

Artificial Intelligence in the Western Balkans: Labour, Demographic Change and the Path to EU Integration

Dr. Bernd Christoph Ströhm

The Vienna Institute for International Economic Studies (wiiw) /

European Centre for International Economic Policy (ECIPE)

AI in the Western Balkans: Labour, Power and Geopolitics

- **Labour:** Who benefits from AI, whose jobs are at risk, and will it create better jobs or deepen economic inequality?
- **Influence:** Who shapes the region's AI development — governments, the EU, US technology firms, China, or international institutions?
- **Geopolitics:** Is the Western Balkans becoming an AI-dependent market, a technology-services hub, or a strategic arena for competing external powers?



What does AI do to labour?

- ***A. Jobs under the greatest pressure***

- Call centres and basic customer support.
- Data entry, transcription and routine administration.
- Basic translation, content production and bookkeeping.
- Entry-level software coding and testing.

These jobs involve tasks that generative AI can increasingly perform or accelerate. The risk is particularly relevant to **business**-process outsourcing and lower-cost digital services. **It does not mean every job in these occupations will disappear.**

- ***B. Jobs likely to be transformed***

- Software developers and IT support specialists.
- Lawyers, accountants and financial analysts.
- Marketing, design and communications professionals.
- Engineers, researchers and university staff.

AI can take over routine tasks while increasing the output expected from each employee. **Workers who know how to use AI effectively may become more productive, but employers may also need fewer people for the same volume of work.**

- ***C. New opportunities***

- AI engineers, data scientists and machine-learning specialists.
- Cybersecurity and cloud-computing professionals.
- AI implementation, auditing and governance specialists.
- Local-language AI, digital public services and sector-specific software.

These opportunities depend on investment in education, infrastructure and business innovation. **They are unlikely to replace all displaced jobs automatically.**

The current picture: where does the region stand?

~5.4% Businesses using AI

The OECD reported an average of 5.4% of businesses using AI across the Western Balkans over 2020–2023. Adoption is uneven, and these figures are a historical baseline rather than a measure of adoption in 2026.



150,000 ICT workers

The regional ICT sector employs approximately 150,000 people and generates export revenues from software, IT outsourcing and digital services.

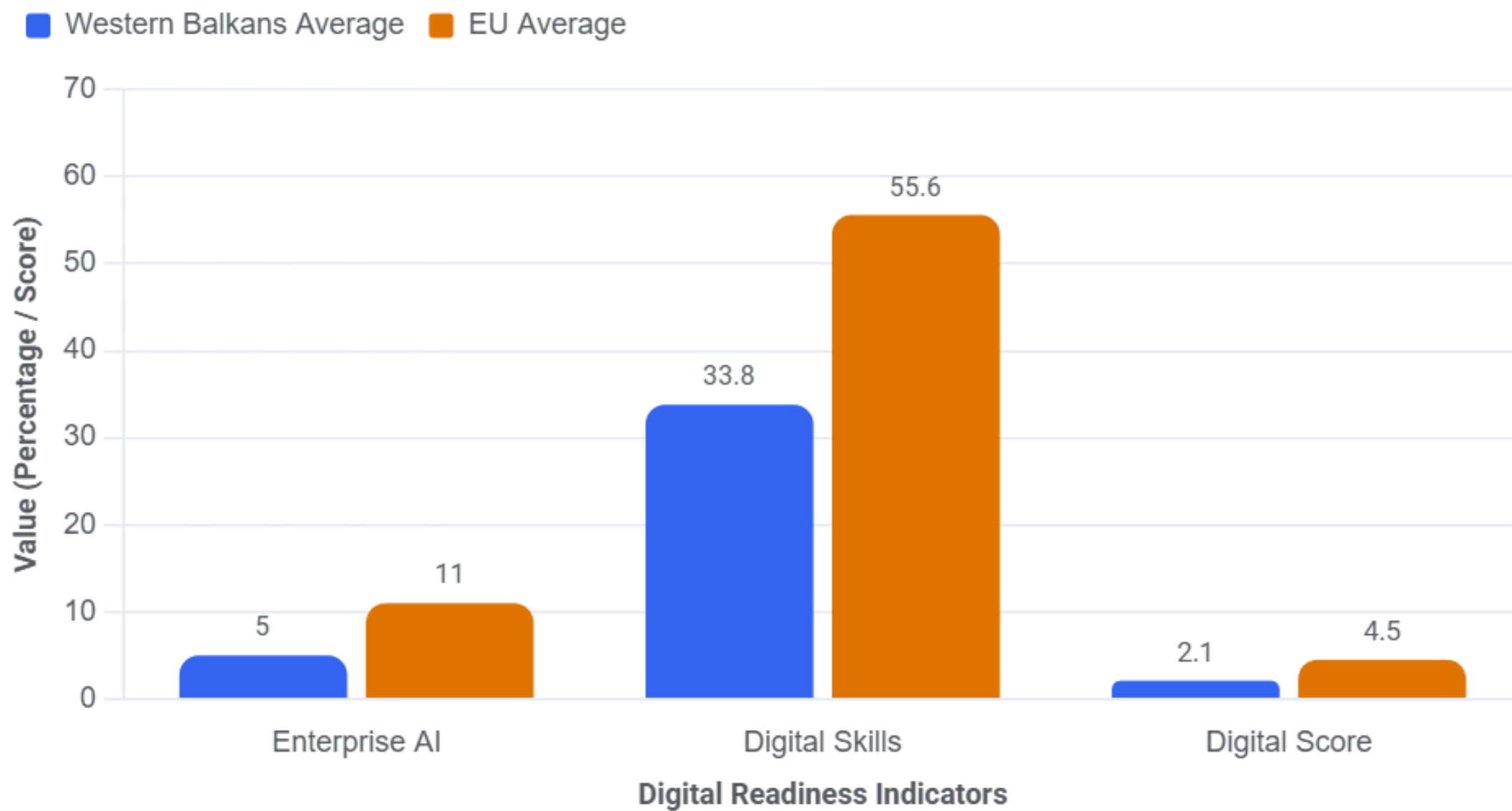
AI could upgrade this sector, but also automate some of its existing work.



