УДК 339.9:32:005.21:338.43(100)

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DOI: 10.32702/2306-6814.2025.21.44

FOOD SECURITY AS A POLITICAL AND METHODOLOGICAL CHALLENGE: THE INTEGRATION OF RATIONAL FRAMEWORKS AND COGNITIVE INTERACTION IN SHAPING FOOD POLICY

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ПРОДОВОЛЬЧА БЕЗПЕКА ЯК ПОЛІТИЧНА ПРОБЛЕМА І МЕТОДОЛОГІЧНИЙ ВИКЛИК: ІНТЕГРАЦІЯ РАЦІОНАЛЬНОЇ КОНСТРУКЦІЇ І КОГНІТИВНОЇ ВЗАЄМОДІЇ ПРИ РОЗРОБЦІ ПРОДОВОЛЬЧОЇ ПОЛІТИКИ

The purpose of this article is to examine the institutional mechanisms for bridging the gap between science and policy in addressing food security challenges. The central hypothesis rests on the assumption that contemporary political and economic thought requires the integration of two distinct

types of rationality: instrumental rationality, which ensures coherence, logic, and measurability of decisions, and communicative rationality, which builds trust, legitimacy, and cognitive alignment among the participants of the policy process. This need becomes particularly evident in the field of food policy, where decisions cannot be reduced to technical calculations nor rely solely on political convictions or ideological slogans.

The study substantiates the concept of cognitive-rational governance of food risks, which implies that every political action — from subsidies to import regulation — should be accompanied not only by analytical impact assessment but also by a program of cognitive adaptation that includes explanation, participation, and stakeholder engagement. In such a system, the expert acts not as a technical executor but as a facilitator of understanding, while the policymaker serves not as a client of expertise but as a communicator of public meaning. This represents the core of T. Slembeck's ideas, translated into the Tinbergenian framework of systemic reasoning.

The article argues that combining the approaches of J. Tinbergen and T. Slembeck opens a path toward a new form of international governance of food security. The Tinbergenian logic calls for institutions designed to coordinate policies, while Slembeck's cognitive perspective requires mechanisms of collaborative sense-making, in which countries align not only their data but also their perceptions of common goals. This synthesis gives rise to the concept of global cognitive policy, where international organizations function not as bureaucratic administrators but as centers of collective reasoning, helping nations synchronize their beliefs and risk assessments.

In the context of global food security, errors in accounting for time lags in policy formulation may lead to asynchronous cycles of overproduction and scarcity, as well as to political misjudgments that provoke unexpected crises. Tinbergen's notion of feedback in policy systems thus gains particular relevance: effective governance requires monitoring, intermediate evaluation, and adaptive correction mechanisms to ensure that policy remains responsive to real-world conditions. The combination of Tinbergen's structural rationalism and Slembeck's cognitive evolutionism reveals a new horizon for understanding food policy.

Метою статті є дослідження інституційних механізмів подолання розриву між наукою і політикою при вирішенні проблем продовольчої безпеки. Наукова гіпотеза статті базується на припущенні, що у сучасній світовій політико-економічній думці постає потреба поєднати два типи раціональності: інструментальну, що відповідає за послідовність, логіку і вимірюваність рішень, і комунікативну, що формує довіру, легітимність і когнітивну узгодженість між учасниками політичного процесу. Ця потреба особливо очевидна у сфері продовольчої політики, де рішення не можуть бути зведені до технічних розрахунків і водночас не можуть базуватися лише на політичних переконаннях чи ідеологічних гаслах.

Нами було обгрунтовано ідею когнітивно-раціонального управління продовольчими ризиками, яке передбачає, що кожна політична дія — від субсидії до імпортного регулювання — має супроводжуватися не лише аналітичною оцінкою впливів, а й програмою когнітивної адаптації: поясненням, участю зацікавлених сторін. У такій системі експерт виступає не як технічний виконавець, а як посередник у розумінні, а політик — не як замовник рішень, а як носій і промовець суспільного сенсу. Саме це є серцевиною ідей Т. Слембека, перенесених у тінбергенівський простір системного мислення. В статті стверджується, що об'єднання підходів Тінбергена-Слембека відкриває можливість нової форми міжнародного управління продовольчою безпекою. Тінбергеновська логіка вимагає створення інституцій для координації політик, а слембеків підхід — механізмів когнітивної співпраці, де країни не лише погоджують дані, а й формують спільні уявлення про цілі. Саме тут зароджується концепція глобальної когнітивної політики, у якій міжнародні організації виступають не як бюрократичні адміністратори, а як центри спільного мислення, що допомагають країнам синхронізувати свої переконання й оцінки ризиків.

