Innovation as the Basis of Ukraine’s Economic Stability

Avanesova N Doctor of Economics,

Professor of the Department of Management

and Public Administration,
O. M. Beketov National University of Urban Economy in Kharkiv

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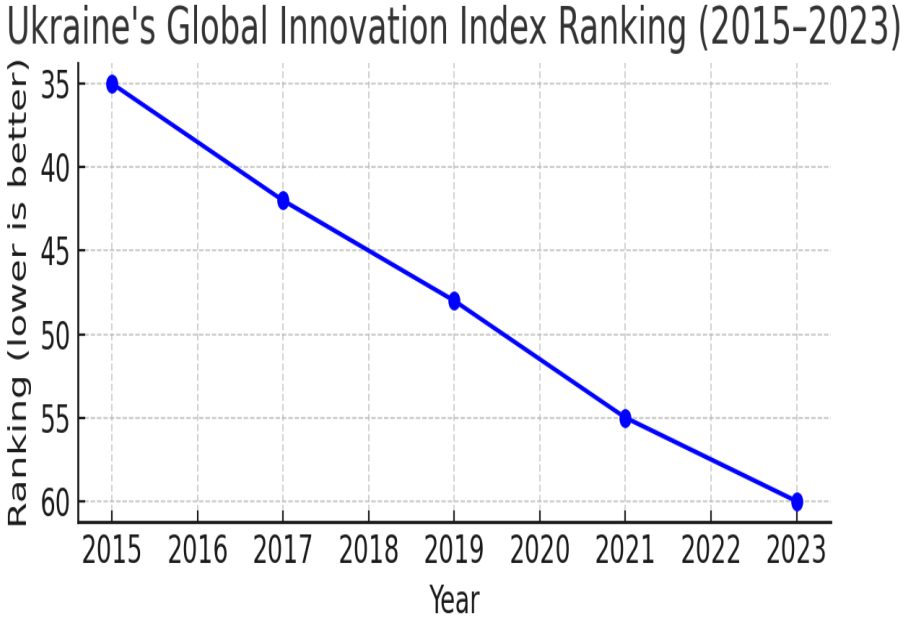
Relevance of Innovation for Ukraine’s Stability



📊 **Ukraine’s Global Innovation Index Ranking (2015–2023)**

Ukraine has slipped from **35th place in 2015** to **60th in 2023**.

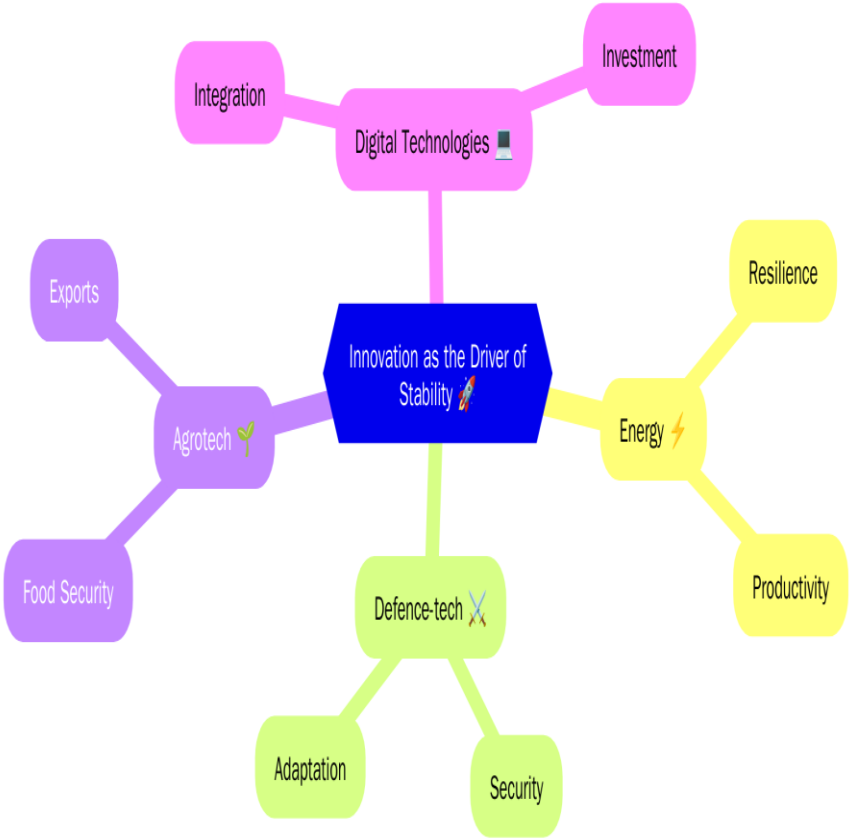
The decline illustrates how war, economic shocks, and underfunding slowed innovation growth.

This negative trend underscores the urgency of reforms, investment, and global partnerships.

👉 Argument:
Innovation is not just relevant, but **vital for Ukraine’s stability**, because without reversing this downward trend,

the country risks losing competitiveness and resilience in global markets.

Relevance of the Topic



Relevance of the Topic

Ukraine faces profound economic shocks caused by war, infrastructure destruction, and global crises.

Innovation is the **key driver of recovery**, creating new competitive advantages, raising productivity, and stimulating investment.

Innovative solutions in **energy, agrotech, defence-tech, and digital technologies** ensure resilience under uncertainty.

Therefore, innovation policy is **strategically vital** for Ukraine's long-term economic stability and integration into global value chains.

Purpose and Research Objectives

Purpose of the Study

To justify the role of innovative development as the **foundation of Ukraine's economic stability**.

To identify priority directions of **innovation policy** during wartime and post-war recovery.