EU AI access hubs

The EU is investing in AI infrastructure access

Serbia and North Macedonia were selected for AI Factories Antennas, connecting their AI communities to European high-performance computing resources.



Main actors in the Western Balkans

<u>Actor</u>	<u>Main channel of influence</u>
EU	Funding, research programmes, market access, AI computing and regulatory alignment
China	Huawei, telecoms, cloud-related infrastructure, industrial partnerships
US	AI chips, cloud platforms, software and commercial AI models
Domestic actors	Universities, start-ups, governments and local ICT companies

China and the Western Balkans



China's “geoeconomic” interests in the Western Balkans

- geo-strategic position as a bridgehead to EU markets
- key investor into the region's industry, energy and communications/IT sectors
- access to the region via the Greek port of Piraeus



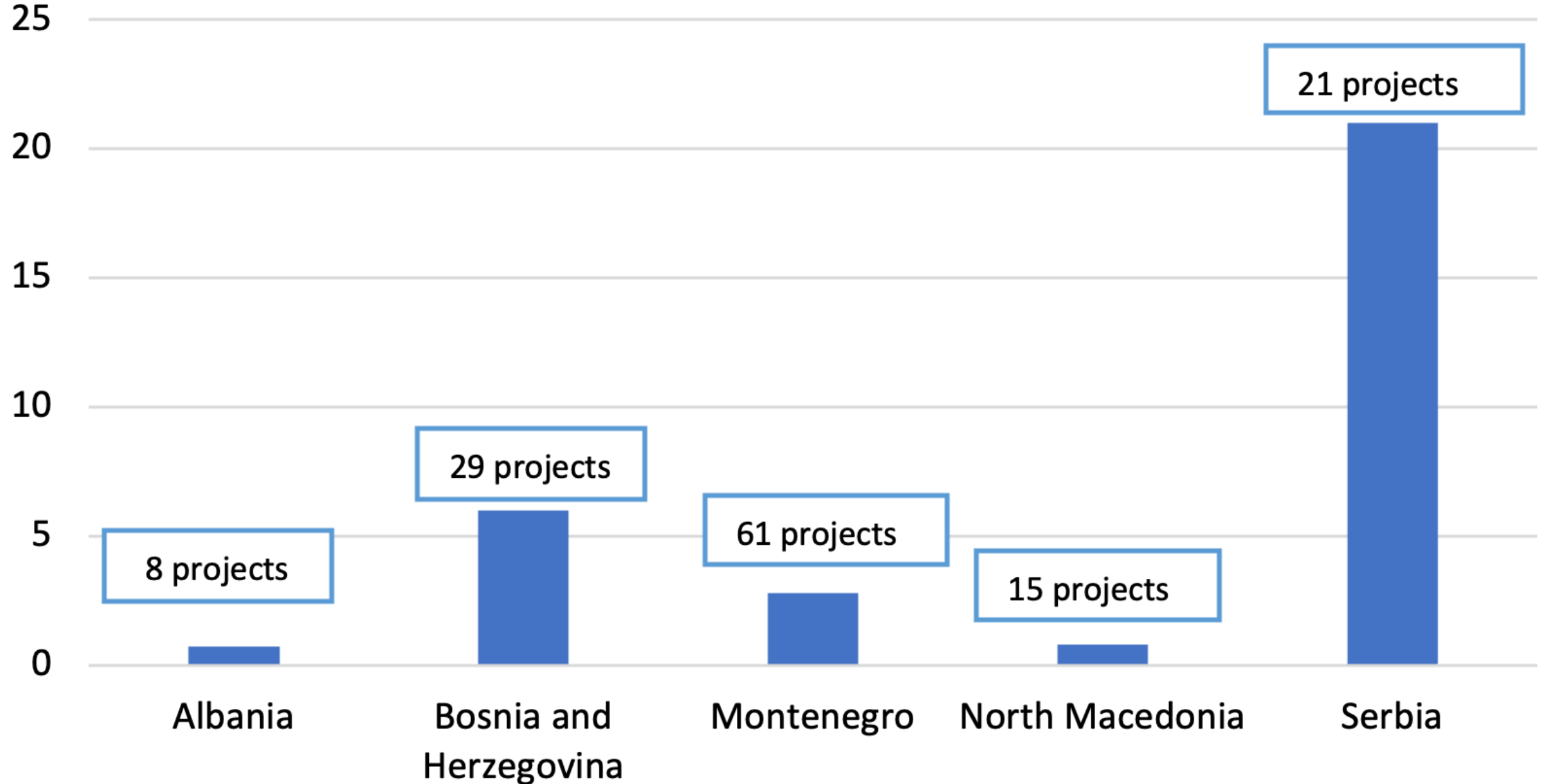
China's “14+1” initiative

Map of the China–Europe Land–Sea Express Route¹⁶



Chinese Projects in the Western Balkans

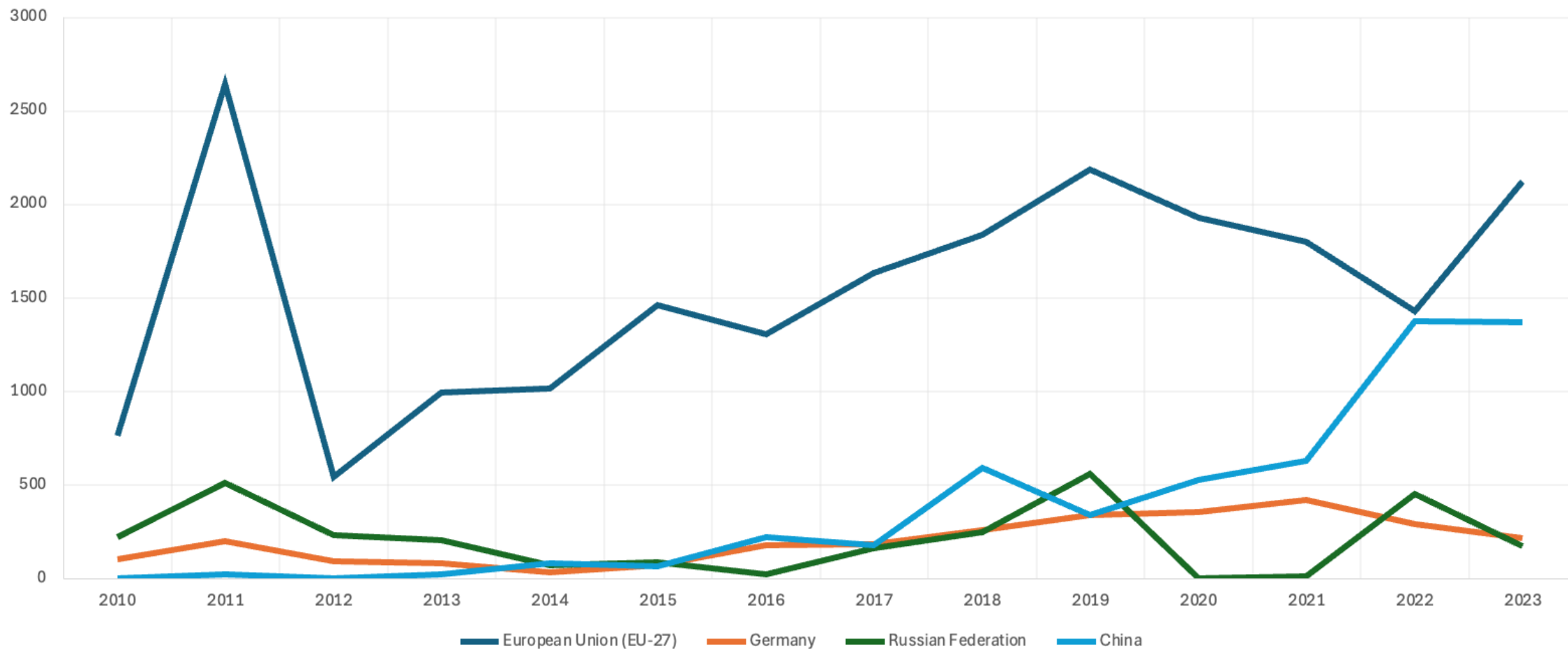
US dollars billions





China's relationship
