globalization	68.85	69.5	74.17	70.24	74.42	74.12	73.06	73.41	72.98	73.41	72.97
Place	44	42	41	45		45	44	45	44	43	47
Economic Index globalization	62.18	62.46	64.38	65.94	65.74	64.51	62.55	62.38	62.16	62.38	64.47
Place	59	56	54	63		72	66	71	75	77	75
Social index globalization	70.52	69.84	69.98	70.12	69.39	69.87	68.47	69.5	68.61	69.51	67.01
Place	70	69	67	63		90	88	95	91	84	91
Political Index globalization	86.05	86.01	86.27	84.93	64.54	62.7	88.32	89.39	88.16	59.39	87.43
Place	39	40	41	43		30	32	32	35	108	31



Dynamics of Ukraine's ranking according to the KOF Globalization Index



The period after 2014 was marked by attempts to reform the economy, the signing of the Association Agreement with the EU, but at the same time, the loss of part of the industry due to military events. After 2017, the pace of integration slowed down somewhat.

Social globalization demonstrates a general decline explained by migration processes, a drop in the level of communication openness due to the crisis and war, as well as a decrease in cultural and tourist exchanges.

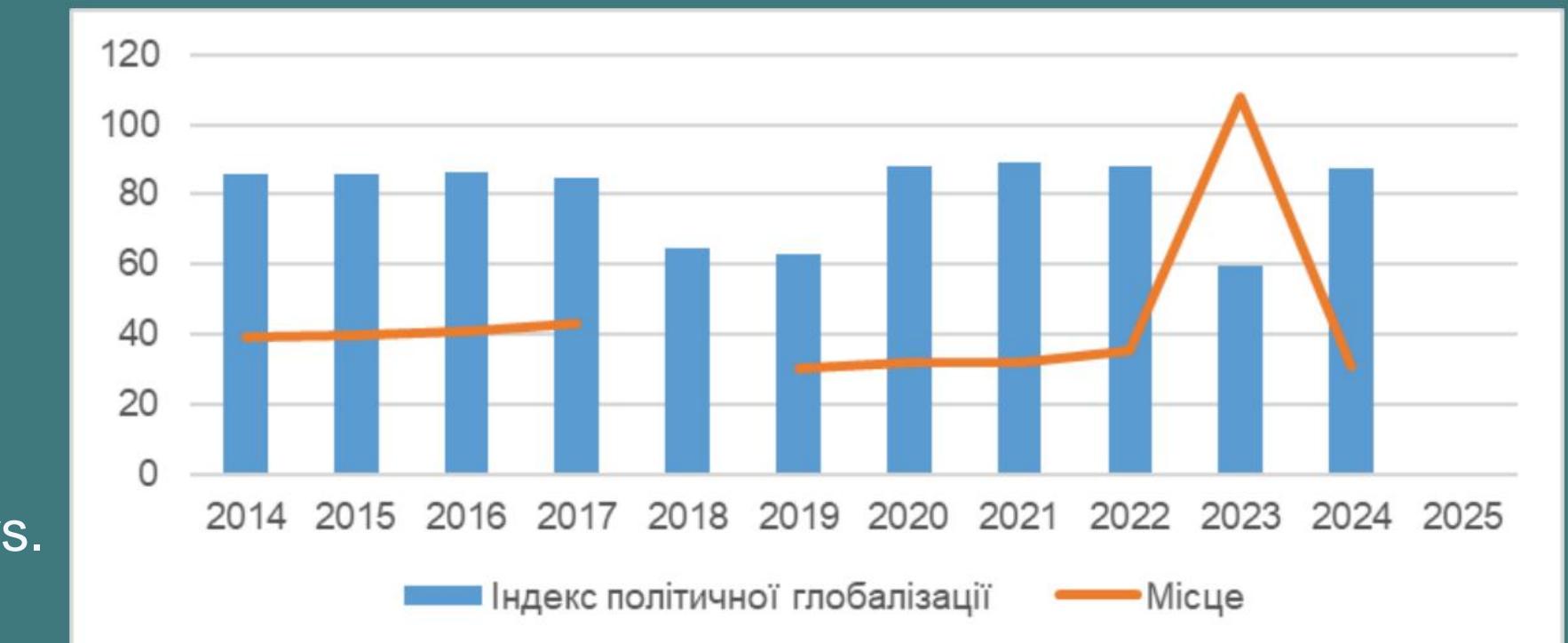


Dynamics of Ukraine's ranking according to the KOF Globalization Index



The decline in 2018–2019 reflects the country's diplomatic reorientation, while the sharp increase after 2020 is the result of active international support in the context of the war and integration into Western political systems.

High indicators after 2021 indicate a significant strengthening of international ties and participation in global political affairs.



Conclusions of the analysis of the dynamics of ratings according to the KOR index

The countries with the greatest integration into global globalization processes in 2014 out of 207 countries in the world were recognized as Ireland, Belgium, and the Netherlands, and in 2024 as Switzerland, the Netherlands, and Belgium, which indicates the stable leadership of European countries with developed open economies and a high level of international relations.

Norway ranked 20th overall in 2014 and 15th in 2024, improving its position compared to previous years. This indicates a gradual strengthening of its participation in global economic, social and political processes, despite some fluctuations in the indicators in the period 2017–2021.

Ukraine ranked 44th in the overall ranking in 2014, and 47th in 2024, a slight deterioration in its position compared to previous globalization indicators. Despite this, Ukraine's level of integration remains relatively stable, with minor fluctuations explained by the impact of political instability, military events, and transformations of the economic system.

Conclusions of the analysis of the dynamics of ratings according to the KOF index

Norway's ranking positions according to the economic, social and political components of the KOF Globalization Index are as follows:

- In terms of economic globalization in 2024 — 32nd place (moderate position, stable dynamics).
- In terms of social globalization — 12th place (high level of integration and openness of society).
- In terms of political globalization — 30th place (moderate participation in international political processes).

The ranking positions of Ukraine according to the economic, social and political components of the KOF Globalization Index are as follows:

- In terms of economic globalization in 2024 — 75th place (moderate level of integration, growth after the decline of 2018–2019).
- In terms of social globalization — 91st place (decline in indicators due to the crisis and military events).
- In terms of political globalization — 31st place (high dynamics due to active international support and increased diplomatic activity).

Conclusions of the analysis of the dynamics of ratings according to the KOR index

Norway is a highly globalized country with a developed economy, a high level of social integration, and stable political ties.

Ukraine, on the other hand, has an average level of globalization: moderate economic openness, weaker social interaction, but relatively high political influence through international partnerships and support.

Overall, Norway consistently ranks among the top 20 countries in the world in terms of globalization, while Ukraine remains in the second half of the ranking, demonstrating potential for growth in the context of post-war recovery and further European integration.

Conclusion 1

The overall level of globalization of Ukraine from 2014 to 2025 has a tendency to moderate growth, despite political and economic crises. The economic component is stable, but with a moderate pace of development. The social component has a decline, which indicates a decrease in interpersonal and cultural contacts. Political globalization after the decline in 2018–2019 has shown a sharp strengthening due to international support and the growth of Ukraine's political role on the world stage.

Overall, Ukraine has gone from a moderately globalized state to a country that is actively integrating into the world economy and politics, despite difficult internal challenges. Its development demonstrates that globalization processes can occur even in crisis conditions, if the strategic vector of openness and cooperation with the international community is maintained.

Task 2

Global Competitiveness Index

(The IMD World Competitiveness Yearbook,

WCY) — annual ranking, assessing the ability of countries to effectively use their own resources to ensure sustainable economic growth growth.

The assessment is carried out according to four groups of indicators: economic efficiency, government efficiency, business efficiency, and infrastructure.