Research Objectives

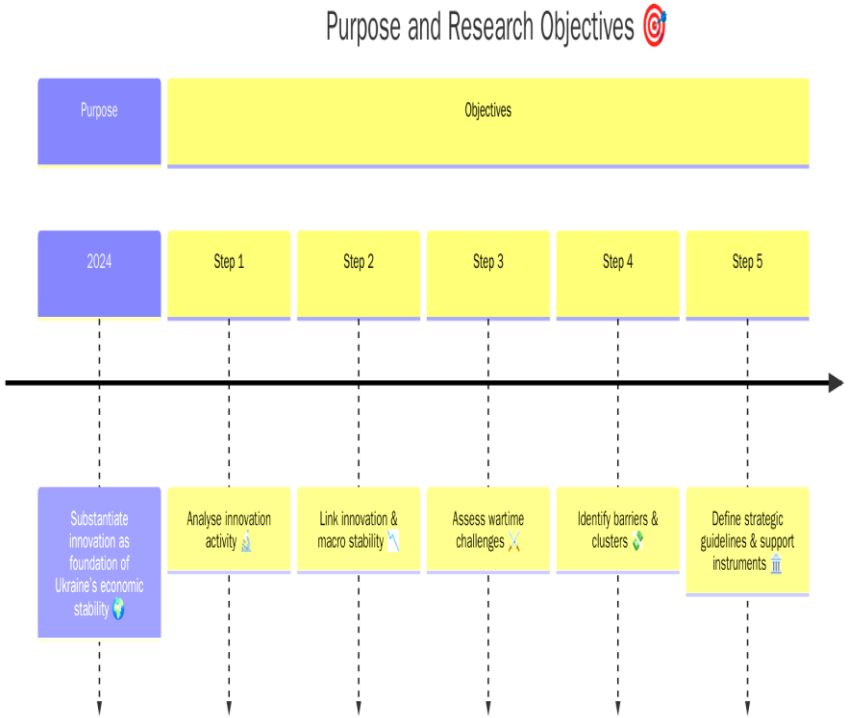
Analyse the current state of innovation activity in Ukraine.

Determine the relationship between innovation and macroeconomic stability.

Examine the impact of wartime challenges on innovation potential.

Identify barriers to investment and cluster development.

Define strategic guidelines and instruments of state & private support.



Ukraine’s Innovation Ecosystem

- 📊 **Explanation:**
- **IT/Digital Services (8/10)** – The strongest and most dynamic sector, with Ukraine exporting $7+ billion annually in IT services.
- **Defence-tech (7/10)** – Rapid growth due to wartime demand; includes drones, electronics, and dual-use technologies.
- **Agrotech (6/10)** – Ukraine’s strong agricultural base supports innovative farming and bio-foodtech solutions.
- **Energy (5/10)** – Innovations in renewable energy and decentralisation are developing but still face infrastructure challenges.
- **Startup Ecosystem (7/10)** – Expanding quickly with 2,600+ active startups supported by USF, Google Fund, and Horizon Europe.
- **Global Partnerships (6/10)** – Growing ties with EU programmes, but still limited by wartime risks and financing gaps.
- 👉 **Argument:** This radar chart shows that Ukraine’s innovation ecosystem is **strongest in IT and defence-tech**, while **energy and global partnerships** require more policy support and investment to reach full potential.

Barriers and Risks

Ukraine's innovation potential faces **several critical barriers and risks** that slow down systemic transformation and global competitiveness:

Security & Uncertainty ⚠ – Ongoing war increases project risks, disrupts logistics, and makes long-term investment unpredictable.

Investment Constraints 💸 – Civilian innovation lacks access to capital, as most external financing flows into defence.

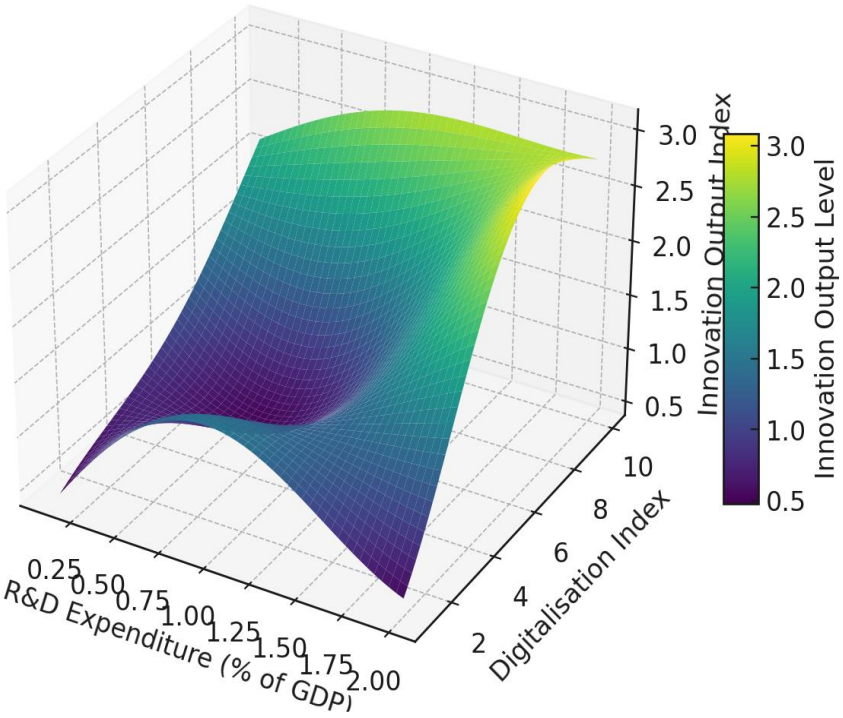
Brain Drain 🧠 – Skilled talent is leaving the country, reducing the "critical mass" of innovators.

Infrastructure Degradation 🏭 – Many R&D facilities and industrial bases have been damaged or destroyed.

Fragmented Market 📉 – Small internal demand limits scaling and commercialization of innovations.

Category	Barrier / Risk	Impact on Innovation
Security & Uncertainty ⚠	War, logistics disruption, high insurance costs	Projects delayed, FDI reduced
Investment 💸	Lack of long-term civilian capital	Startups struggle to scale
Brain Drain 🧠	Skilled professionals emigrating	Loss of innovation talent
Infrastructure 🏭	Destruction of R&D and production facilities	Reduced capacity for R&D
Market 📉	Fragmented domestic demand	Weak commercialization potential

