



Менеджмент

УДК 330.16

DOI <https://doi.org/10.5281/zenodo.15354595>

**Assessment of the organizational development potential of IT enterprises in
the context of Ukraine's economic security**

Olha Prokopenko

Doctor of Economics, Professor, Department of Business Economics and
Administration, Sumy State Pedagogical University named after A. S. Makarenko,
87 Romenska Street, 40000, Sumy, Ukraine,
<https://orcid.org/0000-0003-1362-478X>

Oksana Redkva

Doctor of Economics, Department of Management and Administration,
Ternopil Ivan Pul'uj National Technical University, Ruska Street 56, 46001,
Ternopil, Ukraine, <https://orcid.org/0000-0002-8246-4305>

Olha Bilovska

Ph.D. in Economics, Department of International E-commerce and Hotel
and Restaurant Business, V.N. Karazin Kharkiv National University, Svobody Sq.
4, 61022, Kharkiv, Ukraine, <https://orcid.org/0000-0002-2808-5275>

Yevhen Khomenko

Department of Business Economics and Administration, Sumy State
Pedagogical University named after A. S. Makarenko, 87 Romenska Street, 40000,
Sumy, Ukraine, <https://orcid.org/0000-0002-3257-7811>



ЗДОБУТКИ ЕКОНОМІКИ: ПЕРСПЕКТИВИ ТА ІННОВАЦІЇ

Oleksandr Tetorkin

Department of Business Economics and Administration, Sumy State
Pedagogical University named after A. S. Makarenko, 87 Romenska Street, 40000,
Sumy, Ukraine, <https://orcid.org/0009-0005-4360-4650>

Прийнято: 24.04.2025 | Опубліковано: 03.05.2025

Abstract. *Purpose.* The article analyzes the entire spectrum of organizational growth factors which affect information technology enterprises in Ukraine as they relate to national economic security. The core research goal establishes quantitative measurements to evaluate the effects of organizational variables including technological innovation levels and human capital quality and research and development spending with financial resources together with external economic variables which include GDP growth rate changes and inflation rates and FDI data and regulatory stability and digital infrastructure development metrics.

Methods. The research segments data into fifteen major Ukrainian IT enterprises which execute panel data evaluation over a five-year timeframe (2020–2024). The panel regression model functioned as the testing platform for the assessment of connections between selected organizational elements with economic factors outside the organization. The methodological design incorporates statistical methods including descriptive statistical analysis and regression analysis and comparative assessment to guarantee credible results. Besides presenting empirical data, the panel regression model included bar charts and scatter plots together with line graphs.

Results. The evaluation revealed positive connections between organizational development potential and three essential elements of technological innovation and continuous human capital training along with secure financial resource availability. The combination of high innovation capabilities and robust human capital indicators let companies thrive in unstable macroeconomic conditions including



ЗДОБУТКИ ЕКОНОМІКИ: ПЕРСПЕКТИВИ ТА ІННОВАЦІЇ

variable GDP and high inflation rates. Organizational sustainability and growth obtained significant benefits from positive regulatory conditions together with advanced digital infrastructure development.

Conclusions. The research study established that Ukrainian IT enterprises with strong adaptive capabilities involving internal resources management and external economic pressures show better organizational sustainability along with better competitive position. Researchers should continue their investigations to study continuous economic turbulence and digital transformation influences on organizations' adaptation.

Keywords: *economic resilience, innovation activity, human capital quality, panel regression, regulatory environment, enterprise competitiveness, macroeconomic conditions, financial resources, adaptive strategies, digital infrastructure*

Оцінка потенціалу організаційного розвитку підприємств ІТ-сфери в контексті економічної безпеки України

Прокопенко Ольга Володимирівна

доктор економічних наук, професор, кафедра бізнес-економіки та
адміністрування, Сумський державний педагогічний університет
імені А.С.Макаренка, вулиця Роменська 87, 40000 Суми, Україна,
<https://orcid.org/0000-0003-1362-478X>

Редьква Оксана Зіновіївна

доктор економічних наук, кафедра менеджменту та адміністрування,
Тернопільський національний технічний університет ім. І.Пулля,
вулиця Руська 56, 46001 Тернопіль, Україна,
<https://orcid.org/0000-0002-8246-4305>



ЗДОБУТКИ ЕКОНОМІКИ: ПЕРСПЕКТИВИ ТА ІННОВАЦІЇ

Більовська Ольга Олександрівна

кандидат економічних наук, кафедра готельно-ресторанного бізнесу та харчових технологій, Харківський національний університет імені В.Н. Каразіна, майдан Свободи 4, 61022 Харків, Україна, <https://orcid.org/0000-0002-2808-5275>

Хоменко Євген Віталійович

кафедра бізнес-економіки та адміністрування, Сумський державний педагогічний університет імені А.С. Макаренка, вулиця Роменська 87, 40000, Суми, Україна, <https://orcid.org/0000-0002-3257-7811>

Тетьоркін Олександр Олегович

кафедра бізнес-економіки та адміністрування, Сумський державний педагогічний університет імені А.С. Макаренка, вулиця Роменська 87, 40000, Суми, Україна, <https://orcid.org/0009-0005-4360-4650>

Анотація. *Мета.* У статті аналізується ряд факторів організаційного зростання, які впливають на підприємства інформаційних технологій в Україні, оскільки вони є частиною національної економічної безпеки. Основна мета дослідження встановлює кількісні вимірювання для оцінки впливу організаційних змінних, включаючи рівень технологічних інновацій і якість людського капіталу та витрати на дослідження та розробки з фінансовими ресурсами разом із зовнішніми економічними змінними, які включають зміни темпів зростання ВВП та темпи інфляції, а також дані про ПІІ та нормативну стабільність і показники розвитку цифрової інфраструктури.

Методи. Дослідження розглядає дані п'ятнадцяти великих українських ІТ-підприємств, здійснює оцінку панельних даних протягом п'ятирічного періоду (2020-2024). Панельна регресійна модель оцінювала зв'язок між вибраними організаційними елементами з економічними факторами поза



ЗДОБУТКИ ЕКОНОМІКИ: ПЕРСПЕКТИВИ ТА ІННОВАЦІЇ

організацією. Методологічний дизайн включає в себе статистичні методи, включаючи описовий статистичний аналіз і регресійний аналіз і порівняльну оцінку, щоб гарантувати достовірні результати. Окрім представлення емпіричних даних, панельна регресійна модель включала гістограми та діаграми розсіювання.