В контексті глобальної продовольчої безпеки помилки у врахуванні часових лагів при формуванні продовольчої політики можуть призвести до неритмічних циклів надвиробництва та дефіциту, а також до політичних помилок, які потім породжують неочікувані кризові наслідки. Тінбергенова ідея про зворотний зв'язок у системах політики набуває тут ключового значення: необхідні системи моніторингу, проміжної оцінки і коригування дій, щоб політика залишалась адаптивною до реальних умов.

У поєднанні цих двох підходів — тінбергенівського структурного раціоналізму і слембеківського когнітивного еволюціонізму — можна побачити новий горизонт розуміння продовольчої

політики. У сучасному світі, де продовольчі системи стикаються із взаємопов'язаними кризами — кліматичною, енергетичною, демографічною, військово-політичною, — не достатньо лише мати точні моделі виробництва, цін чи запасів. Не менш важливо забезпечити когнітивну узгодженість між усіма учасниками процесу: урядами, виробниками, споживачами, міжнародними організаціями, науковими спільнотами. Без цієї узгодженості навіть найраціональніша політика не буде реалізована. Об'єднання ідей Я. Тінбергена і Т. Слембека дозволяє створити нову рамку для продовольчої політики — когнітивно-раціональний гуманізм, у якому рішення спираються на дані, але реалізуються через довіру; планування грунтується на моделях, але узгоджується через діалог; а ефективність вимірюється не лише цифрами, а й рівнем соціального прийняття і моральної зрілості суспільства.

Key words: global problems, imperative, hunger, food security, food crisis, food policy, food risks, food market, food products, agricultural production, economic policy, differentiation, tax policy, tax system, tax incentives, benefits, taxes, fiscal measures, fiscal stability, targeted support programs, subsidies, customs tariffs, investment policy, investment activity, investments, investment arbitrage, speculative instruments, global capital, futures market, welfare policy, sustainability, supply chains, resources.

Ключові слова: глобальні проблеми, імператив, голод, продовольча безпека, продовольча криза, продовольча політика, продовольчі ризики, продовольчий ринок, продукти харчування, агровиробництво, економічна політика, диференціація, податкова політика, податкова система, податкові стимули, пільги, податки, фіскальні заходи, фіскальна стабільність, цільові програми підтримки, субсидії, митні тарифи, інвестиційна політика, інвестиційна діяльність, інвестиції, інвестиційний арбітраж, спекулятивні інструменти, глобальний капітал, ринок ф'ючерсів, політика добробуту, стійкість, ланцюги постачання, ресурси.

INTRODUCTION

The problem of food security today stands out not only as an issue of welfare for particular social groups but as a systemic challenge for both national and international policy. Its nature is multidimensional: the production base, access to resources, logistics, pricing, income distribution, institutional capacity, and external shocks form a complex network of interdependencies in which simple technical solutions can rarely be sustainable or effective.

For this reason, J. Tinbergen's approach, based on the principles of systemic modeling of economic policy, the criterion of consistency between goals and instruments, empirical verifiability, and the moral dimension of decision-making, proves to be a productive analytical tool for addressing the issue of food security. Tinbergen described policy as system design: to define objectives, identify available instruments, construct a model of interrelations, and ensure feedback mechanisms.

When this logic is applied to food security, it becomes evident that the first step must be a clear articulation of policy objectives in this domain. Food security should be understood not merely as the sufficient availability of food products at the national level but as the guarantee of all population groups' access to adequate, safe, and nutritious food in the long-term perspective. This implies setting several interrelated objectives: the sustainability of domestic production, price affordability for vulnerable groups, resilience of supply chains, ecological stability of agricultural systems, and the capacity to withstand external shocks.

Defining such objectives immediately reveals that they exceed the scope of what can be achieved by one or two instruments alone. This illustrates the main methodological and practical value of Tinbergen's criterion: food security policy requires a diversified set of independent instruments and clear institutional coordination; otherwise, it risks becoming contradictory and ineffective.

THE REVIEW OF THE LITERATURE

The contemporary research on food security and economic policy evolves at the intersection of economic security, global transformation, and institutional adaptation. Studies on the challenges of national economic security in the context of global transformations emphasize the systemic nature of threats, risks, and resilience mechanisms [1; 2; 3]. Scholars underline that food security depends not only on economic capacity but also on institutional adaptability and policy coherence [4; 5].

Recent works stress the importance of flexible governance and differentiated policy instruments capable of addressing asymmetries between production, distribution, and consumption [6; 7]. This view connects directly with the broader debates on sustainable growth and the balance between economic efficiency and social equity [8; 9].