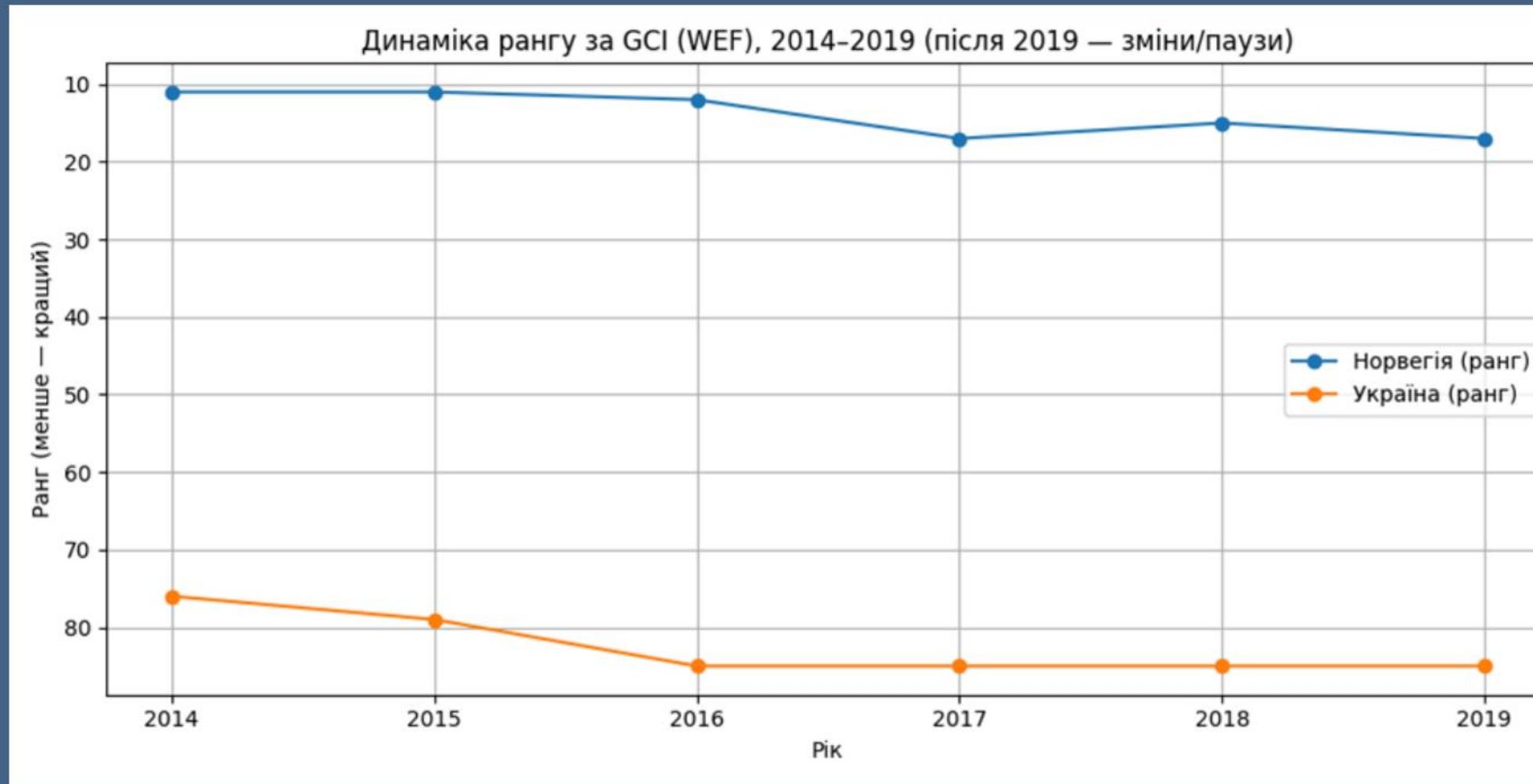
The Global Competitiveness Index (GCI) is an assessment of the ability of economies to provide high levels of productivity and well-being.

Main components: institutions, infrastructure, macroeconomic environment, education, innovation.

Dynamics of the GCI ranking of Ukraine and Norway in 2014-2025.

Years	Norway		Ukraine	
	Ranking position	Score (from 1 to 7)	Ranking position	Score (from 1 to 7)
2014	11	5.4	76	4.1
2015	11	5.35	79	4.03
2016	12	5.33	85	4
2017	17	5.25	85	3.9
2018	15	5.31	85	3.8
2019	17	5.18	85	3.7
2020	-	-	-	-
2021	-	-	-	-
2022	-	-	-	-
2023	-	-	-	-
2024	-	-	-	-
2025	-	-	-	-

Dynamics of the GCI ranking of Ukraine and Norway in 2014-2025.



During 2014–2019, Norway held high positions in the global competitiveness ranking — mostly within the top 20.

Ukraine in the same period ranked between 76 and 85, reflecting a low level of institutional efficiency, the complexity of doing business, infrastructure problems, and a high level of corruption risks.

Analysis of the dynamics of the country ranking according to the GCI index

Main problems

Ukraine

- institutional weakness;
- imperfect financial system, limited access to capital; low macroeconomic stability;
- weak development of innovation capacity and
- technological readiness

Norway

- dependence on sectors exposed to global price shocks; high labor costs; the need
- to diversify the economy, especially
- the growing need to modernize business efficiency through innovation; environmental challenges

Analysis of the dynamics of the country ranking according to the GCI index

Comparative positions with the nearest neighboring countries

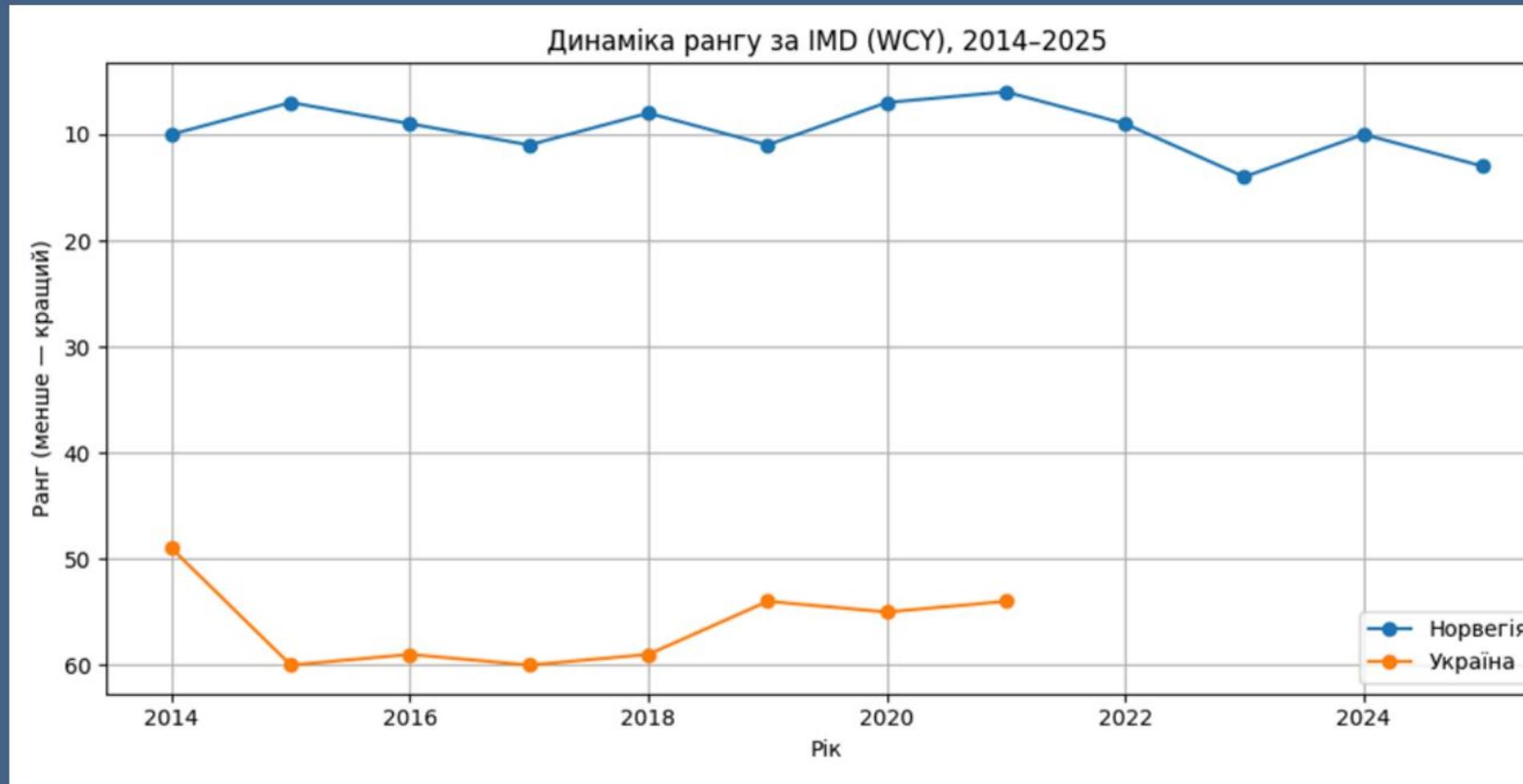
Ukraine's

- neighboring countries in Eastern Europe are in better positions than Ukraine, especially in such components as institutions, labor market, financial systems in terms of
- innovation and digital infrastructure. Some neighboring countries are ahead of Ukraine, which creates competition in attracting investments. However, compared to less developed countries in the region, Ukraine has potential and advantages in human capital and education.