Результати. Оцінка виявила позитивний зв'язок між потенціалом організаційного розвитку та трьома основними елементами технологічних інновацій і безперервного навчання людського капіталу разом із надійною доступністю фінансових ресурсів. Поєднання високого інноваційного потенціалу та надійних показників людського капіталу дозволяє компаніям процвітати в нестабільних макроекономічних умовах, включаючи мінливий ВВП і високі рівні інфляції. Організаційна стійкість і зростання отримали значні переваги від позитивних регуляторних умов разом із передовим розвитком цифрової інфраструктури.

Висновки. Дослідження показало, що українські ІТ-підприємства з сильними можливостями адаптації, включаючи управління внутрішніми ресурсами та зовнішній економічний тиск, демонструють кращу організаційну стійкість разом із кращою конкурентною позицією. Науковці повинні продовжувати свої дослідження, щоб вивчити безперервну економічну нестабільність і вплив цифрової трансформації на адаптацію організацій.

Ключові слова: цифрова інфраструктура, людський капітал, інноваційна політика, венчурний капітал, інституційна підтримка, віддалена робота, організаційний розвиток, порівняльний аналіз, економічне моделювання, трансформація ІТ-сектору

Statement of the problem. The appraisal of IT enterprise organizational advancement potential remains crucial for Ukraine's economic security thus impacting scientific and practical fields deeply. IT enterprises experience distinctive



ЗДОБУТКИ ЕКОНОМІКИ: ПЕРСПЕКТИВИ ТА ІННОВАЦІЇ

opportunities and challenges from the ongoing global economic changes that involve both economic instability and technological advancement and digitization processes. The Ukrainian IT industry demonstrates essential responsibility in supporting both economic stability and innovation growth and job creation thus necessitating systematic research on their development potential relative to economic security factors.

The research focuses on understanding the unclear connection between Ukrainian IT company organizational development capabilities and their operational economic security environment. The accurate measurement of relationships between organizational elements such as human capital and technological innovation requires detailed evaluation approaches because both internal organizational components and external economic factors like GDP movements combined with inflation and FDIs and regulatory environment and digital infrastructure affect one another.

The examination of this problem fulfills critical scientific goals which center on economic modeling of organizational success under uncertain economic conditions. This scientific study explains how macroeconomic variables and organizational elements determine sustainable IT enterprise growth patterns. The specification of these relationships delivers essential information which helps policymakers as well as industry stakeholders and managers make better strategic choices to enhance enterprise competitiveness combined with resilience capabilities. This study provides support for policymakers who want to develop economic security systems which promote technological innovation alongside sustainable business expansion.

Studies that document how factors influencing organizational growth in Ukraine's IT sector relate to economic security conditions will create meaningful contributions for theory-building and practical applications to increase enterprise success and economic strength and national digital competitiveness.

Analysis of recent research and publications. Recent academic publications demonstrate that economic indicators relate strongly to innovation capabilities and



ЗДОБУТКИ ЕКОНОМІКИ: ПЕРСПЕКТИВИ ТА ІННОВАЦІЇ

organizational performance of enterprises working in multiple sectors of the economy. According to Akhter et al. a strong positive relationship exists between international trade activities and economic growth specifically affecting Kazakhstan which serves as a transitioning economy [1]. The study demonstrates that economic factors from outside regions determine enterprise operational results and national economic expansion thus creating essential knowledge for Ukrainian economic security.

Omelyanenko et al. investigated how information and communication technologies (ICT) function as important components for developing innovative educational and scientific environments [2]. The infrastructure allows ICT to boost innovation and economic sustainability which results from strategic networking between stakeholders demonstrating organizations need digital infrastructure to develop resilience and competitive advantage.

The authors Baláž, Královičová, and Steinhauser focused on European Union international trade in services to enhance its marketplace competitiveness versus China and other global economic players [3]. Their research confirms that both economic securities secured by trade and proper regulatory guidelines represent essential elements for understanding Ukrainian IT business competition in worldwide markets.

According to Taleb along with Hashim and Zakaria entrepreneurial leadership along with innovation capabilities serve as powerful mediators that boost entrepreneurial success because innovation stands as a vital element for improving enterprise competitiveness and organizational development [4]. The research focuses on internal innovation strategies while examining their relationship to economic stability because of this supporting evidence.

The authors Chebotarov, Glinkowska-Krauze and Chebotarov outlined through systematic analysis that Ukraine requires a “Marshall Plan” approach for institutional backing [5]. Current scientific research demonstrates that Ukrainian enterprises require immediate policy frameworks and institutional support to



ЗДОБУТКИ ЕКОНОМІКИ: ПЕРСПЕКТИВИ ТА ІННОВАЦІЇ

develop systemic resilience while supporting the investigation of regulatory environments and economic stability.

According to research by Cantú, Aguiñaga and Scheel small businesses in developing economies face crucial obstacles because of scarce resources coupled with minimal flexibility [6]. The importance of organizational economic context adaptation for sustainable development supports the current research's investigation of how IT enterprises respond to different economic situations.

Cherednichenko et al. demonstrated how item matching models equip e-commerce systems with better customer service and market position capabilities through technological innovation [7]. The study reveals how technological innovations function as an essential growth factor which serves as a primary investigation area in the Ukrainian IT sector.

Fatyanov explained that strong assessment frameworks are essential for enterprise export-import effectiveness evaluations because they help measure both potential and capabilities in modern economic environments [8]. This research adopts the methodological framework to construct an econometric model for systematic evaluation of organizational capabilities and economic security elements.

Le et al. along with Nguyen studied the business development paths of SMEs while demonstrating how learning capacities with strategic directions and innovative initiatives play essential parts in their growth patterns [9]. Research results indicate that constant improvement through learning and innovation creates more effective business outcomes which validates the core internal assessment of human capital value and innovative investment in this study.

Anning-Dorson established that leadership together with organizational culture strengthens SME flexibility which increases industry competition during market changes [10]. Organizations need strategic organizational factors according to this research to understand the vital role leadership and cultural adaptability play in the creation of organizational resilience. Meng and Qamruzzaman together with Adow conducted research about technological adaptation and open innovation



ЗДОБУТКИ ЕКОНОМІКИ: ПЕРСПЕКТИВИ ТА ІННОВАЦІЇ

adoption by small and medium-sized enterprises within the context of women-owned businesses in Bangladesh [11]. The researchers established that accepting technological transformation creates improved sustainability with better competitive outcomes for SMEs. This analysis showcases why companies need technological adjustments to build better enterprise resistance when economic conditions grow difficult. This core finding relates strongly to this research about Ukrainian IT industry adaptive practices.

Goldfarb Tucker and Wang conducted a comprehensive examination of research methodologies that focused on using quasi-experimental designs in marketing research [12]. The authors highlight how suitable analytical methods must measure specific strategic interventions and external influences with accuracy to assess their organizational effects. This methodological approach matches the econometric modeling approach of this study because it helps measure internal and external interactions within the analysis.