Innovation Efficiency Surface

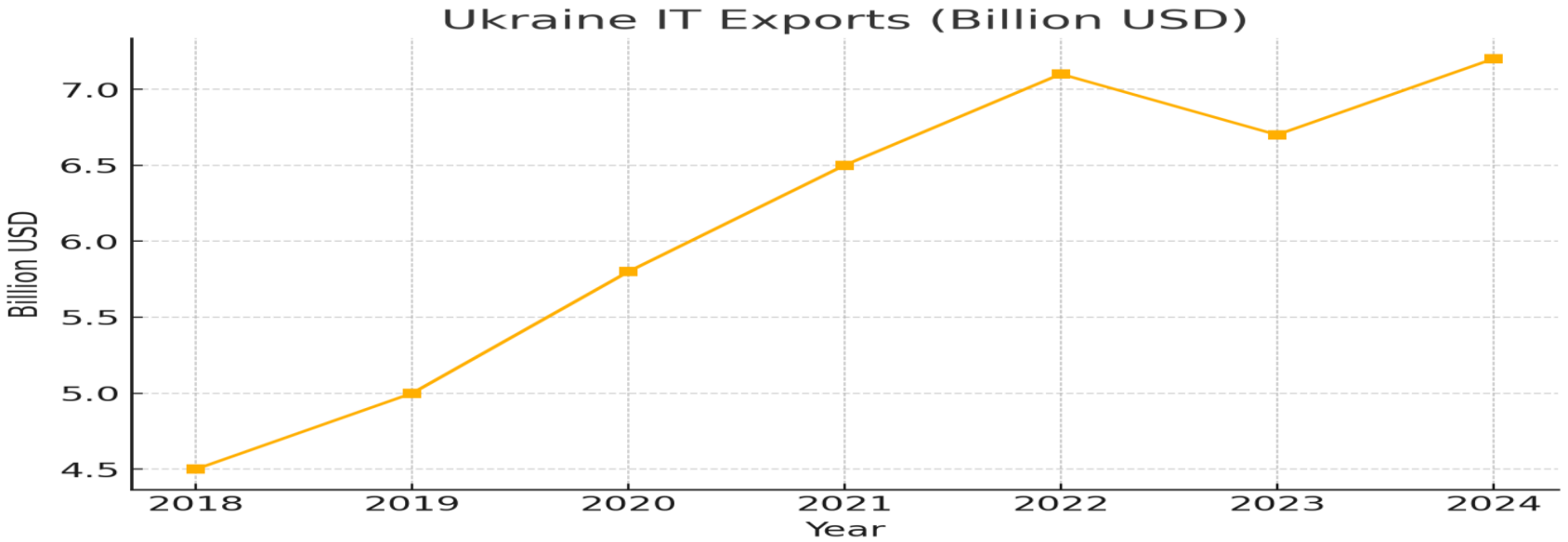


This 3D surface illustrates how **R&D funding** and **digitalisation** jointly shape innovation outcomes.

At **low R&D & digitalisation**, innovation efficiency is weak.

As **investment grows and digitalisation strengthens**, the innovation output increases sharply.

This highlights the **synergistic effect** of financial and technological factors on Ukraine's innovative development.