Within the post-war recovery discourse, attention is given to decentralization and the creation of adaptive systems of regional food governance [10; 11]. Research on global development strategies highlights that modernization and catch-up growth models require institutional coordination and cognitive alignment between policy goals and implementation mechanisms [12; 13; 14]. The analytical tradition of economic policy design, established through the systemic model of goal-instrument consistency [15], remains a foundation for modern

interpretations of food governance. However, later cognitive-evolutionary approaches demonstrate that policy effectiveness depends on how beliefs, ideologies, and perceptions shape collective decision-making [16]. Complementarily, the time-inconsistency concept emphasizes the importance of rule-based institutional frameworks to ensure policy stability and long-term commitment [17].

The resilience framework extends this logic toward adaptive governance, where stability arises from diversity and learning [18]. Discussions on globalization and inequality show how economic openness and market asymmetries generate paradoxes of stability and vulnerability [19; 20]. Literature on sustainable development integrates these findings into the broader concept of inclusive and human-centered growth [21-23], emphasizing that true food security exists only where freedom of choice and institutional trust reinforce one another.

Overall, the reviewed studies indicate a shift from technocratic and static governance models toward a cognitive-rational paradigm that combines analytical precision, adaptability, and ethical responsibility. This synthesis provides a conceptual foundation for developing resilient food policy under conditions of global uncertainty.

THE PURPOSE OF THE ARTICLE

In contemporary global political and economic thought, there emerges a pressing need to reconcile two types of rationality: instrumental rationality, which ensures coherence, logic, and measurability of decisions, and communicative rationality, which fosters trust, legitimacy, and cognitive alignment among participants in the policymaking process.

This need becomes particularly evident in the field of food policy, where decisions cannot be reduced to mere technical calculations yet cannot rely solely on political convictions or ideological slogans. The purpose of this article is to explore institutional mechanisms for bridging the gap between science and policy in addressing the challenges of food security.

RESEARCH RESULTS

J. Tinbergen [15] introduced to the scientific community a model of economic policy as the rational design of a system that integrates goals, instruments, and outcomes into a coherent logical structure. He demonstrated that political action can be organized scientifically if certain methodological principles are followed: clearly define objectives, match them with available instruments, build a model of interrelations, evaluate effectiveness, verify empirically, and adjust policy based on feedback. This concept laid the foundation for the analytical approach to policymaking, which became a classic framework for international organizations and national governments alike. At the same time, it contained a moral imperative: policy must serve humanity, combining efficiency with social justice, embodying a form of rational humanism.

In contrast, T. Slembeck [16] draws attention to the other side of the process. He views political decision-making not merely as a logical construct but as a cognitive-communicative process involving not only data and models but also beliefs, expectations, ideological frameworks, and the cognitive limitations of participants. At the center of his theory lies the interaction between the economist-adviser and the policymaker, between knowledge and belief. Slembeck shows that a political decision becomes acceptable not when it is optimal according to the model, but when it attains cognitive legitimacy — when it aligns with the system of beliefs of those responsible for its implementation and support.

Applying Tinbergen's principles to the analysis of food security begins with distinguishing between data, instruments, and objectives. Data include climatic conditions, soil quality, technological capacity of the agricultural sector, demographic structure, and the country's position in global food markets. Instruments comprise fiscal measures, subsidies, customs tariffs, agricultural investment programs, logistical interventions, stock and reserve policies, and targeted support schemes for vulnerable populations. Objectives involve measurable outcomes of production, accessibility, distribution, and ecological sustainability.

A vital component of effective food policy is the differentiation of tax systems and the alignment of fiscal incentives with the goals of sustainable development. Tax policy in the agricultural sector should consider not only the fiscal imperative of revenue generation but also the investment imperative of developing productive capacity, innovation, logistics infrastructure, and food processing. Differentiated tax benefits for producers who adopt environmentally friendly technologies or create rural employment form not only economic incentives but also a socio-ethical framework of welfare policy. Thus, the system of fiscal instruments should be viewed as part of an integrated food security strategy, where taxation and investment interact as complementary institutions of resilience.

When the number of policy goals exceeds the number of truly independent instruments, it becomes impossible for a policy to be effective across all dimensions without prioritization and an adjustment of its instrumental toolkit. In the context of food policy, this means that a state cannot simultaneously pursue maximum domestic self-sufficiency, the lowest possible food prices for consumers, and zero negative environmental impacts if it possesses only one or two operative instruments. The practical outcome of Tinbergen's approach is thus the need to develop an efficiency matrix — to evaluate the influence coefficients of each instrument on each objective, determine time lags and side effects, and, through empirical data, identify combinations that minimize trade-offs.