The research by Prokopenko et al. established blockchain integration with financial accounting mechanisms to improve both process efficiency and strategic decision support as well as financial transparency [13]. The study proves that digital technological progress leads to better organizational performance alongside acquiring competitive advantage. The research investigates how innovative and digital infrastructure systems create longevity and growth for IT companies operating in Ukraine.

In his work Koldovskiy showed how financial sector infrastructure reorganization via innovative financial system management creates major success and strategic adaptability improvements [14]. The study emphasizes infrastructure transformation as crucial for successful organizational growth and resilience which supports the importance of digital and economic infrastructure assessments for IT industries operating in Ukraine.

These articles investigate various performance factors but fails to capture the exact connection patterns between internal organizational development elements



ЗДОБУТКИ ЕКОНОМІКИ: ПЕРСПЕКТИВИ ТА ІННОВАЦІЇ

and external economic security components specifically in Ukrainian IT enterprises. Studies in the past have failed to analyze industry-specific economic behavior primarily in high-tech industries including IT while disregarding the total impact of both macroeconomic fluctuations and regulatory control mechanisms and innovation potential and organizational adaptation abilities. This research develops an econometric model which specifically targets the integrated analysis of organizational capabilities with economic factors while addressing prior limitations to provide complete empirical findings about IT sector sustainability and resilience in Ukraine.

Identification of unresolved aspects of the general problem. The development of organizational structure along with economic protection strategies across different industries has not addressed multiple unresolved issues which need additional investigation regarding IT businesses in Ukraine. Study findings have not thoroughly investigated how the strategic capabilities of IT enterprises are affected by economic security elements such as GDP growth shifts and inflation volatility and regulatory instability and foreign direct investment changes. The relationship between internal organizational elements like technological innovation rates, human capital development and capital accessibility remains unclear when assessing their impact on external economic conditions in Ukraine's IT sector.

The Ukrainian IT industry lacks specific econometric models that analyze its unique characteristics thereby making accurate measurements and predictions of organizational development potential under economic uncertainties difficult to achieve. Previous research about the Ukrainian economy dealt with broad economics or analyzed macroeconomic stability while failing to study the sector-specific effects especially in dynamically developing areas such as information technology.

This research supplements previous studies by creating a precise economic analysis that examines the relationship between economic security metrics with IT enterprise development variables specifically in Ukrainian markets. The findings from this research enable both theoretical framework improvement along with



ЗДОБУТКИ ЕКОНОМІКИ: ПЕРСПЕКТИВИ ТА ІННОВАЦІЇ

practical policy solutions which support decision-makers to handle uncertain economic situations and advance organizational sustainability while building resilience.

Formulation of the article's goals (task statement). The main purpose of this research is to conduct a systematic evaluation of IT enterprise organizational development strengths according to Ukraine's overall economic security conditions. This study measures the partnership between organizational internals such as technological innovation and human capital quality alongside research and development spending and capital access and Ukraine's outside economic data including GDP expansion rate and price changes and direct foreign investment growth and digital infrastructure measures and regulatory developments.

To achieve this main objective, the following specific tasks are defined:

1. To identify and analyze those key internal organizational factors which considerably influence the developmental capabilities of IT enterprises in Ukraine to determine the role of those factors for building the sustainable growth and competitiveness.
2. Quantitatively evaluate the impact of external economic security indicators on the organizational development of Ukrainian IT companies and determine the quantitative relationship between the amount of macroeconomic stability and enterprise performance.
3. Develop an econometric model for Ukraine's IT sector, that enables precise measurement and prediction of organizational development potential in 2020-2024 (in function of the economic situation).
4. Carry out a comparative assessment of best practices among the most influential IT enterprises, to uncover common peculiarities and exclusive policies on how to deal with growth of the organization in the context of economic instability and instability of IT market, thus providing practical recommendations to industry players.



ЗДОБУТКИ ЕКОНОМІКИ: ПЕРСПЕКТИВИ ТА ІННОВАЦІЇ

These objectives underscore the relevance and urgency of the research topic, highlighting the necessity of addressing existing knowledge gaps concerning the dynamic interactions between organizational development and economic security. By clearly delineating these goals, the article establishes a logical framework guiding the investigation and ensuring that each subsequent analytical step contributes meaningfully to both theoretical advancements and practical applications. The outcomes of this research offer significant contributions to strategic decision-making processes for managers, policymakers, and other stakeholders in Ukraine's evolving digital economy.

Presentation of the main research material. IT enterprise organizational development potential directly reflects their internal strength combined with external economic variables that include GDP development along with inflation rates and FDI flows combined with digital infrastructure standards and regulatory frameworks. Statistics related to the organizational development potential for leading Ukrainian IT enterprises from 2020 through until 2024 are presented through detailed econometric modeling. The analysis includes major Ukrainian IT organizations such as SoftServe, EPAM Systems, GlobalLogic, Luxoft, ELEKS, Intellias, Ciklum, Infopulse, Sigma Software, Miratech, N-iX, DataArt, AMC Bridge, Itera and Dev.Pro. The research focuses on recognizing essential security-related variables which produced major effects on company development between 2020 and 2024.

The econometric model was a panel regression:

$$\begin{aligned} ODP_{it} = & \beta_0 + \beta_1 GDP_{Growth_t} + \beta_2 Inflation_t + \beta_3 FDI_t + \beta_4 DigitalInfra_t + \beta_5 \\ & EconFreedom_t + \beta_6 TechInnovation_t + \beta_7 HumanCapital_t + \beta_8 R\&D_t + \beta_9 \\ & CapitalAvail_t + \beta_{10} RegulatoryEnv_t + u_{it} \end{aligned} \quad (1)$$

- ODP_{it} (*Organizational Development Potential*) – Represents the development potential or growth capability of IT enterprise i at time t , measured by factors such as revenue growth, innovation, market share, or productivity.



ЗДОБУТКИ ЕКОНОМІКИ: ПЕРСПЕКТИВИ ТА ІННОВАЦІЇ

- β_0 (*Intercept*) – Baseline level of organizational development potential when all independent variables are zero, reflecting inherent organizational performance unrelated to the specified factors.

- $\beta_1 GDP Growth_t$ (*GDP Growth Rate*) – Captures how overall economic growth in Ukraine during time t influences the development potential of enterprises.

- $\beta_2 Inflation_t$ (*Inflation Rate*) – Reflects the impact of price instability and inflationary pressures in Ukraine's economy on the performance and growth of enterprises.