with Serbia

FOREIGN DIRECT INVESTMENTS IN SERBIA BY SELECTED REGIONS/COUNTRIES, IN MIO EUROS, NET FLOWS, 2010-2023.

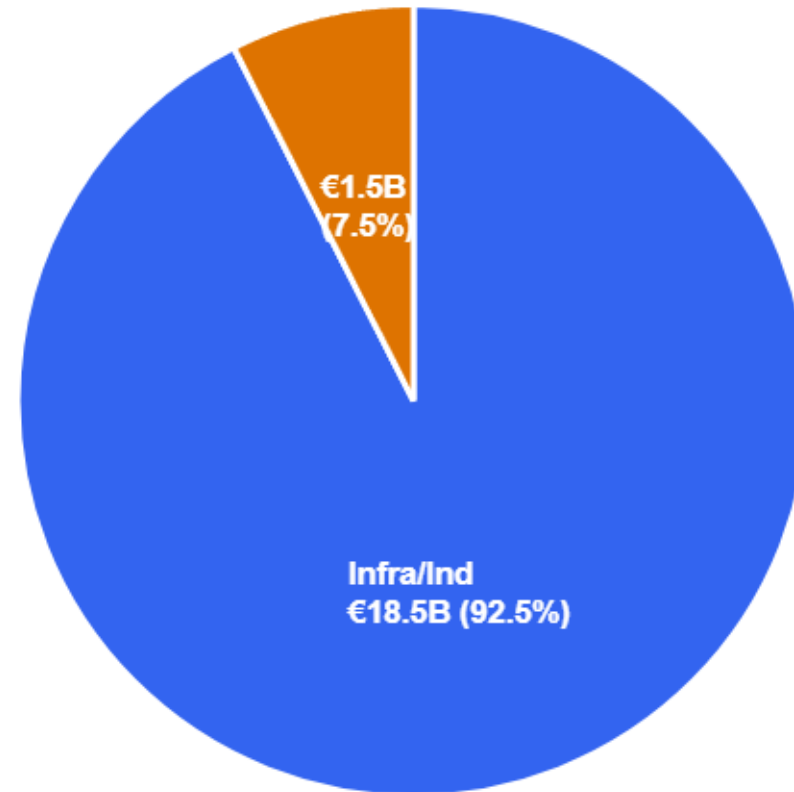




Is China dominating the region's AI sector?



- China's involvement is real, **particularly in Serbia**.
- It would be **misleading to suggest that China dominates the region's AI sector**.
- **The EU remains much more important as an overall investment and economic partner.**
- **Chinese investment was heavily concentrated in Serbia** and was much smaller than EU investment across the region.