For example, increasing fertilizer subsidies may quickly boost yields but also accelerate soil degradation and impose fiscal pressure on the budget, thereby limiting social support programs. Hence, the model must account for not only short-term outcomes but also long-term externalities. Time lags are equally important: investments in irrigation systems or crop genetic improvements yield results far later than temporary increases in procurement prices.

If one adopts Tinbergen's metaphor of policy as an evolutionary selection process, then a food crisis

represents a signal of systemic mismatch between existing instruments, established institutions, and environmental conditions. The evolutionary logic implies that the survival of the system depends on its ability to experiment with policy sets, learn from outcomes, and institutionalize successful solutions. In the context of food security, this means that countries should have the capacity to pilot programs, assess their impacts, and scale only those empirically validated as effective. Moreover, successful instruments may vary greatly between countries: one economy may prioritize infrastructure investment and logistics, while another focuses on improving market mechanisms or supporting smallholder networks.

Tinbergen's idea of feedback and the importance of statistics becomes particularly practical here: for a system to evolve toward greater resilience, it requires a well-developed information infrastructure — data on yields, prices, food accessibility, stock levels, soil quality, production costs, and climate losses. Without this, political decisions rely on intuition or political expediency rather than actual effects. Thus, institutional development must include both analytical agencies and data-collection networks, as well as mechanisms of accountability and transparency that make the policy's evolutionary process less chaotic and more governable.

Building upon Tinbergen's efficiency matrix, one can identify a set of instruments that collectively meet the core goals of food security.

The first category of instruments includes investments in productive capacity: modernization of irrigation systems, adoption of sustainable agricultural technologies, development of storage and processing infrastructure, and improved access to financing for small and medium-sized farmers. These instruments increase supply, reduce losses, and enhance shock resistance, though they require long-term implementation and significant capital inputs.

The second category consists of market and price instruments — price signaling systems, adjusted tariff regimes, targeted subsidies, and crop insurance schemes. Tinbergen's key guidance here is to evaluate not only direct effects on production but also side effects on income distribution and farmer incentives. For instance, general food subsidies may temporarily reduce consumer prices but also undermine investment motivation and productivity growth. Therefore, subsidies should be targeted or replaced with development grants and concessional loans.

The third category involves strategic reserves and logistics management systems. Here Tinbergen's emphasis on coordination resonates directly: state reserves must buffer temporary supply shocks, but their storage and deployment must be transparent and economically justified to prevent waste and corruption.

Finally, the fourth category encompasses social access mechanisms — targeted transfers, food vouchers, school meal programs, and nutritional support for vulnerable groups. This reflects Tinbergen's synthesis of efficiency and equity: food policy must not only increase aggregate supply but also ensure that growth reaches those in greatest need.

Combining the approaches of J. Tinbergen and T. Slembeck allows for the formulation of a dual model of food policy: on one hand, policy as the rational design of a system (analytical, formalized, measurable), and on the other, policy as a cognitive-communicative process (interactive, adaptive, based on trust and shared meaning-making). In this model, the advisor and policymaker, the expert and the community, the state and international organizations do not operate as separate levels but as components of a single evolutionary mechanism in which knowledge continuously interacts with belief, and belief is tested against facts.

Applied to food policy, the Tinbergen model defines the rational structure of decision-making, while the Slembeck model provides the mechanism for its socio-cognitive implementation. The first answers the questions "what must be done" and "how to do it most efficiently," while the second addresses "how to persuade society to act coherently" and "how to make policy cognitively legitimate." For instance, reforming a system of food subsidies requires analytical justification (which instruments are more effective and which distort markets), but it also demands communicative support: the government must explain the reform's rationale, reduce cognitive resistance, and build public trust in its outcomes.

J. Tinbergen and T. Slembeck converge in their shared ambition to bridge the gap between knowledge and action. Tinbergen emphasizes the need for models as instruments of thought, while Slembeck views dialogue as a mechanism of understanding. Both argue, implicitly, that rationality cannot be purely technical; it is always embedded within social contexts, belief systems, and expectations. Therefore, true scientific rigor in policy does not mean eliminating values but rather making them explicit and testable.

This leads to the concept of cognitive-rational food security policy — an integrated approach combining analytical rigor with cognitive adaptability. It can be represented as a two-layer model. The first layer is analytical: constructing Tinbergen's matrix of goals and instruments, defining elasticities, assessing time lags, and balancing production, distribution, and ecological sustainability. The second layer is cognitive-communicative: fostering trust, creating cognitive maps for participants, organizing consultations, simulations, and information campaigns that help the public understand the complexity of the problem and accept its multidimensional nature.