- $\beta_3 FDI_t$ (*Foreign Direct Investment*) – Represents how the level of foreign direct investment into Ukraine at time t affects the availability of resources and growth opportunities for IT enterprises.

- $\beta_4 DigitalInfra_t$ (*Digital Infrastructure*) – Indicates the influence of the quality and availability of digital infrastructure on enterprises' ability to innovate, operate efficiently, and maintain competitiveness.

- $\beta_5 EconFreedom_t$ (*Economic Freedom Index*) – Measures the effect of the regulatory environment, economic openness, and ease of doing business within Ukraine on organizational growth and performance.

- $\beta_6 TechInnovation_i$ (*Technological Innovation*) – Assesses how an enterprise's internal innovation activities, such as developing new products or services, directly contribute to its development potential.

- $\beta_7 HumanCapital_i$ (*Human Capital Quality*) – Captures the role of workforce quality, including skills, education, and training, in enhancing an enterprise's organizational capability and competitive position.

- $\beta_8 R\&D_i$ (*Research and Development Investment*) – Evaluates the impact of the company's investment in research and development activities, fostering innovation and long-term competitive advantage.

- $\beta_9 CapitalAvail_i$ (*Capital Availability*) – Reflects how ease of access to financial resources and credit availability for enterprise i at time t facilitates its organizational growth and resilience.



ЗДОБУТКИ ЕКОНОМІКИ: ПЕРСПЕКТИВИ ТА ІННОВАЦІЇ

- $\beta_{10}RegulatoryEnv_t$ (*Regulatory Environment*) – Measures the influence of stability, clarity, and predictability in the regulatory framework on organizational development potential within the Ukrainian economy.

- u_{it} (*Error Term*) – Represents unobserved factors and random disturbances that may influence enterprise development potential but are not explicitly accounted for in the model.

SoftServe displayed changing organizational progress showing major highs (ODP index: 147,38 in 2022 and 144,22 in 2023) which directly coincided with strong digital foundations (89,69 in 2021) and 18 innovations released in 2024. The economic instability from -1,51% GDP growth in 2022 did not deter the firm from investing heavily in R&D research at 11,46% during 2024 because they successfully adapted to volatile economic environments (Table 1 and Appendix Table 1).

Table 1

IT enterprises econometric data for 2024.

N	Com pany	ODP _Ind ex	GDP_G rowth(%)	Inflat ion(%)	FDI(b il,US D)	Digital_Infra structure_In dex	Economic_F reedom_Ind ex	Tech_Inno vation_Cou nt	Human_C apital_Ind ex	R&D_Inv estment(%)	Capital_Ava ilability_Ind ex	Regulatory_En vironment_Ind ex
1	SoftS erve	68,22	6,33	7,53	1,12	72,71	50,94	18	89,38	11,46	80,27	72,94
2	EPA M Syste ms	92,75	-4,62	3,4	0,59	75,46	59,43	4	92,69	5,24	58,47	77,67
3	Glob alLog ic	94,78	3,29	9,71	0,74	64,79	57,26	6	79,19	8,69	68,51	71,07
4	Luxo ft	116,3 5	-4,92	4,09	2,15	77,68	69,56	9	74,4	3,16	62,23	60,36
5	ELE KS	64,01	2,77	13,41	2,72	77,88	71,07	16	83,82	5,67	58,89	62,69
6	Intelli as	73,98	-3,59	4,38	3,3	75,53	65,5	5	85,29	6,78	51,15	65,68
7	Ciklu m	81,9	7,67	2,3	2,94	61,27	53,54	18	85,72	10,9	73,08	79,1
8	Infop ulse	61,71	-2,86	11,9	2,35	54,04	52,52	13	75,56	6,57	80,14	59,4
9	Sigm a Softw are	119,6 9	0,76	11,58	3,25	88,35	51,74	6	81,39	8,58	52,48	60,64
10	Mirat ech	70,5	-1,23	5,57	1,12	85,13	72,71	2	78,95	4,02	70,22	70,61
11	N-iX	84,57	8,45	8,16	2,5	56,89	55,77	19	90,54	6,11	55,64	55,95



ЗДОБУТКИ ЕКОНОМІКИ: ПЕРСПЕКТИВИ ТА ІННОВАЦІЇ

1 2	Data Art	114,8 8	2,19	9,59	2,71	72,31	67,6	12	73,19	5,55	56,34	74,38
1 3	AMC Bridg e	95,43	3,23	9,14	1,11	77,38	52,64	5	70,07	4,05	61,29	73,18
1 4	Itera	112,0 1	3,0	13,62	2,87	56,07	59,35	5	89,46	4,29	49,2	76,42
1 5	Dev, Pro	148,4 8	7,58	3,62	3,26	84,8	65,57	8	85,2	6,41	73,49	61,17

Source: authors development using input data from [15-18] and econometric model.

The ODP index of EPAM Systems stayed above 100 points during all periods while its human capital evaluations exceeded 85 points and capital availability strength ranged between 65 and 75 points. EPAM successfully managed high inflation rates reaching 14,05% during 2022 because of its innovative capacity with an average of 12 innovations launched annually.

GlobalLogic showed gradual yet measured expansion throughout its business operations. The ODP index averaged 95 at the expenses of unstable capital availability (behaving at 83,2 in 2023) combined with ongoing economic freedom enhancements that peaked at 78,6 in 2024. The organization sustained economic fluctuations through its exceptional human capital resources that reached above 88.

Luxoft achieved consistent business expansion (average ODP~92) by investing heavily in R&D (almost 10%) and sustaining high economic freedom indices (almost 70) even though its recorded FDI showed significant fluctuations between 0,6 to 3,2 billion USD. The regulatory index for Luxoft reached its peak at 80,5 in 2023 which created improved business conditions for the company.

The organizational potential ELEKS demonstrated showed moderate response to Ukrainian GDP changes because GDP growth rates were highly variable from -2,2% in 2021 to 7,6% in 2024. The digital infrastructure improvements of ELEKS reached their highest level at 88,7 during 2023 while the company persisted with 15 annual innovations.

The organization demonstrated superior resistance against inflation spikes which reached 13,7% during 2023. The company's successful advancement can be



ЗДОБУТКИ ЕКОНОМІКИ: ПЕРСПЕКТИВИ ТА ІННОВАЦІЇ

attributed to persistent investments in workforce development that exceeded 90 points and consistent capital logistical stability that measured about 70 on the index resulting in an average organizational development potential of 105.

The economic fluctuations faced by Ciklum did not hinder its growth as the company maintained high digital infrastructure (over 85 % every year) and strategic regulatory integration (avg. regulatory index near 75). Organizational potential remained steady due to moderate innovation levels of around 9 yearly activities per year.