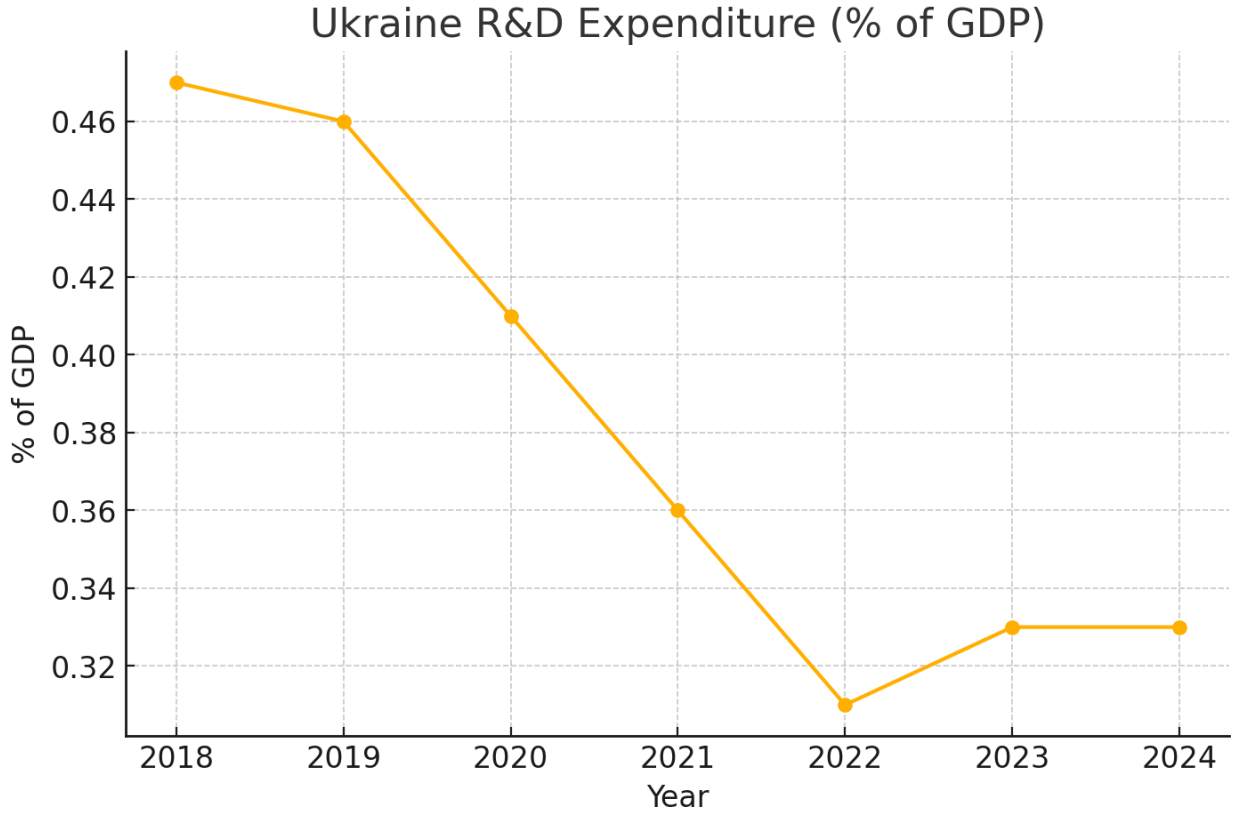


2 Ukraine IT Exports (Billion USD)

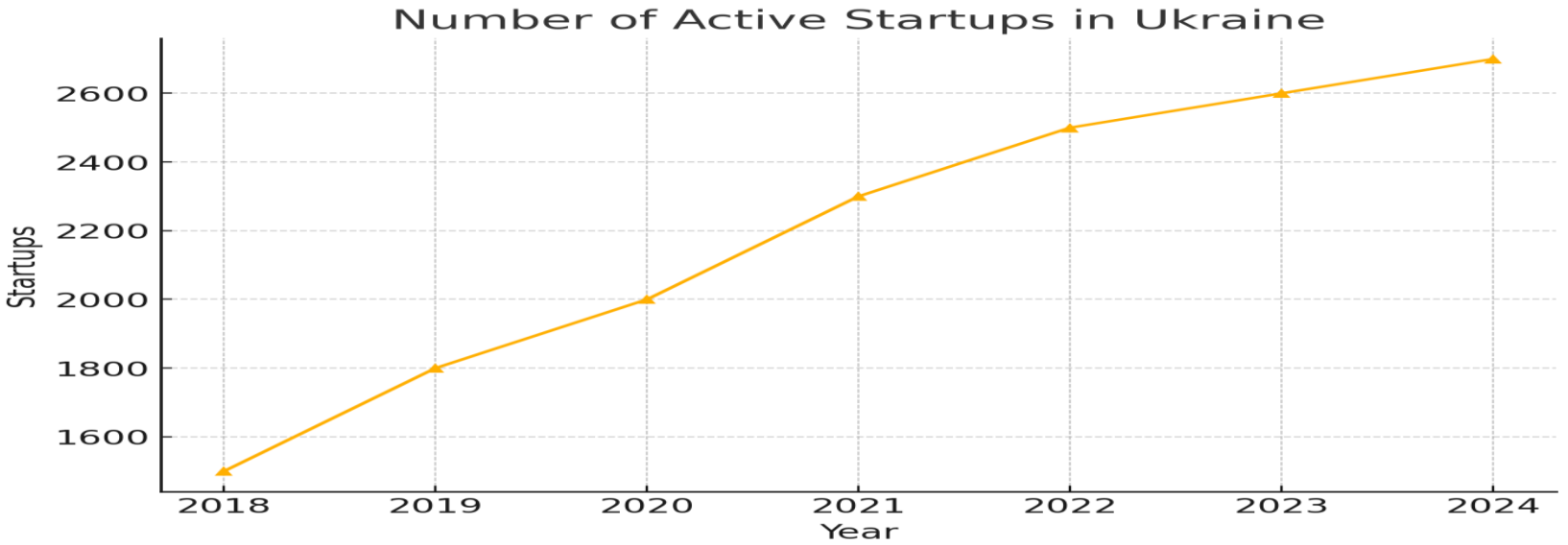
Explanation:

Despite war-related challenges, Ukraine's IT export sector has grown from $4.5 billion in 2018 to over $7 billion in 2024. IT services now account for ~41% of all Ukrainian service exports. This sector demonstrates remarkable resilience and global competitiveness, supported by the Diia. City regime and Ukraine's strong talent pool.

👉 **Argument:** IT is Ukraine's innovation showcase to the world, proving that targeted policies and private initiative can generate hard currency revenues even in times of crisis.



Explanation:
Ukraine's R&D expenditure has steadily declined from 0.47% of GDP in 2018 to around 0.33% in 2023–2024. This reflects the long-term underfunding of science and technology, which has been exacerbated by the war. In comparison, the EU average is over 2% of GDP, showing the investment gap Ukraine must overcome.



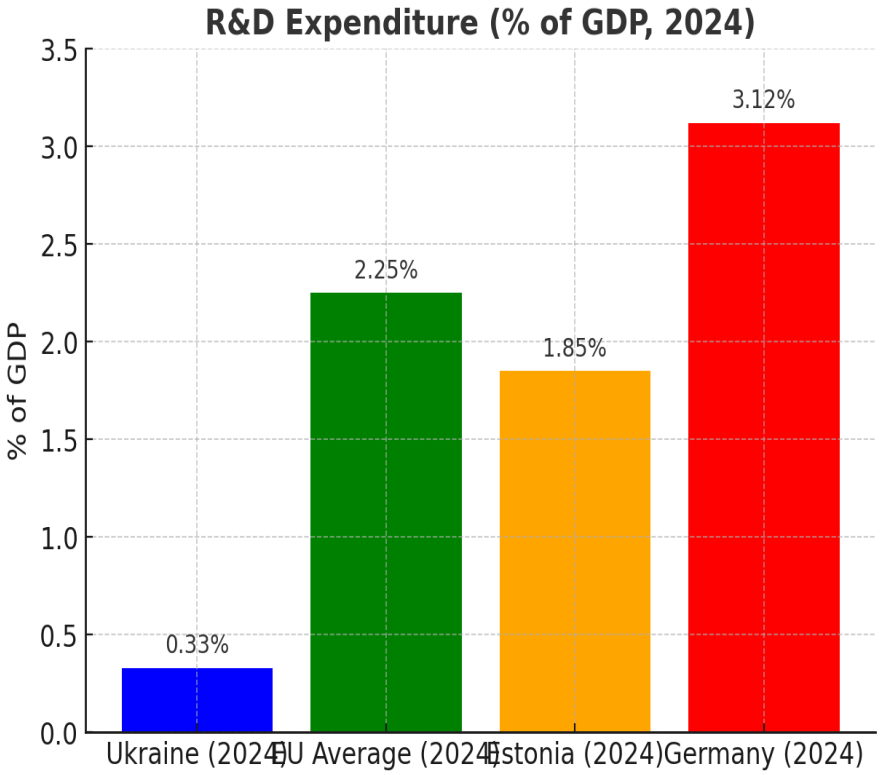
Explanation:
Ukraine’s startup ecosystem expanded from around 1,500 startups in 2018 to nearly 2,700 in 2024.
Growth accelerated after 2020 thanks to the Ukrainian Startup Fund,
international programmes, and private venture initiatives. Defence-tech, agritech, and digital services are key growth niches.
👉 **Argument:** The rapid expansion of startups illustrates Ukraine’s strong entrepreneurial spirit.
With improved access to financing
and risk insurance, the ecosystem could scale even faster and integrate into global value chains.

SWOT Analysis: Ukraine's Innovation System

Strengths	Weaknesses ⚠
Strong IT sector Defence-tech growth Startup & grant funds (USF, Google, Horizon Europe)	Brain drain of talent Infrastructure damage Low R&D expenditure (0.33% GDP)
**Opportunities **	**Threats **
EU integration & Horizon Europe Cluster development (energy, agrotech) Talent circulation programmes	Wartime uncertainty High cost of capital Fragmented domestic market

Ukraine’s innovation system shows the **“high innovation tension paradox”**: strong growth points exist (IT, defence-tech, grant programmes), but systemic impact is limited by weak R&D funding, infrastructure damage, and brain drain. Policy must prioritise **civilian innovation financing, talent return, and scaling clusters with export potential**.