The integration of these approaches has a clear practical dimension. Modern food crises often escalate not due to a shortage of resources but because of a deficit of cognitive coordination. Countries that implement rational policies without accounting for citizens' political beliefs and fears face protests and reform blockages, while those relying solely on rhetoric without models fall into inefficiency. The synthesis of Tinbergen's analytical logic and Slembeck's communicative reasoning helps avoid both extremes.

The key concept here is trust as a function of rationality. For Tinbergen, trust emerges as a result of consistent and predictable policy: when decisions are coherent, society believes in them. For Slembeck, trust is a communicative phenomenon — an outcome of mutual recognition and cognitive transparency. In food policy, these two dimensions merge: trust arises when

governments not only act logically but also explain the logic of their actions, when data are made public, and when the decision-making process becomes participatory.

CONCLUSIONS

We have substantiated the concept of cognitive-rational management of food risks, which assumes that every political action — from subsidies to import regulation — should be accompanied not only by an analytical assessment of its effects but also by a program of cognitive adaptation: explanation, stakeholder participation, and open discussion. In such a system, the expert acts not as a technical executor but as a facilitator of understanding, while the policymaker functions not merely as a decision-maker but as a communicator of social meaning. This represents the essence of T. Slembeck's ideas transposed into Tinbergen's framework of systemic thinking.

From a global perspective, the integration of Tinbergen and Slembeck's approaches opens the way for a new form of international governance of food security. Tinbergen's logic calls for the establishment of institutions to coordinate policies, whereas Slembeck's vision emphasizes mechanisms of cognitive cooperation, where countries not only align data but also form shared understandings of common goals. Here emerges the concept of global cognitive policy, in which international organizations act not as bureaucratic administrators but as centers of collective reasoning, helping nations synchronize beliefs, interpretations, and risk assessments.

In the context of global food security, misjudging time lags in policy implementation can lead to irregular cycles of overproduction and shortage, as well as political errors — for example, pre-election incentives aimed at immediate production growth that later generate crisis effects. Tinbergen's idea of feedback loops in policy systems becomes crucial here: establishing mechanisms for monitoring, interim evaluation, and adaptive correction is essential for keeping food policy aligned with real-world dynamics.

The synthesis of Tinbergen's structural rationalism and Slembeck's cognitive evolutionism offers a new horizon for understanding food policy. In a world where food systems face interconnected crises — climatic, energy-related, demographic, and geopolitical — it is not enough to possess accurate models of production, prices, or reserves. Equally vital is ensuring cognitive coherence among all participants in the process: governments, producers, consumers, international organizations, and academic communities. Without such alignment, even the most rational policy will remain purely declarative.

Thus, the combination of Tinbergen's and Slembeck's ideas is not eclectic but methodologically organic. Both thinkers sought ways to reconcile the rationality of science with the complexity of human action. Their integration enables the creation of a new framework for food policy — cognitive-rational humanism — in which decisions are data-driven but implemented through trust; planning is based on models yet coordinated through dialogue; and effectiveness is measured not only by numerical indicators but also by the level of social acceptance and moral maturity of society.

Fiscal and investment policy in the context of food security thereby acquire new meaning. They cease to be merely technical tools for resource redistribution and instead become components of cognitive-rational resilience. Differentiated tax systems, investment incentives for sustainable agriculture, and international tax agreements aimed at reducing food inequality are not merely economic measures but moral imperatives of global governance. In this sense, taxation and investment mechanisms become the key instruments for realizing cognitive-rational humanism in food policy.

Particular attention should be given to the interdependence between fiscal imperatives, investment dynamics, and the mitigation of global hunger. An effective tax system must ensure not only fiscal stability but also serve as a selective incentive mechanism for investments in food value chains — particularly in processing, innovative agroproduction, and sustainable logistics. Differentiated tax rates and targeted benefits for enterprises that enhance food accessibility provide a strategic linkage between social policy and development policy. Meanwhile, investment activity should evolve into an institutional mechanism of resilience — through financing agricultural infrastructure, supporting innovation in food technologies, and creating local markets that reduce import dependency. In this interaction among taxation, investment, and social programs arises the model of resilient food policy, where economic efficiency becomes a means of achieving humanitarian objectives.

An essential dimension of today's food paradox lies in the speculative nature of global capital. Financial flows, instead of supporting the real agricultural sector, are often concentrated in speculative instruments — grain futures, commodity derivative funds, and short-term investment products. This transforms food resources into financial assets, distancing them from their primary purpose of satisfying human needs. During periods of market volatility, speculative transactions can artificially inflate food prices, creating the illusion of scarcity even amid physical surplus. This results in a new form of food vulnerability — financial vulnerability, where security depends not on harvests but on market expectations. Overcoming this phenomenon requires integrating fiscal mechanisms to limit speculative profits with investment policies directing capital into real, long-term projects that strengthen the resilience of food systems.