Digital Silk Road (DSR)

China's Share of Telecommunications Equipment Imports into the Western Balkans

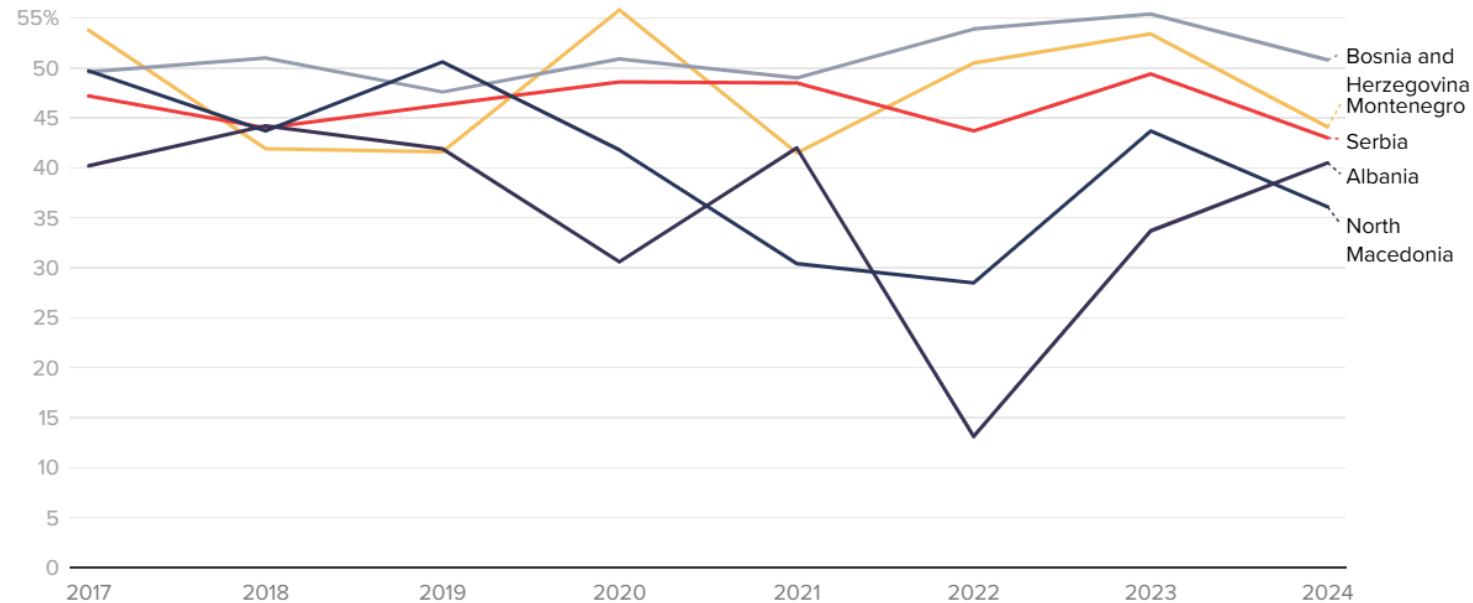


Chart: Jack Galloway/Center for European Policy Analysis (CEPA) • Source: Data constructed by Ekaterina Kurbangaleeva based on CEPII. "BACI."

- China is expanding its **Digital Silk Road (DSR)** across the Western Balkans, positioning Beijing as a dominant supplier of telecommunications equipment, surveillance systems, and cloud infrastructure
- **Telecom Dominance:** From 2017 to 2024, China accounted for an average of **45% of telecommunications equipment imports** across the Western Balkans (ranging from ~51% in Bosnia and Herzegovina to ~36% in Albania), far outpacing other suppliers
- **Smart & Safe Cities:** Huawei, Hikvision, and Dahua have deployed extensive facial recognition, urban surveillance, and "Safe City" camera networks in Serbia (expanding across Belgrade, Novi Sad, and Niš) and parts of Bosnia and Herzegovina
- **Cloud & Education Infrastructure:** Chinese tech is integrated into local data centers, broadband networks, and digital education platforms in Serbia, North Macedonia, and Bosnia

Three forms of Chinese involvement

- **1. AI-enabling infrastructure**

Huawei has supplied cloud infrastructure and supported an AI platform associated with **Serbia's state data centre in Kragujevac**. Chinese technology suppliers also have a wider presence in telecommunications and smart-city systems.