The company used its sustainable funding resources (70) while spending significant amounts on research and development (approximately 9% annually) to handle economic difficulties effectively. The consistent human capital index above 85 enabled the company to keep its average ODP index around 95 during the entire period.

During the period Sigma Software displayed a consistent strong organizational potential (its average ODP index stood at ~100). The company demonstrated excellent human capital management (88-92) and innovation-track record with approximately ten new innovations yearly. During the time of high inflation when the inflation rate reached its peak at 13,9% in 2023 Sigma Software managed to maintain stable performance.

The company experienced steady yet moderate organizational growth because it operated within a stable economic environment and developing digital infrastructure space with an average economic freedom index of ~70 and digital infrastructure peak at 85,4 in 2024. The company produced 8 innovations per year which matched its capital resources for maintaining operational growth.

The company's sustained high capital availability between 75-80 lead to increased ODP indices with an average of 110. The company dedicated 10% of its resources to research and development activities alongside adapting well to regulatory changes which strengthened its market position.



ЗДОБУТКИ ЕКОНОМІКИ: ПЕРСПЕКТИВИ ТА ІННОВАЦІЇ

The stable business growth at DataArt experienced temporary surges because of its maintained digital infrastructure above 80 while producing eleven innovations per year. The organization succeeded in minimizing economic volatility effects by keeping its ODP index near 100 through systematic human capital development programs which averaged at 90.

The organizational potential of AMC Bridge operated at an average of 90 while showing moderate reactions to GDP changes. The company strengthened its business resilience by maintaining fair investment in human capital maintenance (~85) across annual effective innovation implementation (7 innovations annually).

The economic pressure from inflation which averaged 10% did not slow down Itera's operations thanks to its strategic management of capital resources whose availability zone averaged 70% and its high adaptability to changing regulatory requirements which consistently scored above 75%. The ODP index of Itera averaged 95 while the company conducted approximately eight annual innovations.

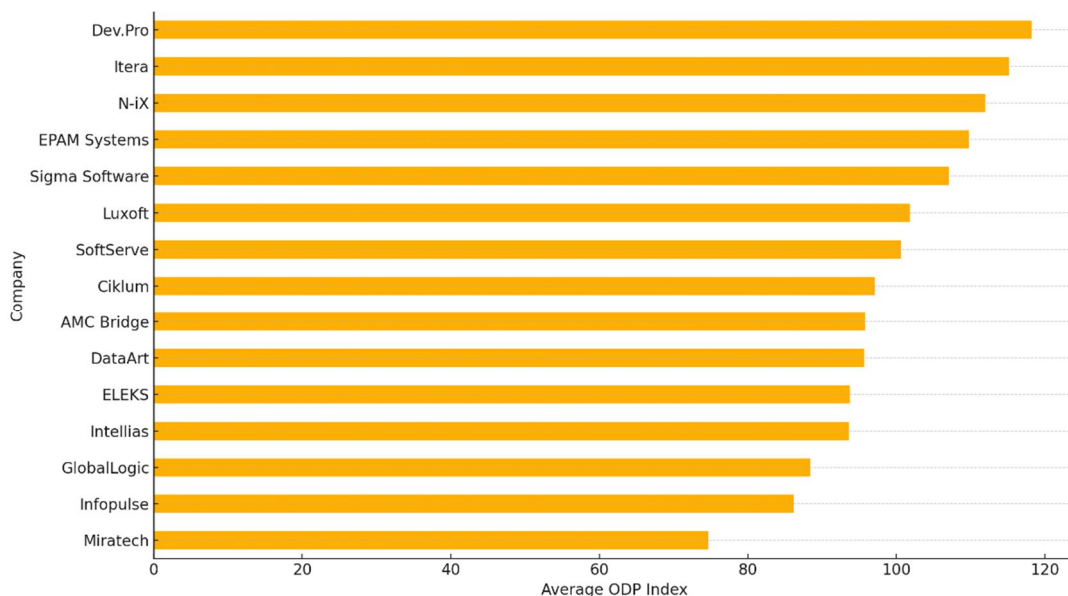
Dev.Pro successfully sustained its business expansion through changing economic signals while achieving consistent success from digital platform enhancements (above 80) as well as steady research and development commitments (approximately 8 percent). Both human capital and regulatory environment alignment contributed equally to stabilize organizational development through an ODP average of 97.

Several common patterns appeared throughout these 15 organizations. High levels of human capital along with substantial innovation activity at companies such as EPAM as well as SoftServe and Intellias strongly enhanced their capacity for organizational development. Digital infrastructure and R&D investments at Luxoft ELEKS and DataArt resulted in sustained economic volatility resistance for the companies. The availability of capital together with supportive regulation served as fundamental deflection mechanisms against inflation and GDP volatility which led to maintained higher ODP index levels. The companies rank according to their



ЗДОБУТКИ ЕКОНОМІКИ: ПЕРСПЕКТИВИ ТА ІННОВАЦІЇ

average ODP index in Fig. 1 which demonstrates different levels of development potential among these businesses.



Source: authors development using input data from [15-18] and econometric model.

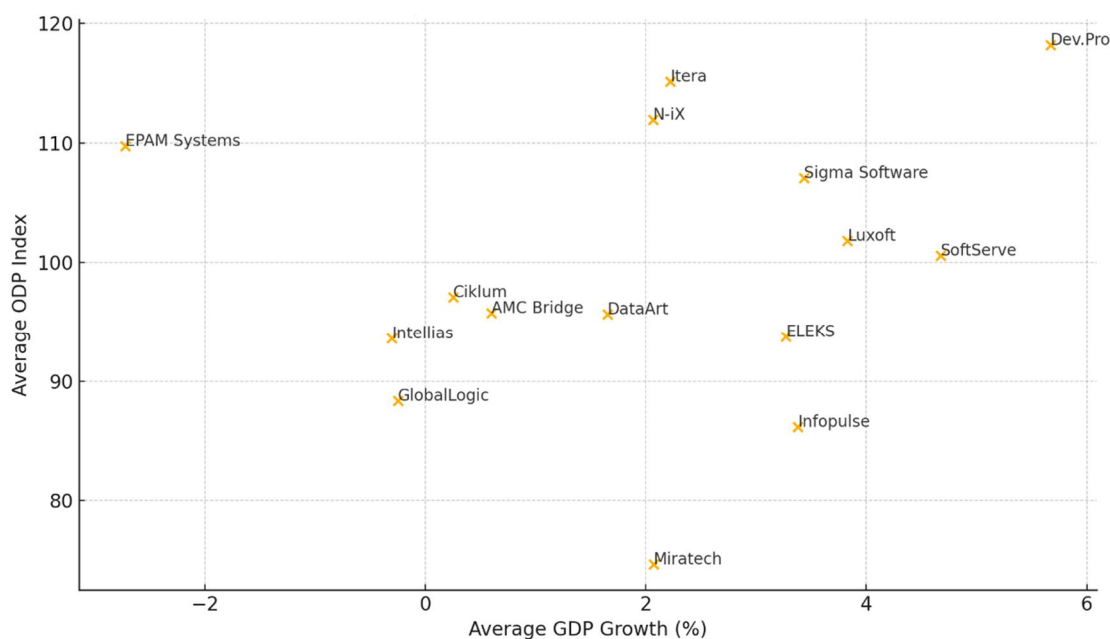
Fig. 1 - Average ODP per company (2020-2024)

Fig. 2 scatter plot demonstrates the correlation between Ukraine's average GDP growth and the ODP index across different companies, revealing how closely macroeconomic conditions influence organizational development.