The food futures market deserves particular scrutiny. Originally designed as a risk-hedging tool, it has gradually evolved into an autonomous sphere of financial speculation. Contracts for grains, oils, sugar, or coffee are increasingly traded not for hedging by producers but as assets of investment arbitrage. This disconnects exchange prices from real production costs and distorts the system of signals for farmers, exporters, and consumers. Instead of reducing uncertainty, futures markets often generate volatility, amplifying price fluctuations and deepening food vulnerability. Regulating these markets thus requires a new paradigm — one that combines financial discipline, contractual transparency, and fiscal accountability of participants. Only under these conditions can futures markets reclaim their original role as stabilizing instruments within the global food security system rather than sources of crisis propagation.

The problem of hunger on a global scale reflects not merely a shortage of food but a structural inefficiency of fiscal and investment systems. In most developing countries, tax policy remains focused primarily on the fiscal imperative of budget replenishment rather than on developing the productive capacities of the agricultural sector. Conversely, in developed economies, excessive financial concentration and speculative investment activity in food markets generate a deep imbalance between capital and real production. This asymmetry reproduces the paradox of hunger amid abundance, where resources accumulate not where they are needed, but where profitability is higher.

Overcoming this structural divide requires a systemic differentiation of tax mechanisms and a reorientation of investment policy toward food security objectives. A crucial task lies in aligning fiscal and investment imperatives with the principles of social justice, ecological responsibility, and cognitive-rational trust, which together form the foundation of resilient development within the global food system.

In this sense, food security becomes not only a technical challenge but a test of humanity's ability to unite reason and faith, science and communication, efficiency and justice. It is precisely this synthesis — where Tinbergen's logic meets Slembeck's evolutionary humanism — that offers a pathway to designing a food policy capable not only of feeding the world but also of making it wiser and more compassionate.

Література:

1. Булатова О. В., Захарова О. В., Карпенко О. І., Федоров Е. В. Економічна безпека країн в умовах сучасних глобальних трансформацій: виклики, загрози, ризики / за заг. ред. д.е.н., проф. О. В. Булатової. Київ: МДУ, 2024. 290 с.

2. Булатова О. В., Федоров Е. В. Виклики, загрози та ризики формування національної економічної безпеки: глобальний та національний рівень. Вісник Маріупольського державного університету. Серія: Економіка. 2022. Вип. 23. С. 52-65. https://doi.org/10.34079/2226-2822-2022-12-23-52-65.

3. Булатова О., Панченко В., Іващенко О. Мегатренди міжнародного економічного розвитку і виклики економічній безпеці: потенціал управління політикою стійкості та протидії ризикам. Modeling the development of the economic systems. 2023. № 2. С. 215—222. https://doi.org/10.31891/mdes/2023-8-29.

4. Дугінець Г., Яценко О., Панченко В. Міжнародний досвід повоєнного відновлення: тригери соціально-економічного розвитку в умовах децентралізації. Вісник Хмельницького національного університету. Економічні науки. 2024. № 328 (2). С. 497—505. https://doi.org/10.31891/2307-5740-2024-328-74.

5. Лук'яненко Д.Г. Стратегії економічного розвитку в умовах глобалізації: монографія. К.: КНЕУ, 2001. 538 с.

6. Панченко В., Птащенко О. В., Резнікова Н. В., Карп В. С. Міжнародні стратегії зменшення економічних, соціальних і технологічних розривів між країнами: історичні паралелі адаптації моделей стрибкоподібного і наздоганяючого розвитку. 2025. Агросвіт. № 7 (квітень). С. 4—15. https://doi.org/10.32702/2306-6792.2025.7.4

7. Панченко В., Птащенко О., Резнікова Н., Карп В. (2025). Стрибкоподібний і наздоганяючий розвиток як імператив модернізації та структурної трансформації азійських країн: історичні аспекти реалізації політики стимулювання експорту. Агросвіт, 6, 17-29. https://doi.org/10.32702/2306-6792.2025.6.17

8. Панченко В., Резнікова Н. Міжнародні стратегії економічного розвитку: навчальний посібник. Київ: АграрМедіа, 2025. 471 с.