Norway's

- neighboring Scandinavian countries partly have a similar high level of competitiveness, sometimes surpassing Norway in innovation or business dynamism; Norway is ahead of some neighbors in financial stability, social policy, healthcare, quality of life, but in areas such as labor costs, environmental regulations, readiness for technological change or green transformation, other Scandinavian countries may have better indicators.

Overall index and final ranking of the world competitiveness of Ukraine and Norway (WCY) for 2014-2025.



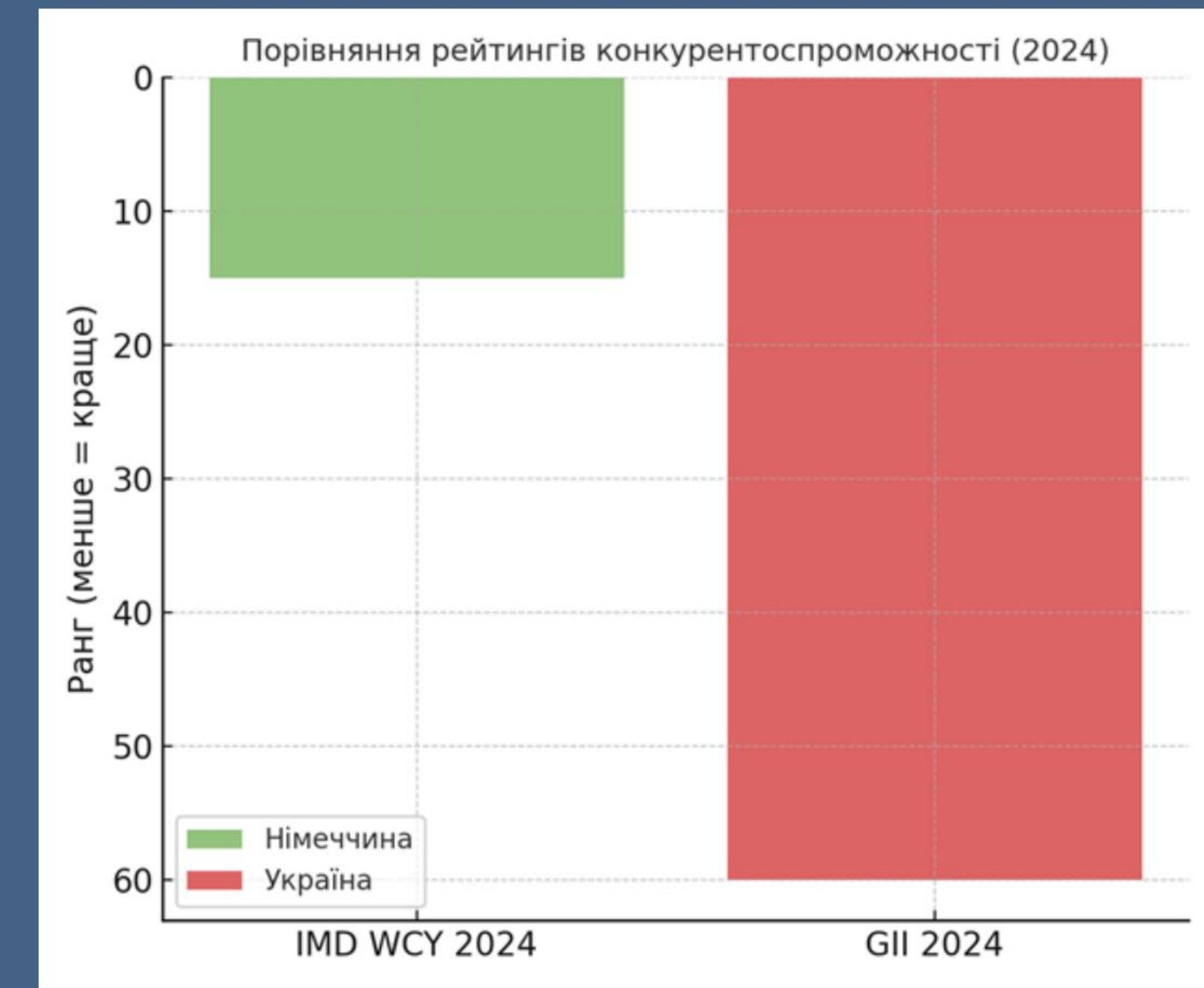
For Norway: IMD gives stable rankings at the top of the table - in 2014-2025 Norway is often in the top 15

For Ukraine: IMD ranks up to 2021 inclusive exist (examples: 2014 — 49; 2019 — ~54), but since 2022 IMD has partially stopped regular publication of complete data for Ukraine (due to difficulties in collecting relevant data during the war period).

Positive and negative indicators of impact on the competitiveness of Ukraine and Norway (IMD WCY, 2024)

Country	Position (2024)	Criteria for which positions are stronger	Criteria for which positions are the weakest
Norway	16th place among 67 countries (IMD WCY 2024)	High level of GDP per capita population; · Macroeconomic stability; · High level of education and social protection; · Developed digital infrastructure.	· Dependence on oil and gas exports; · High labor costs forces; · Low industrial diversification.
Ukraine	Not included in the IMD ranking (GCI 2019 - 85th place out of 141 countries)	· High human capital; · Developed IT sector; · Active development of startups ecosystems; · Strong positions in the field of technological knowledge.	· High level of corruption; · Weak institutions; · Low quality infrastructure; · High military risks.

Positive and negative indicators of impact on the competitiveness of Ukraine and Norway (IMD WCY, 2024)



Conclusion 2

An analysis of the dynamics of the positions of Ukraine and Norway in the global competitiveness rankings (GCI and IMD WCY) in 2014–2025 indicates a significant difference in the structure and development trends of their national economies.

Ukraine has consistently maintained low positions in the GCI ranking during the studied period (from 76th place in 2014 to about 85th in 2019), which reflects systemic problems - insufficient efficiency of state institutions, low level of innovation activity, limited access to financing, unstable macroeconomic environment, and high corruption risks.

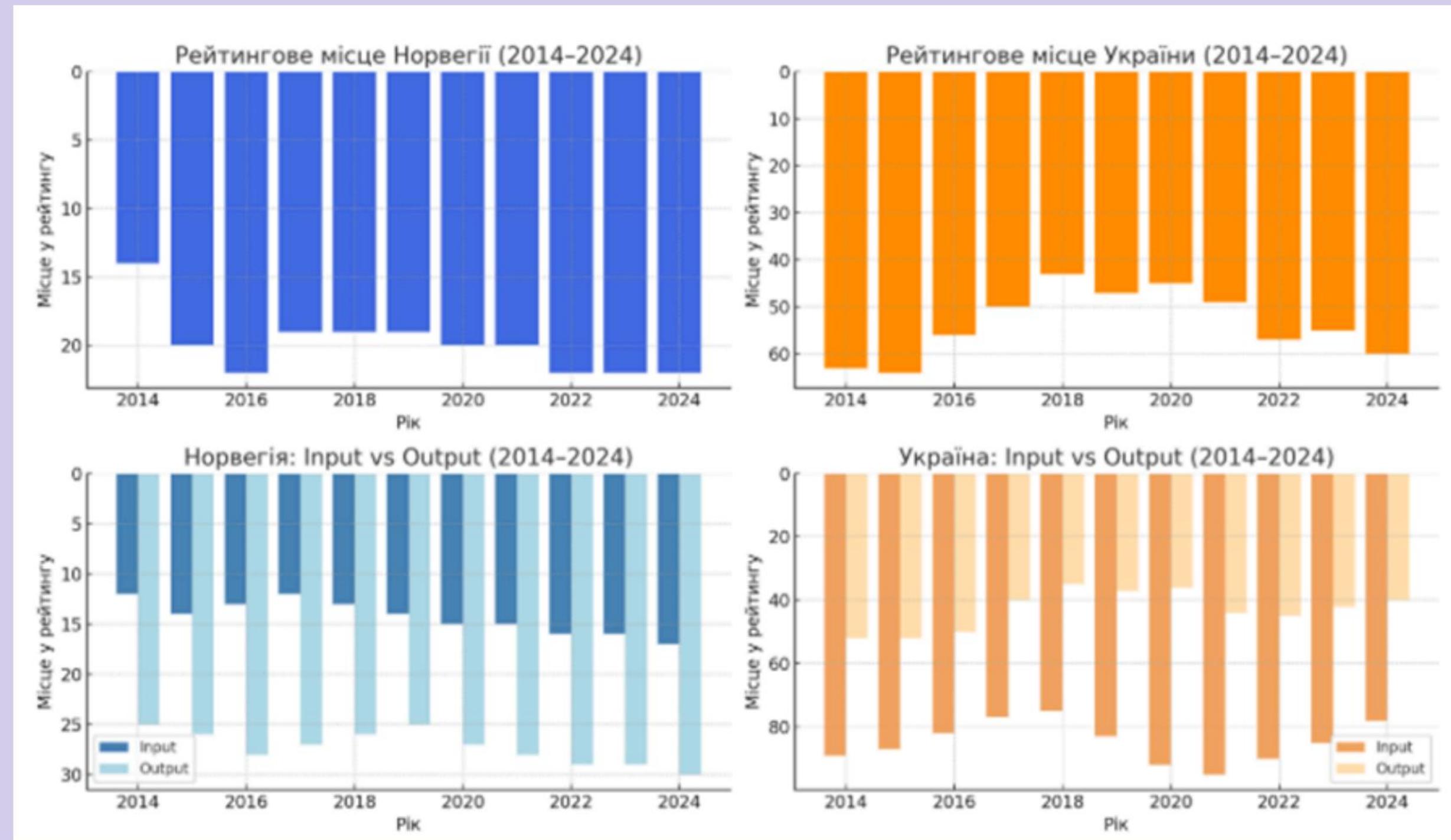
Norway, on the contrary, demonstrates consistently high positions - it is among the top twenty countries in the world according to GCI and among the top fifteen according to IMD WCY. Its competitiveness is ensured by a high level of institutional development, effective social policy, high-quality infrastructure, educational system and innovative potential.