- **2. Bilateral AI and technology cooperation**

In May 2026, Serbia and China signed a memorandum of understanding to **advance cooperation in AI**, alongside agreements on technological development and innovation..

- **3. Industrial technology and automation**

Chinese investment in manufacturing, metals, automotive supply chains and industrial infrastructure creates another route for AI-related technology to enter the region — for example, through **robotics, predictive maintenance and automated production**.

However, investment in a factory is not necessarily an AI investment. Each project needs to be examined individually.



The demographic pressures behind AI adoption

Working-age population is projected to decline by **20%** by 2050



Potential worker shortfall of **190,000** people over the next five years



Native population abroad reached **23.6%** in 2024



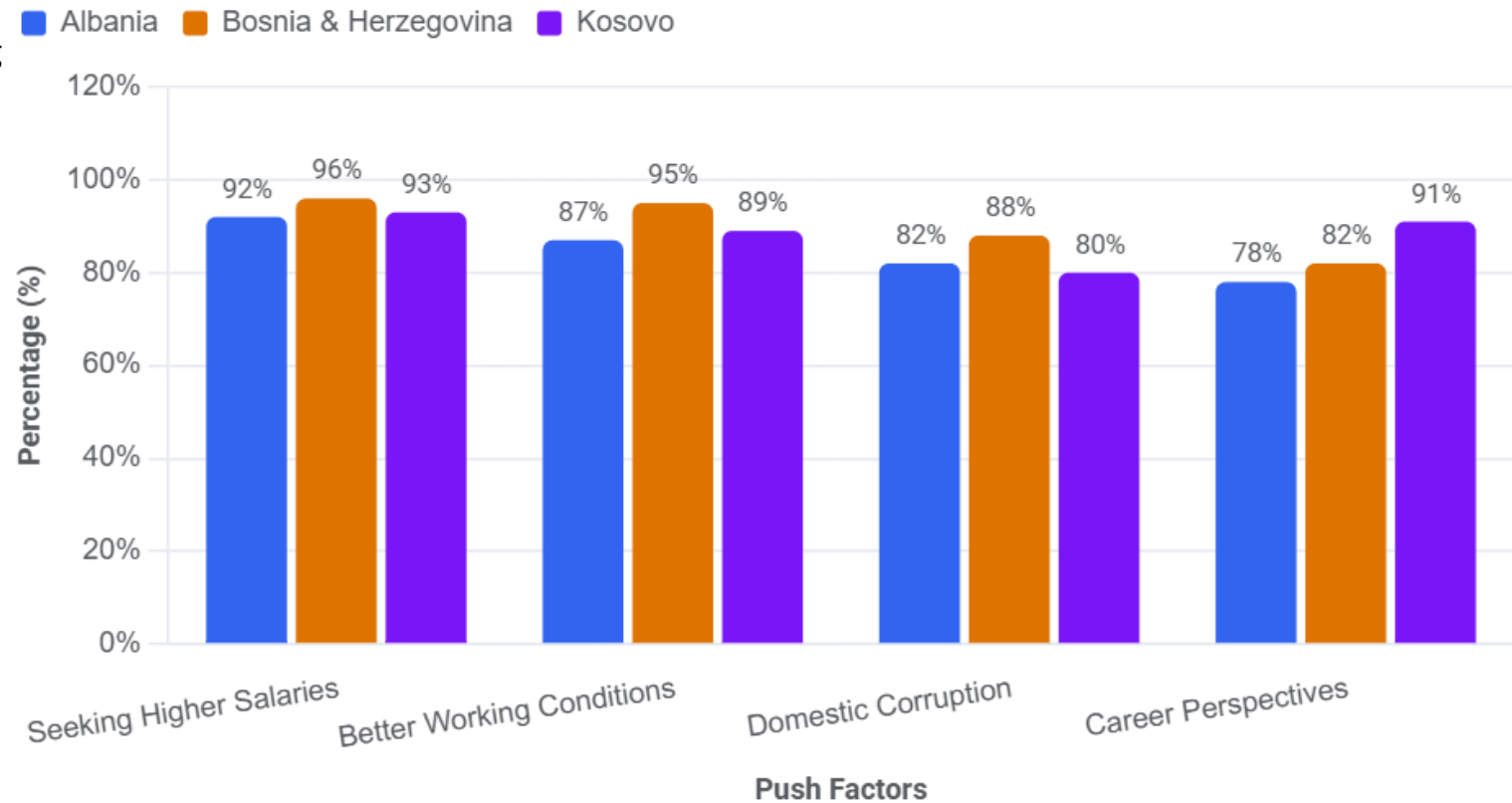
Population ageing: **1 in 5** People expected to be 65+ within the next decade