9. Панченко В., Резнікова Н., Іващенко О. Стратегічний форсайт як інструмент протидії сучасним глобальним викликам економічній безпеці і нерівності: досвід ЄС для України у сприянні стійкості та сталості. Вісник Хмельницького національного університету. Серія: економічні науки. 2023. № 4 (320). С. 31—39. https://doi.org/10.31891/2307-5740-2023-320-4-5

10. Панченко В.Г., Резнікова Н.В., Іващенко О.А. Форсайт як інструмент відповідального державного управління і стратегування міжнародної економічної політики в умовах загострення глобальних проблем розвитку. Вісник Хмельницького національного університету. Серія: Економічні науки. 2024. № 326 (1). С. 350—358. https://doi.org/10.31891/2307-5740-2024-326-55

11. Птащенко О. В., Кириленко О. П., Курцев О. Ю. Вплив цифрових трансформацій на розвиток сучасного економічного простору: людський капітал, інклюзія, безпека. Бізнес Інформ. 2024. № 7. С. 180-190. URL: https://www.businessinform.net/article/?year=2024&abstract=2024_7_0_180_190

12. Резнікова Н. В., Іващенко О. А. Перспективи формування нових центрів економічного зростання в умовах нової норми світової економіки як прояв неозалежності. Інвестиції: практика та досвід. 2017. № 11. С. 5—9.

13. Резнікова Н., Панченко В. Репортажі із цивілізаційних фронтів. На передовій міжнародної економічної політики. К.: Аграр Медіа Груп, 2023. 234 с.

14. Яценко О., Дугінець Г., Панченко В. Євроінтеграційні імперативи повоєнного відновлення України на засадах сталості: у пошуках джерел фінансування. Вісник Хмельницького національного університету. Економічні науки. 2024. № 334 (5). С. 616—623. https://doi.org/10.31891/2307-5740-2024-334-93.

15. Tinbergen J. On the Theory of Economic Policy. Amsterdam: North-Holland, 1952.

16. Slembeck T. The Formation of Economic Policy: Cognitive-Evolutionary Perspectives. Journal of Socio-Economics. 2003. Vol. 31. P. 243—256.

17. Kydland F. E., Prescott E. C. Rules Rather than Discretion: The Inconsistency of Optimal Plans. Journal of Political Economy. 1977. Vol. 85 (3). P. 473—491. http://www.jstor.org/stable/1830193

18. Walker B., Holling C. S., Carpenter S. R., Kinzig A. Resilience, Adaptability and Transformability in Social-Ecological Systems. Ecology and Society. 2004. Vol. 9(2). Article 5.

19. Rodrik D. The Globalization Paradox: Democracy and the Future of the World Economy. New York: W.W. Norton, 2011.

20. Stiglitz J. E. The Price of Inequality: How Today's Divided Society Endangers Our Future. New York: W.W. Norton, 2012.

21. Sachs J. D. The Age of Sustainable Development. New York: Columbia University Press, 2015.

22. Acemoglu D., Robinson J. A. Why Nations Fail: The Origins of Power, Prosperity, and Poverty. New York: Crown Publishers, 2012.

23. Sen A. Development as Freedom. Oxford: Oxford University Press, 1999

References:

1. Bulatova, O. V., Zakharova, O. V., Karpenko, O. I. and Fedorov, E. V. (2024), Ekonomichna bezpeka krain v umovakh suchasnykh hlobalnykh transformatsii: vyklyky, zahrozy, ryzyky [Economic Security of Nations amid Contemporary Global Transformations: Challenges, Threats, and Risks], MDU, Kyiv, Ukraine.

2. Bulatova, O. V. and Fedorov, E. V. (2022), "Challenges, threats and risks of shaping national economic security: global and national level", Visnyk Mariupols'koho derzhavnoho universytetu. Seriya: Ekonomika, vol. 23, pp. 52—65, https://doi.org/10.34079/2226-2822-2022-12-23-52-65

3. Bulatova, O., Panchenko, V. and Ivashchenko, O. (2023), "Megatrends of international economic development and challenges to economic security: the potential of resilience and risk management policy", Modeling the Development of the Economic Systems, vol. 2, pp. 215—222, https://doi.org/10.31891/mdes/2023-8-29

4. Duhynets, H., Yatsenko, O. and Panchenko, V. (2024), "International experience of post-war recovery: triggers of socio-economic development in the context of decentralization", Visnyk Khmelnytskoho natsionalnoho universytetu. Ekonomichni nauky, vol. 328 (2), pp. 497—505, https://doi.org/10.31891/2307-5740-2024-328-74

5. Lukianenko, D. H. (2001), Stratehii ekonomichnoho rozvytku v umovakh hlobalizatsii [Strategies of Economic Development under Globalization], KNEU, Kyiv, Ukraine.