Task 3

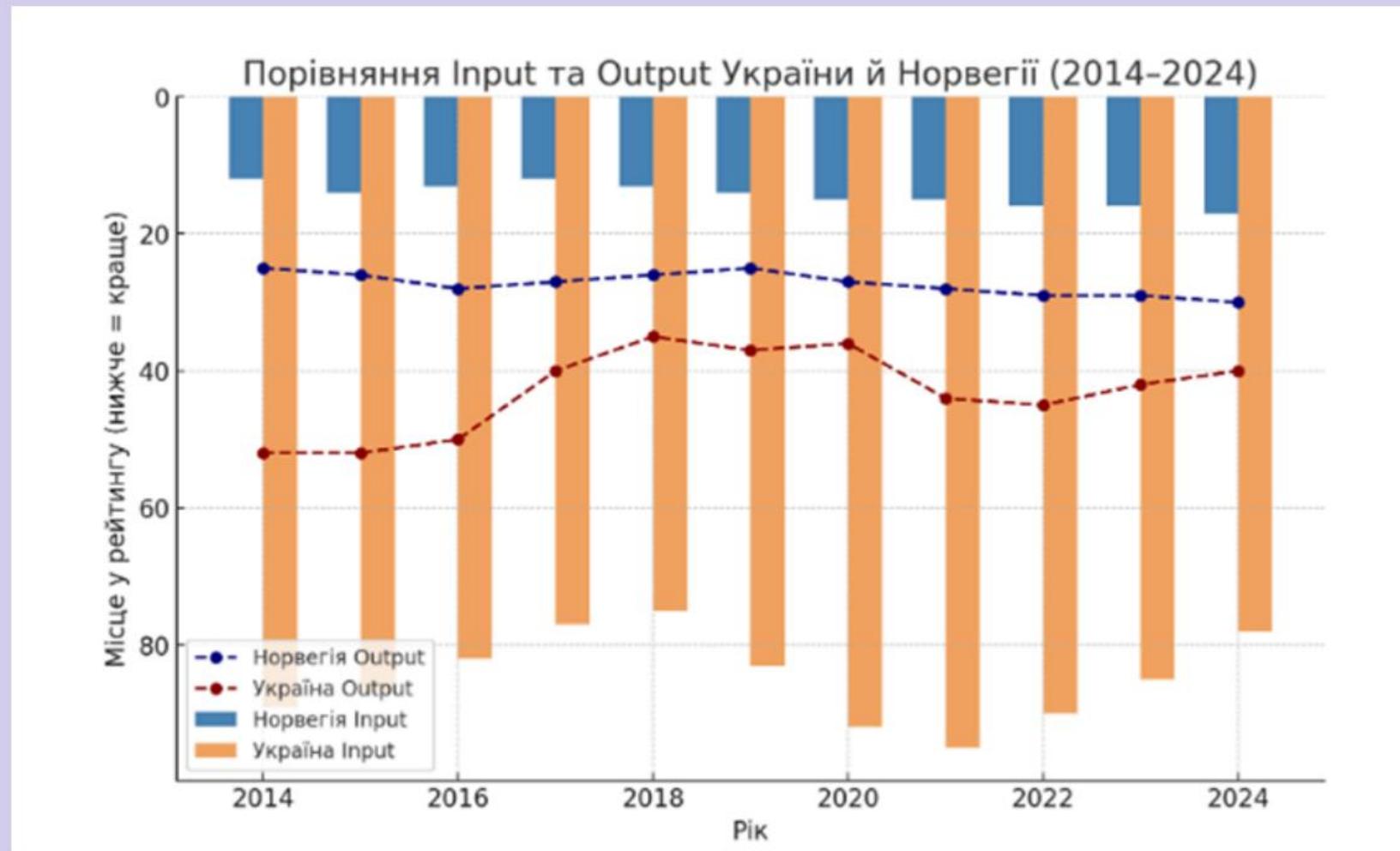
Dynamics of the rating of Ukraine and Norway according to the Global Innovation Index

Indicator	Years										
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total countries	143	141	128	127	126	129	131	132	132	132	132
Norway's ranking	14	20	22	19	19	19	20	20	22	21	22
Available resources and conditions for carrying out innovations	9	12	14	14	13	13	14	15	16	15	15
Practical results achieved implementation of innovations	18	23	26	23	22	21	23	22	23	24	23
Ukraine's ranking	63	64	56	50	43	47	45	49	57	55	55
Available resources and conditions for carrying out innovations	87	82	76	77	75	82	71	76	80	82	81
Practical results achieved implementation of innovations	45	48	37	40	35	36	37	38	42	44	46

Dynamics of the rating of Ukraine and Norway according to the Global Innovation Index



Dynamics of the rating of Ukraine and Norway according to the Global Innovation Index



Norway has consistently held positions in the top third of the global innovation ranking (around 14–22 places in 2014–2024). Over time, there have been slight fluctuations in rank.

Ukraine demonstrates noticeable volatility: improvement in 2016–2018 (peak around 43rd place in 2018), then a gradual deterioration in positions in 2020–2024 (in 2024 around 55–60th place).

Input vs Output (2020–2024)

Norway has significantly better Input (resources and conditions: institutions, human capital, infrastructure, market, business environment) compared to Output (actual technological and creative results). This configuration indicates a strong resource base, but a certain under-conversion of these resources into visible innovative products/commercial successes.

Ukraine in 2024 demonstrates significantly weaker Input (approximately 70–82nd place), but relatively better Output (approximately 35–46th place). This gap means that with limited material and institutional resources, individual sectors (in particular, the IT sector, some niches of scientific and technical developments) are able to generate noticeable results.

The impact of policy and external shocks

Political and economic stability play a critical role in shaping Input. In Norway, public policy, predictable R&D funding, a favorable legal framework, and active public- private cooperation mechanisms ensure sustainable investment in innovation.

In Ukraine, political risks, corrupt practices, imperfect legal frameworks, as well as the direct consequences of military actions and economic shocks have led to a decrease in investment attractiveness and a reduction in stable finances for R&D. At the same time, crisis conditions have stimulated partial mobilization of resources in the digital sphere and contributed to the development of IT outsourcing and the startup ecosystem.



Using Norway's positive experience for the Ukrainian utility sector

Innovation financing mechanisms. — Norway combines state grant programs, preferential lending and private investments in priority areas (energy efficiency, "green" technologies). To modernize Ukrainian municipal infrastructure (smart grid, energy-efficient solutions, digitalization of services), it is advisable to adapt mixed financing schemes and stimulate the attraction of private capital through public-private partnerships.