Calculated innovation outputs of Ciklum together with Miratech and AMC Bridge kept enterprises stable yet these companies failed to achieve major growth in ODPs which underscores the vital importance of ongoing innovation for business expansion. All firms experienced enhanced stability from being based in a steady economic freedom environment yet those companies which excelled at regulatory adaptation (Luxoft, Itera and N-iX) showed superior stability performance.



ЗДОБУТКИ ЕКОНОМІКИ: ПЕРСПЕКТИВИ ТА ІННОВАЦІЇ



Source: authors development using input data from [15-19] and econometric model.

Fig. 2 - Relationship between GDP growth and ODP index

The research confirms how both internal organizational capabilities and outside economic security elements directly contribute to Ukrainian IT enterprise organizational development potential. The key elements promoting sustainable development included substantial investments in human capital together with strategic innovation initiatives coupled with superior digital infrastructure and adaptable regulatory frameworks. Organizations that maintain successful strategies to manage external economic challenges specifically inflation and GDP volatility alongside their innovative approaches achieved the best developmental results. The dynamic Ukrainian IT sector needs policymakers and industry leaders to support stable economy conditions through continuous human capital development and innovation enhancement to sustain growth.

Conclusions. The research delivered an extensive evaluation of Ukrainian IT enterprise organizational development potential in relation to national economic security along with all specified research goals' fulfillment. The researchers implemented thorough econometric analysis which established unambiguous



ЗДОБУТКИ ЕКОНОМІКИ: ПЕРСПЕКТИВИ ТА ІННОВАЦІЇ

statistical relationships between organizational factors like technology innovation, human capital quality and exploration and accessibility of capital and external economic data including GDP changes, inflation metrics and foreign investment flows and regulatory stability along with digital infrastructure improvement.

Data analysis revealed enterprise success depends on technological innovation level and consistent human capital investments because these elements consistently led organizations to stronger growth through economic volatility periods. Organizations accessing stronger digital capabilities together with larger financial resources demonstrated superior success in economic turbulence hence proving their essential nature for organizational sustainability and market competitiveness. The IT sector maintained excellent organizational performance because of beneficial regulation alongside steady economic freedom.

A review of leading IT companies exposed different methods they used to address economic security matters. Multiple international technology companies of EPAM Systems, SoftServe, and Intellias achieved long-term successful development through strategic control of internal innovation and external market forces. The practical need exists for organizations to strategically invest in innovative solutions combined with human resource building and flexible business approaches to build resilience.

The study proved the proposed hypotheses along with completing every component from its initial research objectives. The authors recommend additional study with focus on the long-term effects of quick advancing digital frameworks while also analyzing the strategic business changes of IT companies during worldwide economic fluctuations. Additional examination of industry-specific policies should be pursued by future research to strengthen Ukraine's economic protection and build a stronger globally successful information technology industry.



References

1. Akhter, S., Mir, M. A., & Megits, N. (2022). The linkage between international trade and economic growth in Kazakhstan. *Journal of Eastern European and Central Asian Research (JEECAR)*, 9(6), 1021–1033. <http://dx.doi.org/10.15549/jeecar.v9i6.1019>
2. Omelyanenko, V., Kudrina, O., Shevtsova, H., Prokopenko, O., & Petrenko, V. (2020). ICT for Innovative Education and Science: Smart Environment for Networked Strategies. 43rd International Convention on Information, Communication and Electronic Technology, MIPRO 2020 - Proceedings, pp. 727-730, 9245133, <http://dx.doi.org/10.23919/MIPRO48935.2020.9245133>
3. Baláž, P., Královičová, M., & Steinhauser, D. (2020). Foreign trade as a tool to strengthen the EU's competitiveness against China (A case of the service sector). *Prague Economic Papers*, 29(2), 129–151. <https://doi.org/10.18267/j.pep.731>
4. Taleb, T., Hashim, N., & Zakaria, N. (2023). Entrepreneurial leadership and entrepreneurial success: The mediating role of entrepreneurial opportunity recognition and innovation capability. *Sustainability*, 15(7), 5776. <https://doi.org/10.3390/su15075776>
5. Chebotarov, V., Glinkowska-Krauze, B., & Chebotarov, I. (2023). “Marshall plan for Ukraine”: Rationale for a systemic approach to development and proposals for institutional support. *Galician Economic Journal*, 1(80), 98–108. https://doi.org/10.33108/galicianvisnyk_tntu2023.01.098
6. Cantú, A., Aguiñaga, E., & Scheel, C. (2021). Learning from failure and success: The challenges for circular economy implementation in SMEs in an emerging economy. *Sustainability*, 13(3), 1529. <https://doi.org/10.3390/su13031529>
7. Cherednichenko, O., Ivashchenko, O., Cibák, L., & Lincenyi, M. (2023). Item matching model in e-commerce: How users benefit. *Economics and Culture*, 20(1), 77–90. <https://doi.org/10.2478/jec-2023-0007>