6. Panchenko, V., Ptashchenko, O. V., Reznikova, N. V. and Karp, V. S. (2025), "International strategies to reduce economic, social and technological gaps between countries: historical parallels of leapfrog and catching-up development models", Ahrosvit, vol. 7, pp. 4—15, https://doi.org/10.32702/2306-6792.2025.7.4

7. Panchenko, V., Ptashchenko, O., Reznikova, N. and Karp, V. (2025), "Leapfrog and catching-up development as an imperative of modernization and structural transformation in Asian countries: historical aspects of export promotion policy", Ahrosvit, vol. 6, pp. 17—29, https://doi.org/10.32702/2306-6792.2025.6.17

8. Panchenko, V. and Reznikova, N. (2025), Mizhnarodni stratehii ekonomichnoho rozvytku: navchalnyi posibnyk [International Strategies of Economic Development: A Textbook], AhrarMedia, Kyiv, Ukraine.

9. Panchenko, V., Reznikova, N. and Ivashchenko, O. (2023), "Strategic foresight as a tool to counter current global challenges to economic security and inequality: EU experience for Ukraine in fostering resilience and sustainability", Visnyk Khmelnytskoho natsionalnoho universytetu. Seriya: Ekonomichni nauky, vol. 4 (320), pp. 31—39, https://doi.org/10.31891/2307-5740-2023-320-4-5

10. Panchenko, V. H., Reznikova, N. V. and Ivashchenko, O. A. (2024), "Foresight as a tool of responsible public governance and strategic planning of international economic policy under escalating global development problems", Visnyk Khmelnytskoho natsionalnoho universytetu. Seriya: Ekonomichni nauky, vol. 326 (1), pp. 350—358, https://doi.org/10.31891/2307-5740-2024-326-55

11. Ptashchenko, O. V., Kyrylenko, O. P. and Kurtsev, O. Yu. (2024), "The impact of digital transformations on the development of the modern economic space: human capital, inclusion, security", Business Inform, vol. 7, pp. 180-190, available at: https://www.businessinform.net/article/?year=2024&abstract=2024_7_0_180_190 (Accessed 22 July 2025)

12. Reznikova, N. V. and Ivashchenko, O. A. (2017), "Prospects for the emergence of new centers of economic growth under the 'new normal' of the global economy as a manifestation of neo-dependence", Investytsii: praktyka ta dosvid, vol. 11, pp. 5—9

13. Reznikova, N. and Panchenko, V. (2023), Reportazhi iz tsyvilizatsiinykh frontiv. Na peredovii mizhnarodnoi ekonomichnoi polityky [Reports from the Frontlines of Civilization: At the Forefront of International Economic Policy], Ahrar Media Hrup, Kyiv, Ukraine.

14. Yatsenko, O., Duhynets, H. and Panchenko, V. (2024), "European integration imperatives of Ukraine's post-war recovery on the basis of sustainability: in search of financing sources", Visnyk Khmelnytskoho natsionalnoho universytetu. Ekonomichni nauky, vol. 334 (5), pp. 616—623, https://doi.org/10.31891/2307-5740-2024-334-93

15. Tinbergen, J. (1952), On the Theory of Economic Policy, North-Holland, Amsterdam.

16. Slembeck, T. (2003), "Ideologies, beliefs, and economic advice: A cognitive-evolutionary view on economic policy-making", The Evolutionary Analysis of Economic Policy, Edward Elgar Publishing, Cheltenham, UK & Northampton, MA, pp. 128—159.

17. Kydland, F. E. and Prescott, E. C. (1977), "Rules Rather than Discretion: The Inconsistency of Optimal Plans", Journal of Political Economy, vol. 85 (3), pp. 473—491, available at: http://www.jstor.org/stable/1830193

18. Walker, B., Holling, C. S., Carpenter, S. R. and Kinzig, A. (2004), "Resilience, adaptability and transformability in social-ecological systems", Ecology and Society, vol. 9 (2), art. 5.

19. Rodrik, D. (2011), The Globalization Paradox: Democracy and the Future of the World Economy, W.W. Norton, New York, USA.

20. Stiglitz, J. E. (2012), The Price of Inequality: How Today's Divided Society Endangers Our Future, W.W. Norton, New York, USA.

21. Sachs, J. D. (2015), The Age of Sustainable Development, Columbia University Press, New York, USA.

22. Acemoglu, D. and Robinson, J. A. (2012), Why Nations Fail: The Origins of Power, Prosperity, and Poverty, Crown Publishers, New York, USA.

23. Sen, A. (1999), Development as Freedom, Oxford University Press, Oxford, UK.

Стаття надійшла до редакції 29.10.2025 р.