The “Paradox of Progress”: Digitalization and Talent Loss in the Western Balkans

- Western European nations, particularly **Germany and Austria**, have systematically lowered immigration barriers for high-skilled tech professionals.
- **The "Fast-Track" Drain:** Fresh graduates from top engineering faculties—such as the **University of Belgrade, University of Sarajevo, or the University of Pristina**—are often recruited directly upon graduation.
- **Sunk Education Costs:** Western Balkan taxpayers effectively subsidize the high-quality education of engineers who then deploy their skills to boost the GDP of EU member states.
- **Professor Brain Drain:** Academic institutions also lose their top researchers to the private global market, creating a shortage of qualified professors to train the next generation.

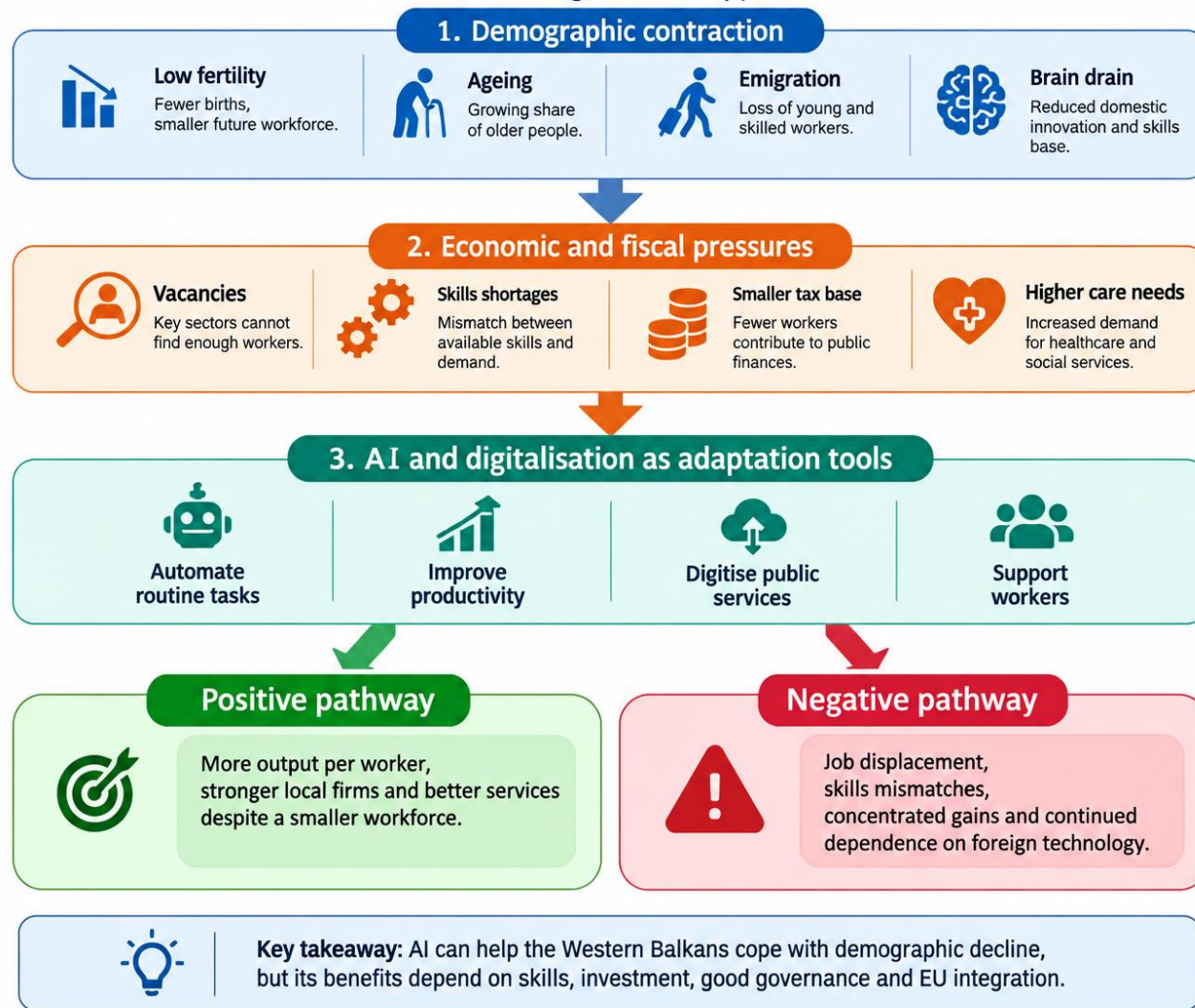
The Paradox of Remote Work ("Virtual Brain Drain"):