Institutional stability and transparency. Transparent public procurement procedures, standards, and regulatory frameworks minimize corruption risks and increase the attractiveness of innovative suppliers to municipalities. Ukrainian reforms in the field of public procurement and digitalization of services should be strengthened and adapted to the local needs of the municipal sector.

Investments in human capital and R&D collaborations. Supporting interaction between universities, scientific institutions and local businesses (cluster initiatives, applied research programs) will contribute to improving the quality of input and better transformation of scientific achievements into practical solutions for the municipal sector.

Conclusion 3

Norway consistently ranks high in the GII; its strong Inputs (institutions, infrastructure, financing) provide a solid foundation for innovation; however, Outputs lag behind Inputs, so there is room for improving commercialization and scaling of innovations.

Ukraine demonstrates relatively better Output compared to Input: this indicates the presence of highly qualified human capital and certain competitive sectors (e.g., IT), but the overall innovation ecosystem requires significant strengthening of institutional support and R&D funding for sustainable development.

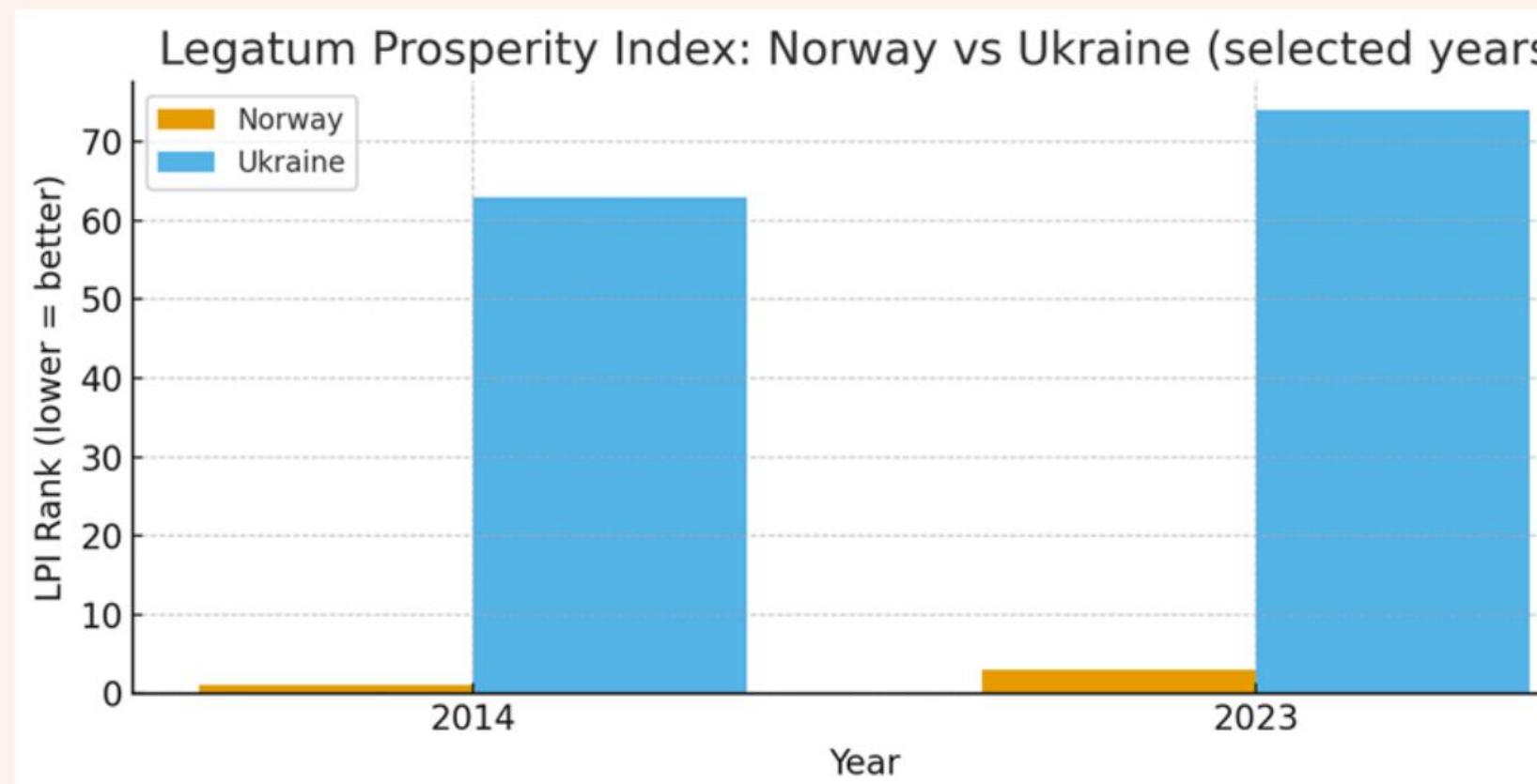
To increase Ukraine's innovation potential, it is advisable to combine education/training of personnel, reform of the legal and financial environment, as well as adaptation of best practices from Norway regarding financing and institutional organization (taking into account the local context and risks).

Tasks 4-5

The Legatum Prosperity Index (LPI) – determines the level of well-being and prosperity of countries by categories: economy, governance, education, healthcare, security, personal freedoms, social capital, and ecology.

The Index of Economic Freedom (IEF) is an annual rating that reflects the institutional characteristics of countries that are most important for economic growth, analyzes the limits of state regulation of economic activity, and assesses the effectiveness of policies and institutions in protecting economic freedom and the economic interests of citizens, which contributes to prosperity.

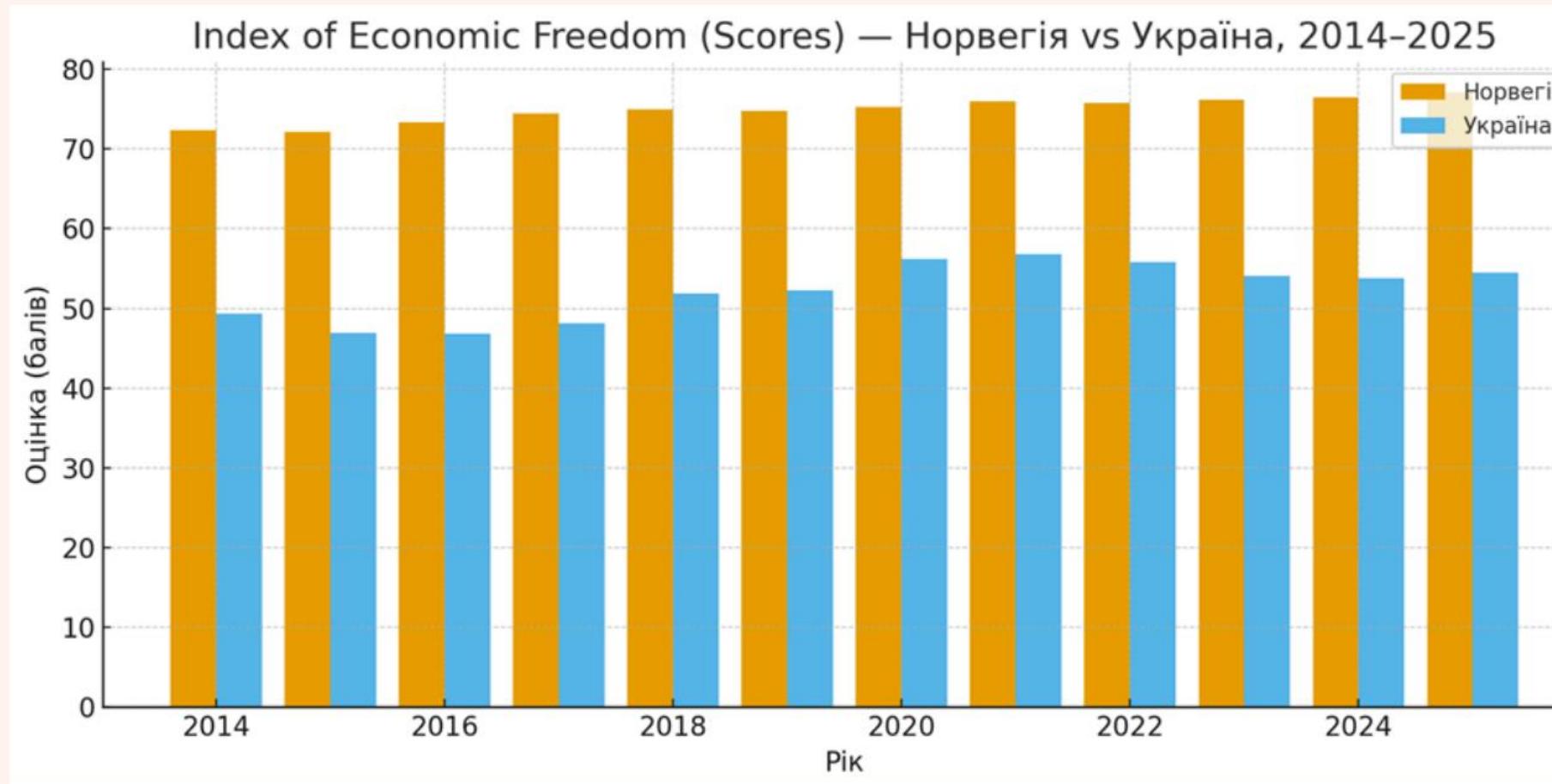
Dynamics of the rating of Ukraine and Norway according to the Legatum Prosperity Index of the world countries (The Legatum Prosperity Index)