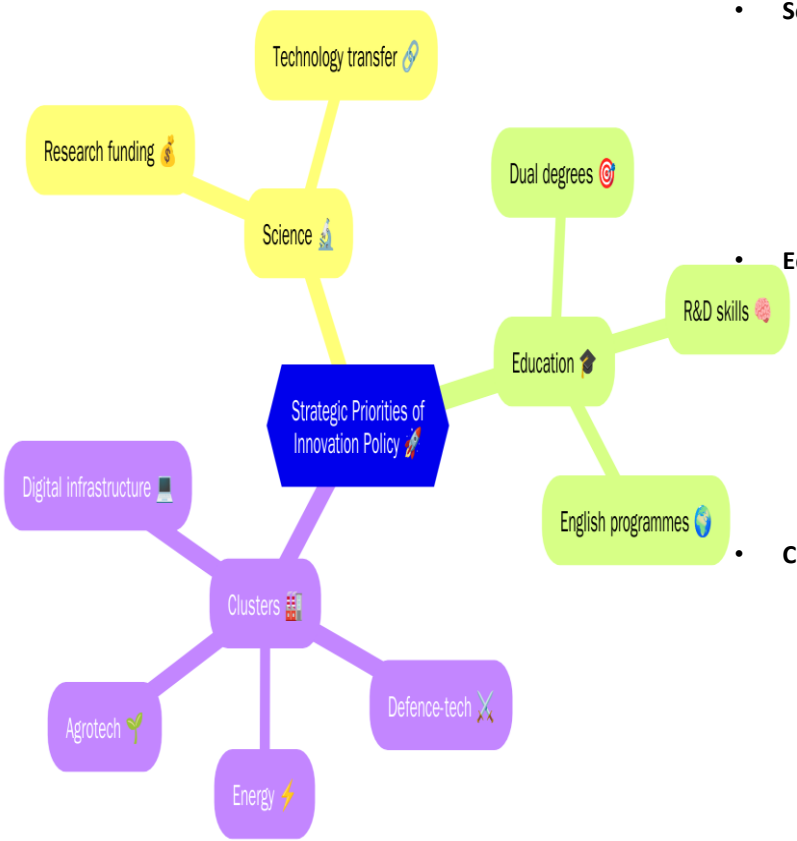
EU Experience and Lessons



- **Ukraine (0.33%)** – innovation spending remains very low, limiting systemic development.
- **EU average (2.25%)** – strong investment ensures competitiveness and resilience.
- **Estonia (1.85%)** – shows how digitalisation + steady R&D funding transform small economies.
- **Germany (3.12%)** – one of Europe's innovation leaders, investing heavily in science and technology.

👉 **Lesson:** Ukraine needs to raise R&D funding at least **3–5× in the short term**, aligning with EU benchmarks to achieve recovery, resilience, and long-term competitiveness.

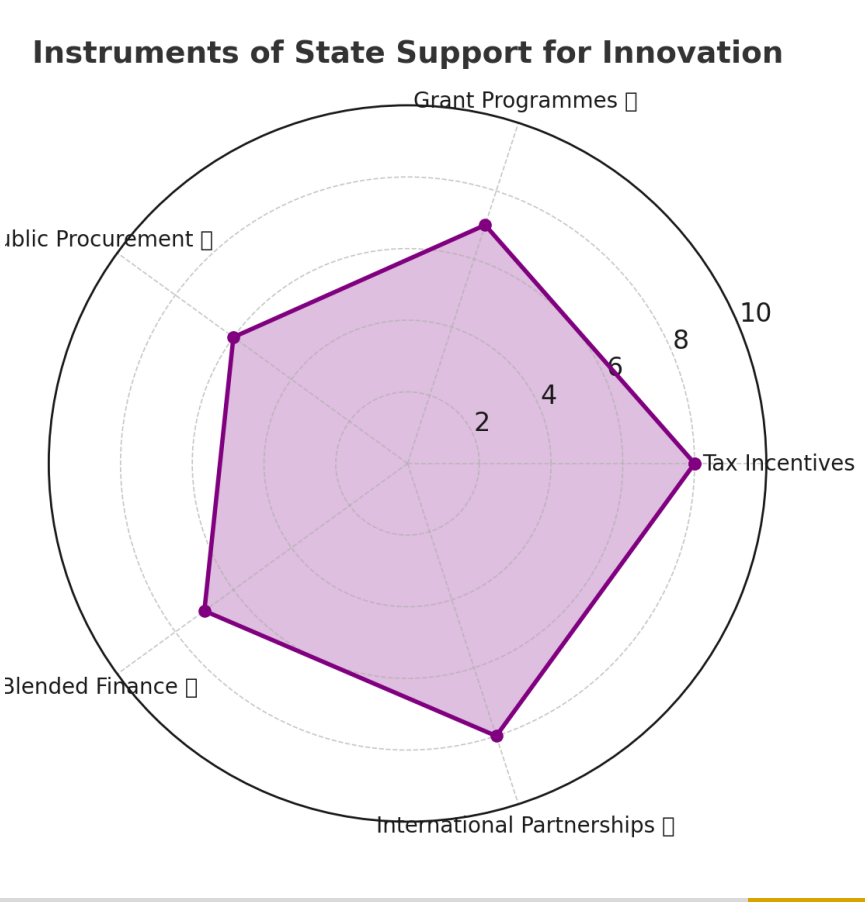
Strategic Priorities of Innovation Policy