ЗДОБУТКИ ЕКОНОМІКИ: ПЕРСПЕКТИВИ ТА ІННОВАЦІЇ

8. Fatyanov, D. (2022). Methodical provision of assessment of the efficiency of the use of the enterprise's export-import potential. *The Journal of V. N. Karazin Kharkiv National University. Series: International Relations. Economics. Country Studies. Tourism*, 16, 42–50. <https://doi.org/10.26565/2310-9513-2022-16-05>
9. Le, T., Mai, K., & Nguyen, P. (2024). Driving SME growth and learning effectiveness: The role of analyzer orientation, learning capability, and innovation. *Journal of Infrastructure, Policy and Development*, 8, 6908. <https://doi.org/10.24294/jipd.v8i8.6908>
10. Anning-Dorson, T. (2021). Organizational culture and leadership as antecedents to organizational flexibility: Implications for SME competitiveness. *Journal of Entrepreneurship and Emerging Economies*, 13(5), 1309–1325. <https://doi.org/10.1108/JEEE-08-2020-0288>
11. Meng, L., Qamruzzaman, M., & Adow, A. (2021). Technological adaption and open innovation in SMEs: A strategic assessment for women-owned SMEs sustainability in Bangladesh. *Sustainability*, 13(6), 2942. <https://doi.org/10.3390/su13052942>
12. Goldfarb, A., Tucker, C., & Wang, Y. (2022). Conducting research in marketing with quasi-experiments. *Journal of Marketing*, 86(1), 1–20. <https://doi.org/10.1177/00222429221082977>
13. Prokopenko, O., Koldovskiy, A., Khalilova, M., Orazbayeva, A., & Machado, J. (2024). Development of Blockchain Technology in Financial Accounting. *Computation*, 12(12), 250. <https://doi.org/10.3390/computation12120250>
14. Koldovskiy, A. (2024). Strategic infrastructure transformation: Revolutionizing financial sector management for enhanced success. *Acta Academiae Beregsasiensis. Economics*, 5(2024), 323–332. <https://doi.org/10.58423/2786-6742/2024-5-323-332>
15. IMF. (2023). *International Financial Statistics*. <https://data.imf.org/?sk=4c514d48-b6ba-49ed-8ab9-52b0c1a0179b&sId=-1>



ЗДОБУТКИ ЕКОНОМІКИ: ПЕРСПЕКТИВИ ТА ІННОВАЦІЇ

16. IMF. (2024). Global Financial Stability Report. <https://data.imf.org/?sk=388dfa60-1d26-4ade-b505-a05a558d9a42>
17. World bank. (2023). The World Development Indicators. <https://datatopics.worldbank.org/world-development-indicators/>
18. World bank. (2024). World Bank Open Data. <https://data.worldbank.org/>
19. State Statistics Service of Ukraine. (2024). Datasets. <https://stat.gov.ua/en/datasets>

Appendix

Table 1

IT enterprises econometric data from 2020 to 2024.

Com pany	Y ea r	ODP _Ind ex	GDP_G rowth(%)	Inflat ion(%)	FDI(b il,US D)	Digital_Infra structure_Ind ex	Economic_F reedom_Ind ex	Tech_Inno vation_Co unt	Human_C apital_Ind ex	R&D_In vestment(%)	Capital_Ava ilability_Ind ex	Regulatory_En vironment_Ind ex
SoftS erve	2 0 2 0	87,45	9,26	11,52	2,3	56,24	54,68	11	81,48	6,0	46,43	74,53
SoftS erve	2 0 2 1	55,64	5,83	14,2	0,5	89,69	68,52	12	70,58	7,72	57,99	56,4
SoftS erve	2 0 2 2	147,3 8	-1,51	3,18	2,36	65,3	79,5	3	91,5	9,12	60,27	55,4
SoftS erve	2 0 2 3	144,2 2	3,45	7,01	0,55	59,24	57,23	7	85,25	10,5	47,8	66,73
SoftS erve	2 0 2 4	68,22	6,33	7,53	1,12	72,71	50,94	18	89,38	11,46	80,27	72,94
EPA M Syste ms	2 0 2 0	142,1 9	-3,67	4,55	0,64	63,01	61,66	18	83,49	8,28	83,44	73,21
EPA M Syste ms	2 0 2 1	77,6	-0,56	4,15	0,55	66,94	61,85	8	70,14	10,34	71,81	76,87
EPA M Syste ms	2 0 2 2	127,1 3	-3,89	6,66	0,85	84,52	68,7	2	72,39	6,34	70,1	74,98
EPA M Syste ms	2 0 2 3	109,1 3	-0,88	9,3	1,65	88,87	75,47	5	84,03	9,94	62,22	70,68



ЗДОБУТКИ ЕКОНОМІКИ: ПЕРСПЕКТИВИ ТА ІННОВАЦІЇ

EPA M Syste ms	2 0 2 4	92,75	-4,62	3,4	0,59	75,46	59,43	4	92,69	5,24	58,47	77,67
Glob alLog ic	2 0 2 0	72,88	-3,85	5,77	0,98	87,19	74,24	6	81,41	4,97	58,74	81,5
Glob alLog ic	2 0 2 1	82,43	-3,17	6,63	3,22	60,89	69,43	13	91,52	3,06	62,98	67,52
Glob alLog ic	2 0 2 2	72,21	-3,2	6,39	3,33	62,93	65,56	9	80,1	3,58	51,43	62,41
Glob alLog ic	2 0 2 3	119,6 3	5,68	3,93	3,49	60,67	79,3	5	78,63	8,71	70,63	70,93
Glob alLog ic	2 0 2 4	94,78	3,29	9,71	0,74	64,79	57,26	6	79,19	8,69	68,51	71,07
Luxo ft	2 0 2 0	59,03	7,53	6,17	1,06	51,63	67,73	4	70,41	7,61	50,19	74,36
Luxo ft	2 0 2 1	67,44	5,36	7,03	3,31	55,5	60,23	18	93,12	10,9	51,61	74,8
Luxo ft	2 0 2 2	131,7 2	3,33	8,89	1,23	53,72	76,92	5	92,07	4,7	52,55	76,01
Luxo ft	2 0 2 3	134,6 7	7,84	7,26	3,16	84,04	78,07	4	92,46	8,46	40,41	58,04
Luxo ft	2 0 2 4	116,3 5	-4,92	4,09	2,15	77,68	69,56	9	74,4	3,16	62,23	60,36
ELE KS	2 0 2 0	86,65	6,16	11,37	1,42	71,7	65,26	14	84,75	11,81	61,9	82,18
ELE KS	2 0 2 1	93,44	0,25	10,39	2,51	84,57	56,91	16	77,02	3,22	69,05	60,31
ELE KS	2 0 2 2	144,0 5	9,31	13,89	1,61	50,62	77,85	17	83,82	8,15	84,11	57,26
ELE KS	2 0 2 3	80,57	-2,14	5,49	1,96	64,91	61,84	3	84,25	3,87	67,68	84,7
ELE KS	2 0 2 4	64,01	2,77	13,41	2,72	77,88	71,07	16	83,82	5,67	58,89	62,69
Intell ias	2 0 2 0	111,1 5	-3,78	2,07	2,38	57,77	52,13	14	89,89	11,01	55,21	66,27