Norway consistently ranks highest in the prosperity ranking during 2014–2025 (1–2 places), which confirms its sustainable socio-economic development, high level of education, healthcare, social capital, and environmental safety.

Ukraine is in the middle group of countries (61–66th place). The dynamics indicate some stability, but the lack of a significant breakthrough upward, which is due to political crises, military events, and uneven pace of reforms.

Dynamics of the rating of Ukraine and Norway according to the Index of Economic Freedom



Norway demonstrates a consistently high level of economic freedom, with scores ranging from 72 to 77. This allows the country to remain among the highly free economies.

Ukraine in 2014–2017 was among the countries with a low level of economic freedom (score 46–49 points, over 160th place in the world). Starting from 2018, there has been a gradual improvement. At the same time, Ukraine demonstrates a tendency towards a slow but steady recovery.

Comparative analysis

Norway is consistently among the leaders of world rankings. It holds 1–2 places in the Prosperity Index, which indicates a high level of social welfare, a developed healthcare system, education, environmental safety, and effective management of the municipal sector.

Ukraine, on the other hand, is in the middle of the world prosperity rankings (61–66th place). This indicates significant potential, but also problems related to political crises, martial law, institutional imperfections, and uneven reforms.

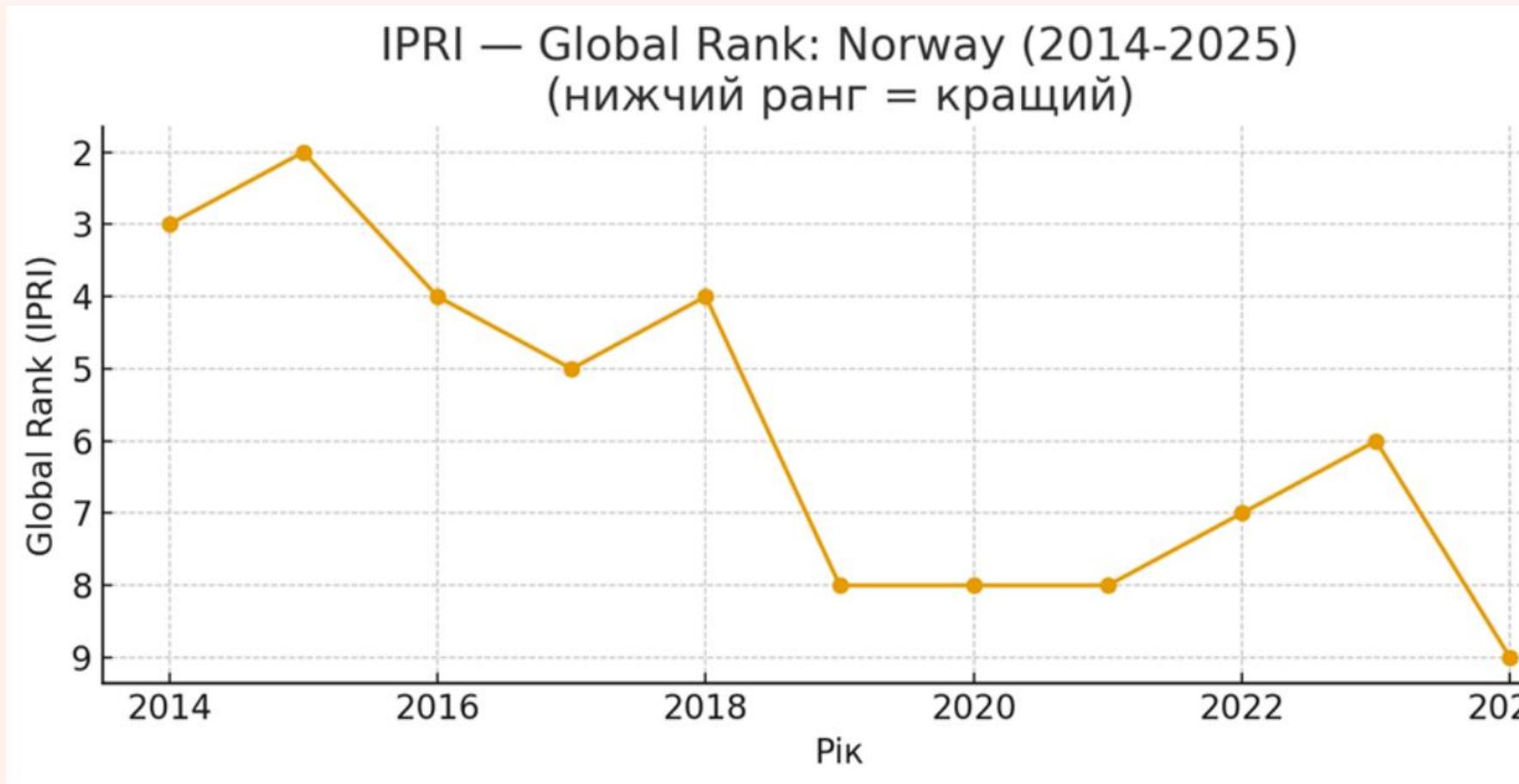
For Ukraine, Norway's positive experience can be useful in several ways:

- institutional strengthening (transparent tariff formation, fight against corruption, improving the quality of regulatory policy);
- innovations in the municipal sector (digitalization of services, smart city technologies, implementation of "green" solutions in housing and communal services); strengthening social protection and focusing on the well-being of citizens as the main
- criterion for policy effectiveness; attracting investments and partnerships with the private sector for the development of

The International Property Rights Index (IPRI) is a global indicator developed by the international group of think tanks, Property Rights Alliance, to understand the effectiveness of property rights protection in countries around the world based on the following criteria: rule of law, protection of intellectual property, and level of corruption.

The sphere of public utilities plays a strategic role in the stability of the socio-economic development of modern states. The assessment of indicators of development of the public utility sector of Ukraine and Norway is particularly relevant in the context of finding optimal approaches to reforming this sphere, taking into account the experience of countries with different levels of economic development, political traditions and institutional systems.

Dynamics of the rating of Ukraine and Norway according to the International Property Rights Index (International Property Rights Index, IPRI)



[Norway](#) consistently ranks among the top 5 countries in the world according to IPRI, demonstrating a high level of legal protection, low corruption, and an effective institutional system.

[Ukraine](#) is gradually improving its position, but remains at the bottom of the ranking. The main problems are weak rule of law, corruption, and insufficient protection of intellectual property.

Comparative analysis

As can be seen from the [table](#), Ukraine demonstrated instability and a steady decline in the index in 2015–2017, which was accompanied by a drop in the global ranking to 123rd place. Only in 2018–2021 was it possible to level out the trend, but after the start of a full-scale war (2022), the IPRI sank again, and in 2024 Ukraine ranked 102nd among 125 countries with a score of 3.82, which is significantly lower than the world average (about 5.2) and is the worst result among the countries of Central and Eastern Europe, according to independent business analysis.

Norway is characterized by extraordinary resilience of high indicators: IPRI score remains above 7.5–8 throughout the period. The decline after 2021 is likely due to the impact of the COVID-19 pandemic, but Norway continues to remain in the top 10 economies in the world for property rights protection.