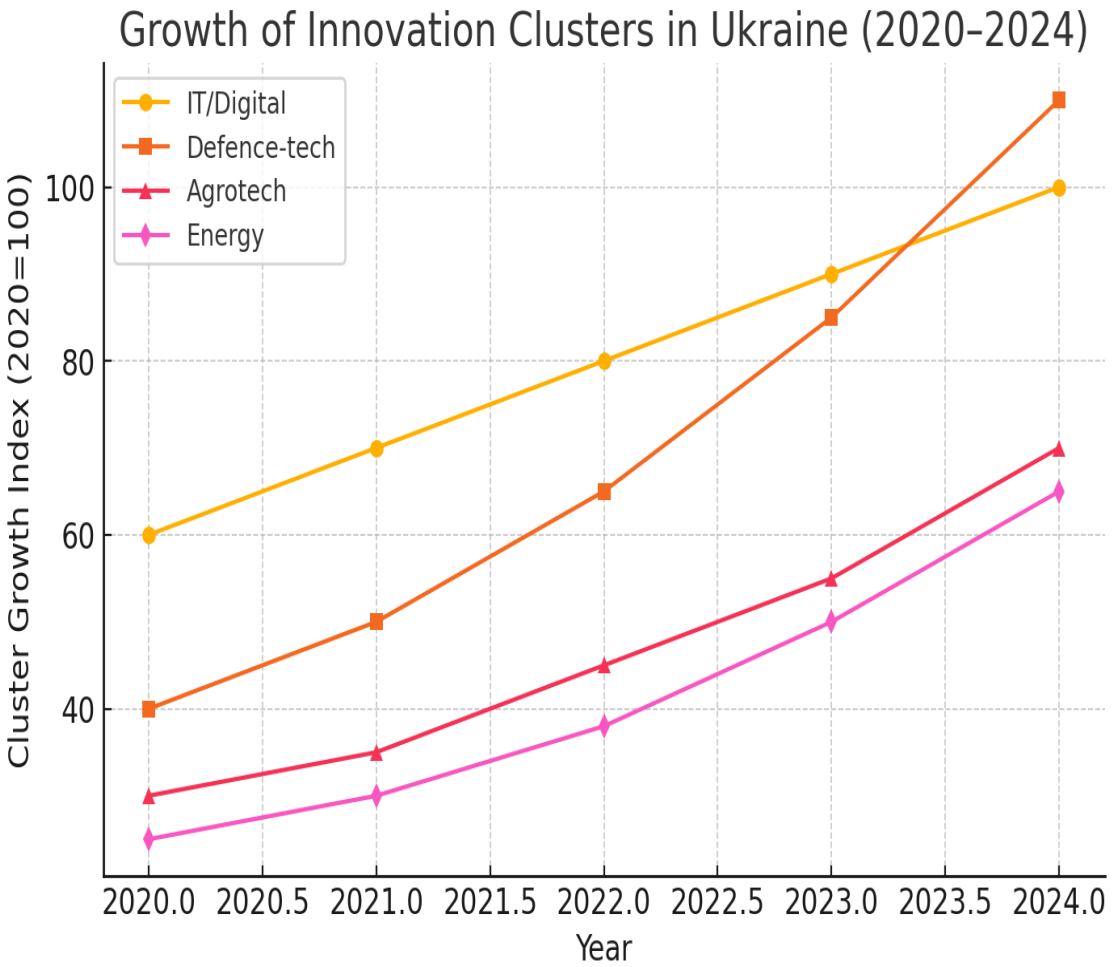


- **Science**
  - *Research funding*: Ukraine needs long-term and stable funding for research institutions, universities, and innovation centres to ensure sustainable knowledge creation.
  - *Technology transfer*: Bridging the gap between science and industry through Technology Transfer Offices (TTOs), patent pools, and collaboration platforms accelerates commercialization of research.
- **Education**
  - *R&D skills*: Building strong research and innovation skills is key to creating a competitive workforce able to adapt to global technological challenges.
  - *Dual degrees*: Partnerships with foreign universities and joint programmes expand opportunities for Ukrainian students and integrate them into the global academic ecosystem.
  - *English programmes*: English-based courses open Ukrainian students and researchers to international networks, grants, and collaborations.
- **Clusters**
  - *Defence-tech*: Development of military and dual-use technologies strengthens national security and creates a competitive export sector.
  - *Energy*: Innovations in renewable and decentralized energy systems reduce dependence on imports and increase resilience.
  - *Agrotech*: Smart farming and bio-foodtech can ensure food security and export competitiveness.
  - *Digital infrastructure*: Expansion of digital services and e-governance enables Ukraine to become a hub for IT and fintech solutions.

Instruments of State Support

- **Key Instruments of State Support for Innovation in Ukraine:**
- **Tax Incentives** 💰 – R&D tax credits, accelerated depreciation of research equipment, “patent box” regime for income from IP.
- **Grant Programmes** 🎯 – micro-grants for proof-of-concept, larger matching grants for prototyping and scaling.
- **Public Procurement** 🏛️ – outcome-oriented procurement and pre-commercial procurement (PCP) to stimulate demand.
- **Blended Finance** 🔗 – state guarantees, co-investment funds, risk insurance for private and foreign investors.
- **International Partnerships** 🌍 – Horizon Europe, EU/US consortia, co-financing with development banks.
- 👉 **Argument:** State support instruments reduce risks, attract private capital, and accelerate commercialization of technologies.





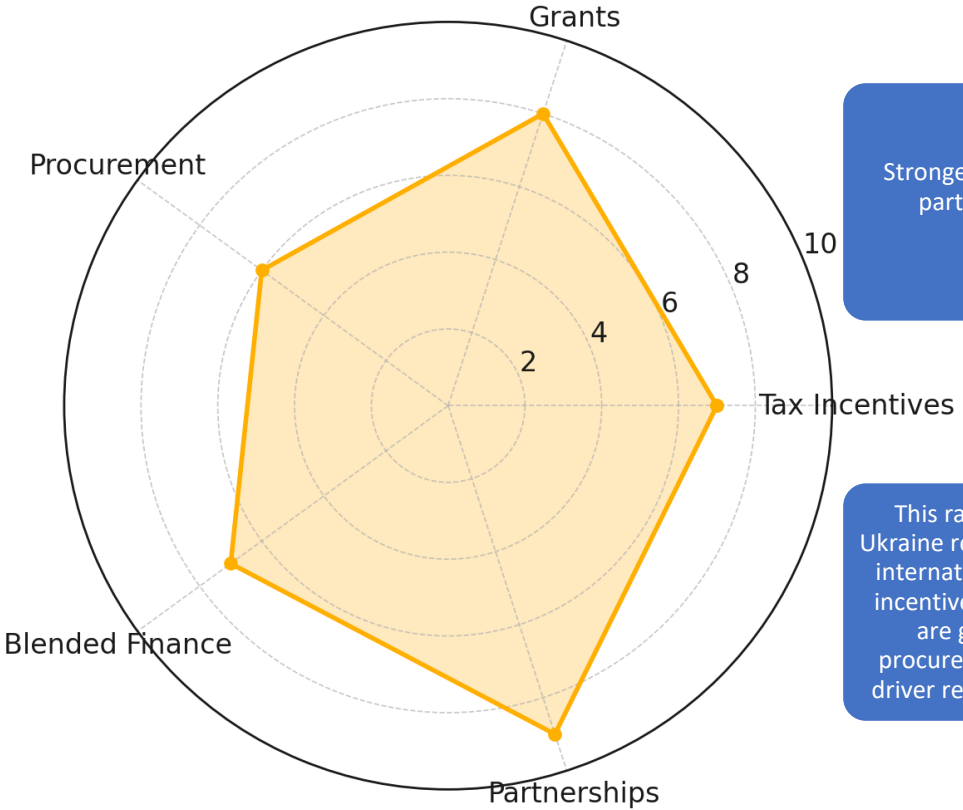
IT/Digital services remain the strongest and most stable growth driver.

Defence-tech has shown the fastest growth, accelerated by wartime needs.

Agrotech and Energy are developing steadily and hold strong potential for post-war recovery.