- Unlike traditional emigration, a massive portion of the region's top AI developers, data scientists, and cloud engineers stay physically in their home countries but work exclusively for companies in the **US, Germany, or the UK**.
- **The Salary Gap:** Local startups and public institutions cannot compete with Western salaries.



Demographics, Labour and Ai in the Western Balkans

A chain of challenges – and opportunities



Demographic challenge	How AI and EU integration could help
<i>Emigration of skilled workers</i>	<i>Build higher-value local jobs and improve opportunities for remote work and entrepreneurship.</i>
<i>Ageing population</i>	<i>Support healthcare administration, diagnostics, accessibility and services for older people.</i>
<i>Labour shortages</i>	<i>Automate routine processes and help firms maintain output with fewer workers.</i>
<i>Skills mismatch</i>	<i>Align vocational education, university training and reskilling with changing labour demand.</i>
<i>Low productivity</i>	<i>Help SMEs adopt digital tools and integrate into higher-value European supply chains.</i>
<i>Continued brain drain</i>	<i>Attract diaspora expertise, investment and knowledge transfer, while improving domestic career prospects.</i>

EU grants and loans for AI development and digitalization

- **AI-Specific Projects — Serbia and North Macedonia (€5.04m EU Grant):**
Concrete, targeted AI-related grants. This includes **€1.93 million** awarded to the **Serbian** AI Factory *SAIFA* project and **€3.11 million** to **North Macedonia's** *VEZILKA* project.
- **Digitalisation of Businesses — “Go Digital” (€27.6m EU Grant):**
The direct EU contribution in grants and technical assistance within a larger **€377 million regional programme** launched with the EBRD to help SMEs adopt digital tech, automation, and greener processes.
- **EU Growth Plan, 2024–2027 (€2bn EU Grant):**
Under the **2024–2027 EU Growth Plan**, the region will receive a **€2 billion grant** alongside €4 billion in concessional loans. This grant allocation is dedicated to fueling structural reforms and accelerating investments in **digital transition, connectivity, and local skills.**



The Western Balkans „AI-Roadmap“ (until 2030)

Aims to establish a common regional framework for the development and responsible deployment of AI:

- Improving institutional and administrative readiness.
- Aligning regional approaches with European standards, including the **EU AI Act**.
- Fostering structured regional dialogues to ensure AI is people-centered, inclusive, and secure.

Integration into EU AI Infrastructure ("AI Factories"):

- **Serbia and North Macedonia host regional "AI Factories Antennas,"** which grant local researchers, startups, and public institutions access to the EU's thriving, high-performance supercomputing AI ecosystem.
- **Funding via the „Digital Europe Programme“ (2021-2027):** All six Western Balkan economies are formally associated countries with the programme.
- Local businesses, public authorities, and research institutions **apply directly to the general €8.1 billion total program budget on equal terms with EU member states.**



Who captures the value of AI in the Western Balkans?

The EU can shape the rules, funding and market access.

China and US technology companies can shape infrastructure and access to key technologies.

Governments determine the policy environment.

Businesses and universities determine whether technology translates into innovation, skills and productivity.

Workers and citizens ultimately experience the benefits and costs.