Conclusion 4-5

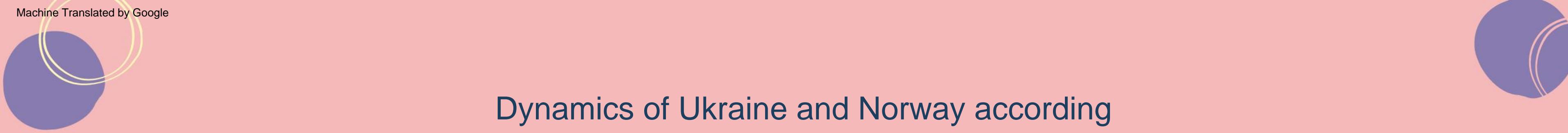
Thus, the results of the analysis confirm that the development of the utility sector cannot be considered in isolation from general institutional reforms and the economic policy of the state.

For Ukraine, the main task is not only to improve macroeconomic indicators, but also to create conditions for improving the quality of life of the population, transparency and efficiency in the field of municipal and social services.

Therefore, Ukraine lags not only behind the leaders, but also behind the countries of Central Europe - its closest neighbors, which have a common history of transformations, but have implemented a more effective regulatory model and provided more stable institutional foundations for the development of the utility industry.

Tasks 6-7

Dynamics of Ukraine and Norway according to the Fragile States Index



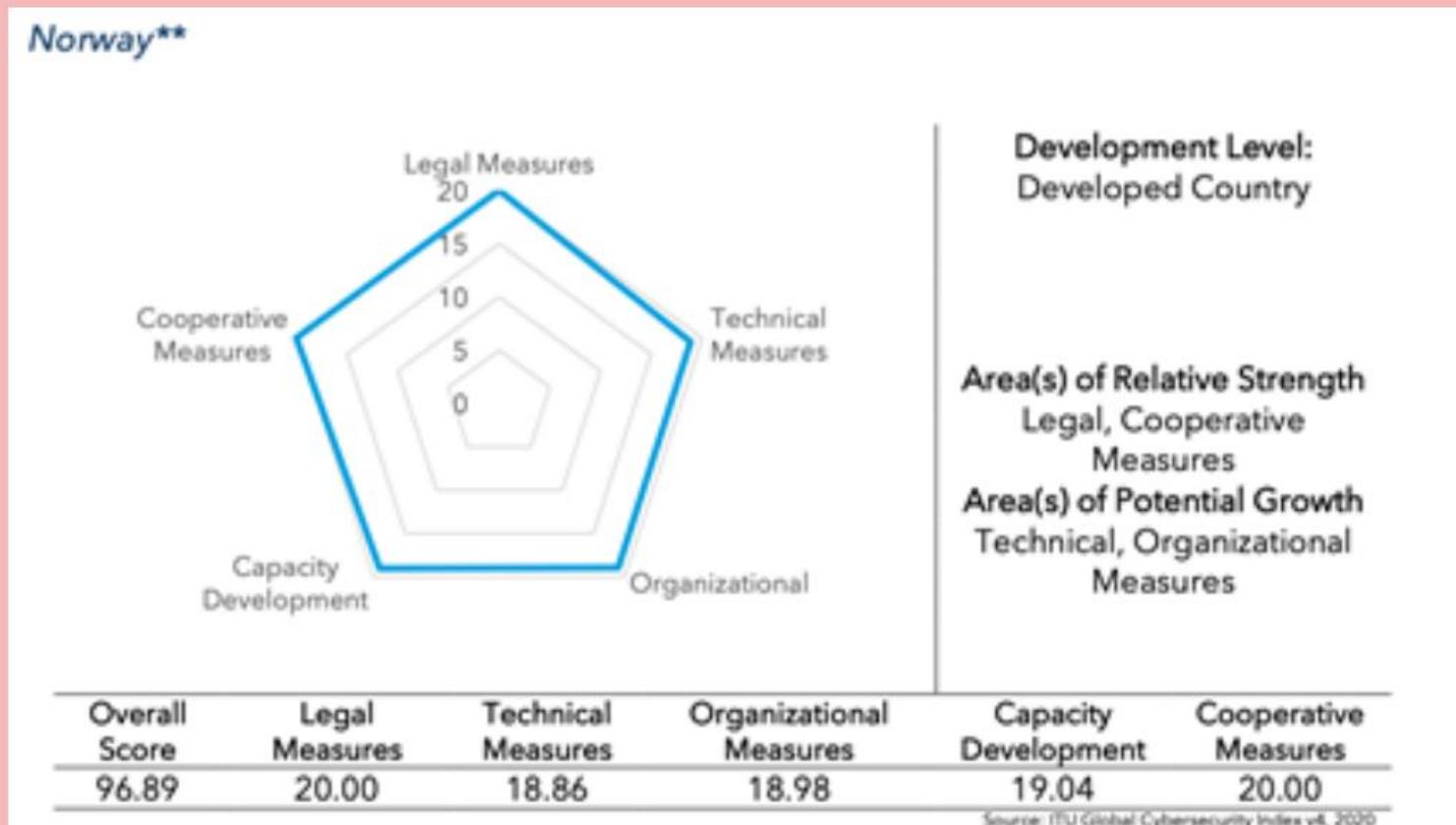
Dynamics of Ukraine and Norway according to the Fragile States Index

Dynamics of the rating of Ukraine and Norway according to the Global and National Cybersecurity Index Global / National Cybersecurity Index (GCsI / NCSI)

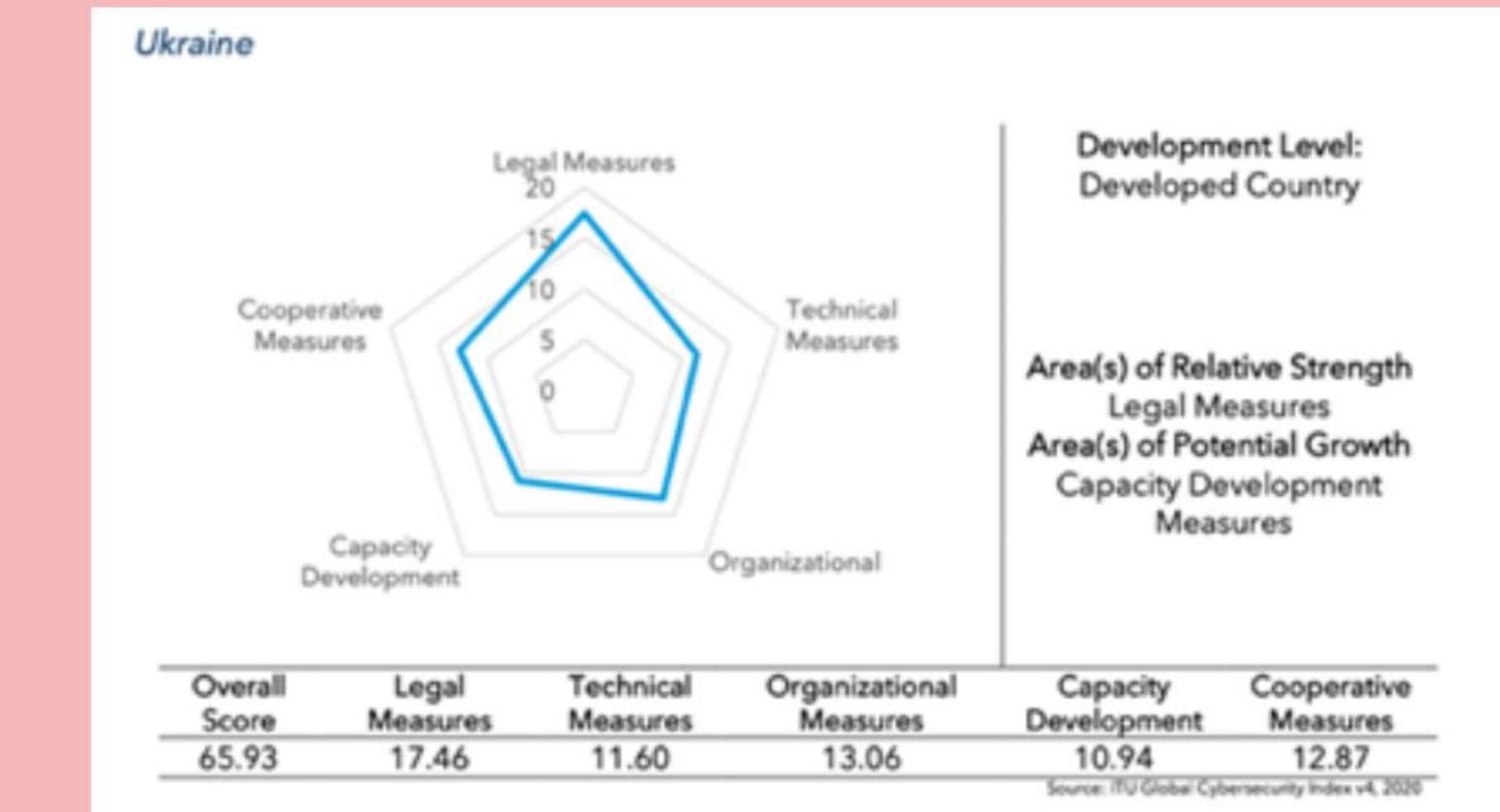
Роки	Норвегія				Україна			
	GCsI			NCSI	GCsI			NCSI
	Глобальний рейтинг	Регіональний рейтинг (Європа)	Загальна оцінка		Глобальний рейтинг	Регіональний рейтинг (Європа)	Загальна оцінка	
2017	11	3	78,6	28	59	33	50,1	24
2018	9	2	89,2	25	54	32	66,1	24
2019	-	-	-	24	-	-	-	26
2020	11	3	96,89	33	39	27	65,93	28
2021	-	-	-	34	-	-	-	25
2022	-	-	-	38	-	-	-	25
2023	-	-	-	45	-	-	-	24
2024	T1	T1	T1	43	T3	T3	T3	4
2025	-	-	-	31	-	-	-	14