“Ukraine’s innovation clusters have developed unevenly. IT and defence-tech are the most dynamic, while agrotech and energy are catching up. This demonstrates Ukraine’s adaptability and the potential for cluster-based recovery.”

Impact of State Support Instruments



Strongest tools: international partnerships and grant programmes.

Moderate support: tax incentives and blended finance instruments.

Weakest point: public procurement as a driver of innovation.

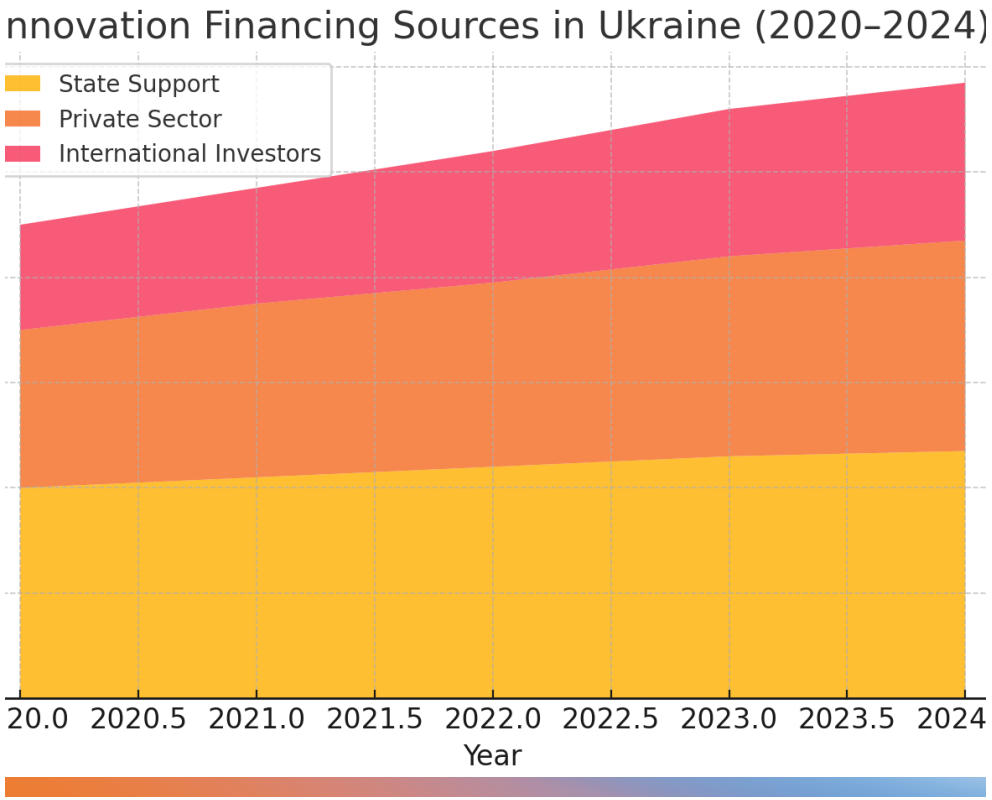
This radar chart shows that Ukraine relies most on grants and international partnerships. Tax incentives and blended finance are growing, but public procurement as an innovation driver remains underdeveloped

State support remains the backbone of innovation financing.

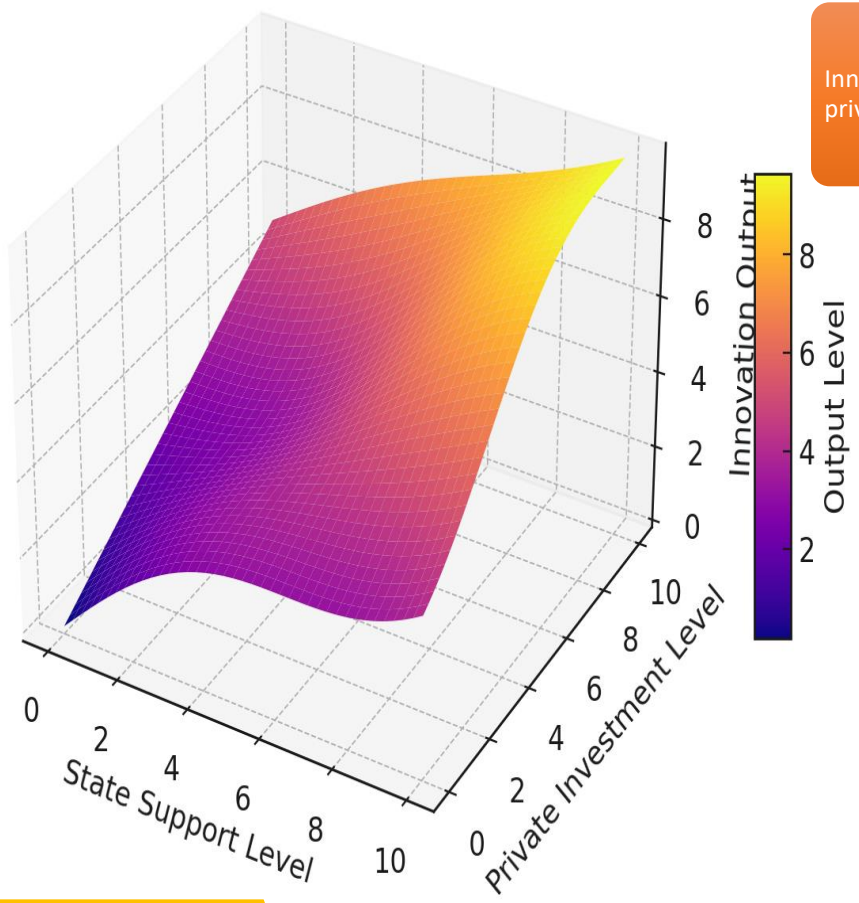
Private sector contribution has been steadily increasing.

International investors are playing a growing role in Ukraine’s ecosystem.

State financing dominates innovation, but the private sector’s role is rising. International investors are also becoming more active, showing trust in Ukraine’s innovation potential despite wartime risks



Innovation Synergy: State Support & Private Investment

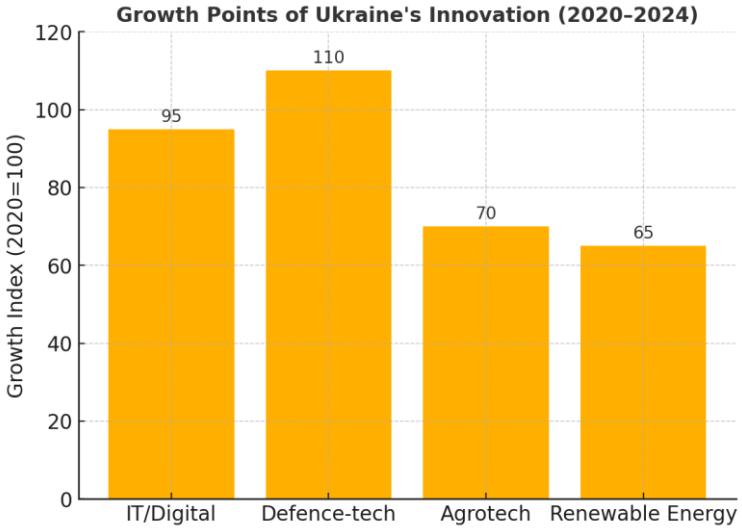


Innovation output rises when both state and private support are strong.