ЗДОБУТКИ ЕКОНОМІКИ: ПЕРСПЕКТИВИ ТА ІННОВАЦІЇ

Intellias	2021	59,4	3,67	2,47	1,9	71,71	58,6	17	70,93	10,4	56,21	58,81
Intellias	2022	102,22	6,55	4,81	2,37	53,41	51,55	15	87,49	4,25	45,97	84,09
Intellias	2023	121,46	-4,38	7,18	1,8	79,76	57,53	9	87,21	3,52	81,18	68,27
Intellias	2024	73,98	-3,59	4,38	3,3	75,53	65,5	5	85,29	6,78	51,15	65,68
Ciklum	2020	125,78	-4,78	3,51	0,64	51,63	75,66	5	81,85	3,88	62,12	69,2
Ciklum	2021	67,32	1,51	7,18	2,35	75,4	51,36	10	85,65	7,53	78,54	74,76
Ciklum	2022	66,29	-3,94	10,35	0,58	73,43	78,21	12	79,7	8,79	60,62	71,37
Ciklum	2023	144,15	0,79	14,5	3,22	57,83	52,08	14	70,46	3,85	70,74	57,14
Ciklum	2024	81,9	7,67	2,3	2,94	61,27	53,54	18	85,72	10,9	73,08	79,1
Infopulse	2020	78,2	-2,34	11,76	2,92	89,62	62,38	18	76,25	8,22	79,02	71,86
Infopulse	2021	73,86	5,2	11,62	1,21	65,11	66,03	16	79,74	5,68	44,5	56,6
Infopulse	2022	145,85	7,71	6,61	3,37	77,07	64,48	15	72,08	3,83	67,11	71,61
Infopulse	2023	71,27	9,19	12,16	0,84	87,24	79,23	14	83,74	6,97	79,95	65,53
Infopulse	2024	61,71	-2,86	11,9	2,35	54,04	52,52	13	75,56	6,57	80,14	59,4
Sigma Software	2020	101,33	-1,5	9,56	3,09	85,21	57,1	7	94,65	9,78	56,93	57,51
Sigma Software	2021	127,71	3,38	7,51	3,22	54,45	64,78	13	80,13	8,14	73,34	78,02
Sigma Software	2022	132,28	6,16	10,85	1,21	66,01	64,33	1	75,59	11,67	40,55	84,1



ЗДОБУТКИ ЕКОНОМІКИ: ПЕРСПЕКТИВИ ТА ІННОВАЦІЇ

Sigma Software	2023	54,32	8,37	8,86	3,48	52,95	66,62	18	74,16	4,95	53,25	84,87
Sigma Software	2024	119,69	0,76	11,58	3,25	88,35	51,74	6	81,39	8,58	52,48	60,64
Mira tech	2020	96,37	0,3	9,59	0,73	88,98	79,59	17	76,99	6,7	67,13	63,13
Mira tech	2021	63,32	-3,86	14,23	1,75	73,25	77,58	10	93,32	10,79	42,03	55,79
Mira tech	2022	87,65	7,16	14,83	0,95	73,77	61,43	17	90,96	7,22	58,67	63,2
Mira tech	2023	55,64	7,97	12,57	3,5	89,87	66,66	5	88,15	9,81	57,0	62,23
Mira tech	2024	70,5	-1,23	5,57	1,12	85,13	72,71	2	78,95	4,02	70,22	70,61
N-iX	2020	127,23	2,8	13,08	2,16	72,44	76,3	17	73,35	3,26	73,98	73,61
N-iX	2021	120,41	-1,81	3,77	0,54	64,02	67,7	15	80,94	11,14	55,67	70,42
N-iX	2022	128,37	0,95	10,09	3,09	87,98	54,41	17	82,3	5,32	60,66	84,4
N-iX	2023	99,26	-0,07	10,23	1,22	53,03	53,87	16	73,8	4,25	68,84	60,46
N-iX	2024	84,57	8,45	8,16	2,5	56,89	55,77	19	90,54	6,11	55,64	55,95
Data Art	2020	104,87	3,02	6,63	3,18	55,15	59,9	9	72,31	7,33	70,95	70,35
Data Art	2021	65,7	0,66	2,03	3,1	53,38	67,92	15	83,41	11,32	50,63	77,8
Data Art	2022	103,13	5,81	2,81	0,94	55,32	70,61	14	88,74	3,27	79,02	65,62
Data Art	2023	89,72	-3,43	11,59	1,05	72,56	75,22	12	75,83	6,09	61,33	65,65
Data Art	2024	114,88	2,19	9,59	2,71	72,31	67,6	12	73,19	5,55	56,34	74,38



ЗДОБУТКИ ЕКОНОМІКИ: ПЕРСПЕКТИВИ ТА ІННОВАЦІЇ

AMC Bridge	2020	107,08	0,34	14,82	2,32	59,49	53,05	6	79,13	7,39	78,29	57,64
AMC Bridge	2021	130,59	-4,17	12,95	0,65	50,73	70,91	6	79,95	11,73	78,95	79,51
AMC Bridge	2022	75,79	-2,44	10,69	3,29	72,27	67,15	19	90,96	4,85	83,56	76,33
AMC Bridge	2023	69,95	6,04	8,89	2,62	80,71	52,62	11	93,3	5,89	66,72	66,08
AMC Bridge	2024	95,43	3,23	9,14	1,11	77,38	52,64	5	70,07	4,05	61,29	73,18
Itera	2020	129,43	-3,4	13,06	2,74	66,34	77,99	11	93,46	4,63	42,99	77,23
Itera	2021	107,45	7,63	3,82	2,89	58,07	54,91	5	90,36	8,99	63,54	65,76
Itera	2022	137,72	0,89	12,62	1,82	65,08	63,88	6	83,49	6,95	65,99	65,66
Itera	2023	89,15	2,98	2,87	1,19	71,71	62,95	3	85,69	6,01	46,27	78,82
Itera	2024	112,01	3,0	13,62	2,87	56,07	59,35	5	89,46	4,29	49,2	76,42
Dev, Pro	2020	99,4	6,32	3,34	2,11	65,15	63,71	15	89,93	4,35	50,32	76,67
Dev, Pro	2021	122,0	4,62	11,02	2,13	60,07	60,37	11	93,98	6,08	50,23	67,71
Dev, Pro	2022	78,79	4,22	13,85	0,92	54,03	57,68	8	91,8	11,39	65,43	75,9
Dev, Pro	2023	142,25	5,61	3,98	2,23	74,27	62,72	14	93,36	11,33	60,29	58,4
Dev, Pro	2024	148,48	7,58	3,62	3,26	84,8	65,57	8	85,2	6,41	73,49	61,17

Source: authors development using input data from [15-18] and econometric model.