Dynamics of the rating of Ukraine and Norway according to the Global and National Cybersecurity Index Global / National Cybersecurity Index (GCI / NCSI)

Norway GCI 2020



GCI Ukraine for 2020



Norway: 11^ü9^ü11^üT1 (2024) — consistently in the world elite.

Ukraine: 59^ü54^ü39^üT3 (2024) — noticeable growth until 2020, then average level (tiers changed places in 2024).

Comparison of NCSI for Ukraine and Norway for the period 2019-2025



Norway: ~28-38th place during 2017–2024
(stable, but not top).

Ukraine: ~4-28th place (better than Norway on this index).

Conclusion 6-7

A comparison of the GCI and NCSI shows different cyber readiness profiles of Ukraine and Norway. Norway has consistently been among the leaders in the GCI over the period 2017–2024 (in 2024 — Tier 1), reflecting mature policies, institutions, and consistent international practices.

Ukraine had a noticeable increase by 2020 (entering the medium-high segment) and in 2024 it belongs to Tier 3; at the same time, according to NCSI, Ukraine demonstrates better operational capabilities than Norway, and in some snapshots it enters the top positions, which indicates practical progress in incident management and critical infrastructure protection.

The differences between the indices are expected: the GCI measures primarily commitments and institutionality, the NCSI measures real capabilities and readiness to respond; in 2024 The GCI has also moved from places to tiers, making direct rankings difficult.

Comparative analysis of indicators

Indicator	The essence of the indicator	Indicator components (subindices)	Trend for Ukraine	Trend for Norway
Global Cybersecurity Index (GCI)	Indicator of readiness of states to cyber threats based on legal, technical, organizational and resource characteristics.	Availability of legislation; technical measures and competent centers (CERT/CSIRT); organizational mechanisms; development potential (human resources, training programs); international cooperation.	In 2020, it was ranked 86th, but with a score of 86.54 out of 100. After 2022, there has been an increase due to the creation of the State Center for Cyber Defense and an improvement in the regulatory framework. The problems are low funding and fragmented coordination.	Norway is among the top 30 countries in the world, demonstrating consistently high indicators of the legal framework and international cooperation. The main focus is on the development of digital resilience and cyber education.
National Cyber Security Index (NCSI)	Determines a country's ability to prevent cyber threats and respond to incidents in the digital environment.	Protection of e-services; data privacy; response policy; availability of special bodies; digital education.	Gradual progress — 42nd place among 180 countries (2024), active improvement of the "Diya" system and creation of state cyber defense programs.	High efficiency of cybersecurity institutions; in the 2023 rankings — in the top 10. Norway has developed response structure and cooperates with the EU.

Comparative analysis of indicators

Indicator	The essence of the indicator	Indicator components (subindices)	Trend for Ukraine	Trend for Norway
E-Government Development Index (EGDI)	Comprehensive assessment of the level of development of e-government, digital services and accessibility of online services.	Level of online services; telecommunications infrastructure; human capital.	Active development of e-governance through the platforms "Diya", "E-mriya", "E-malyatko"; increase in positions in the UN rankings (from 69th to 59th place).	In Norway, digital services are fully integrated into public administration; in the EGDI 2023 ranking, they are in the top 5.
Global Innovation Index (GII)	Reflects the state's ability to generate and implement innovations.	Institutions; human capital and research; infrastructure; business development; knowledge and technological outputs.	Ukraine is consistently among the top 50 innovative economies (2023 — 55th place), shows growth thanks to the IT sector and creative	Norway has a high level of innovative activity (20-25th place), is a leader in the fields of eco-technologies and renewable energy.
Index of Economic Freedom (IEF)	Determines the level of economic freedom and efficiency state regulation of economic activity.	Property rights; efficiency of the judicial system; government spending; tax policy; openness of markets.	The indicators are gradually improving - 2024 - 85th place (57.5 points), which indicates slow but stable liberalization.	Norway traditionally has high rates of economic freedom (top 30), balancing between a welfare state and market mechanisms.

General conclusions

It is established that in Ukraine, the revenues of municipal enterprises in 2014–2025 increased from about 44 to 54 billion UAH, i.e. by about 23%. The leading source of revenues remains housing and communal services (about 60%), while the share of other activities is gradually increasing. This indicates a stable expansion of the service sector, but also the need for structural renewal of the industry and attracting investments for modernization.

In Norway, municipal revenues increased from NOK 50 billion to NOK 72 billion, an increase of approximately 44%. Energy services dominate (57–60%), but there is a significant increase in the share of other areas, from 14% to 19%. This indicates a diversification of activities and a gradual shift in emphasis towards social, environmental and digital services.

General conclusions

The results show that Norway has a well-developed system of public utility management, built on the principles of transparency, sustainability and digital integration. Its model is characterized by high flexibility and the ability to quickly adapt to new technological and social challenges.

Ukraine is showing gradual improvement in dynamics, in particular due to the digital transformation of public services (“Diya”), modernization of the regulatory framework in the field of cybersecurity, and active development of the IT sector. However, problems related to the lack of financial resources, worn-out infrastructure, and uneven development at the local level remain.

Overall, the study demonstrated positive developments in the development of the Ukrainian utility sector and outlined possible areas for its further improvement, taking into account best European practices. The implementation of these areas will contribute to increasing the stability of the functioning of enterprises, improving the quality of services provided to the population, and strengthening Ukraine's position in global socio-economic rankings.

List of sources used

1. KOF Globalization Index. Zürich : Swiss Economic Institute. http://globalization.kof.ethz.ch/media/filer_public/2014/04/15/rankings_2014-2024.pdf
2. Dreher, Axel, 2006, Does Globalization Affect Growth? Empirical Evidence from a new Index, *Applied Economics* 38, 10: 1091-1110.
3. 2023 KOF Globalization Index Method of calculation. ETH Zurich - Homepage | ETH Zürich. URL: https://ethz.ch/content/dam/ethz/special-interest/dual/kof-dam/documents/Globalization/2023/KOFGI_2023_method.pdf.
4. Gygli, S., Haelg, F., Potrafke, N. et al. The KOF Globalization Index – revisited. *Rev Int Organ* 14, 543–574 (2019). <https://doi.org/10.1007/s11558-019-09344-2>
5. Contributors to Wikimedia projects. KOF Globalization Index - Wikipedia. Wikipedia, the free encyclopedia. URL: https://en.wikipedia.org/wiki/KOF_Globalisation_Index.
6. IB DP Geography – Introducing the KOF Index. IB DP GEOGRAPHY - Welcome to ibgeographypods.org. URL: https://www.ibgeographypods.org/uploads/7/6/2/2/7622863/lesson_2_kof_index_worksheet.pdf.
7. Ukraine Overall globalization - data, chart | TheGlobalEconomy.com. TheGlobalEconomy.com. URL: https://www.theglobaleconomy.com/Ukraine/kof_overall_glob/.
8. Norway Overall globalization - data, chart | TheGlobalEconomy.com.
9. TheGlobalEconomy.com. URL: https://www.theglobaleconomy.com/Norway/kof_overall_glob/.

Thank you for your attention.