Neither public support nor private investment alone is enough.

The greatest results come from synergy and cooperation.

“This 3D surface illustrates that innovation grows fastest when both the state and private investors work together. Synergy creates the strongest effect, showing that balanced cooperation is essential for Ukraine’s innovation future.”



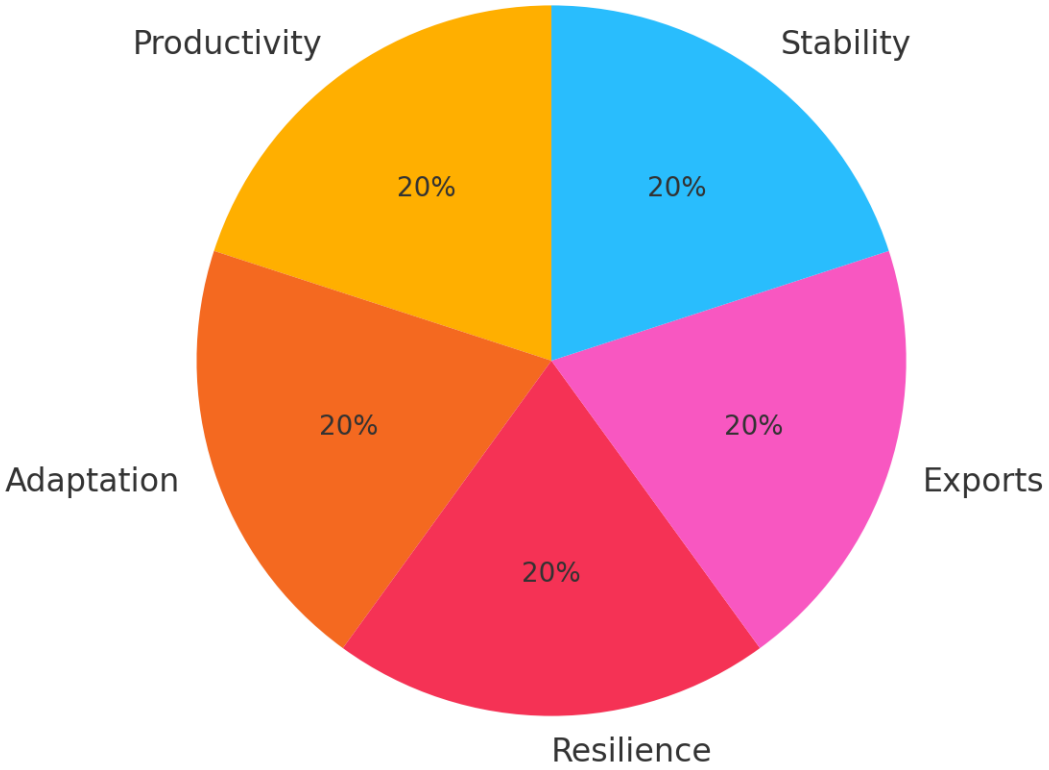
Innovation is a decisive factor of Ukraine’s long-term stability.

Growth points: IT, defence-tech, agrotech, renewable energy.

Institutional support: Diia.City, grant programmes, Horizon Europe.

Despite wartime shocks, these sectors remain the foundation for recovery and integration into global value chains.

Roles of Innovation in Economic Stability

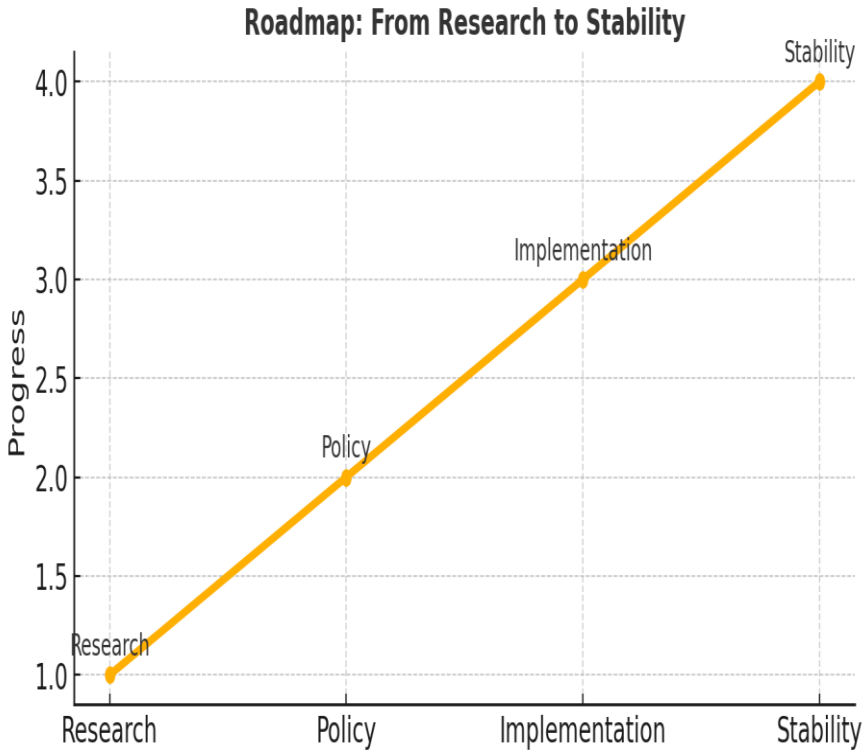


Innovation boosts productivity and supports crisis adaptation.

Strengthens financial resilience and reduces dependence on critical imports.

Creates new export-oriented industries.

Foreign investment and international scientific consortia enhance macroeconomic stability.



Research priorities: quantitative models of innovation impact, brain circulation, effectiveness of blended finance.

Practical steps: expand R&D tax incentives, scale innovation procurement, accelerate industrial parks with open-access labs.

Goal: ensure Ukraine’s long-term economic, financial, and social stability.

Thank You