

Critical technologies and Germany's next industrial revolution

IN A NUTSHELL



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- As a gateway to Europe, Germany may offer ideal conditions for the emergence of a “New Mittelstand”¹ of companies whose technologies are increasingly vital to achieve Europe’s policy goals
- Innovation hubs across Germany have become technology epicenters, supported by policy initiatives that are intended to accelerate the growth of both the German and broader European growth-tech ecosystem
- Recent German policy initiatives aimed at unlocking capital to scale technologies critical to the success of Europe’s policy ambition are now creating potentially attractive opportunities for investors

Introduction

Europe is at a critical inflection point, facing an urgent need to build and scale high-tech industries to meet policy goals and navigate through unprecedented geopolitical uncertainty. Germany is widely expected to play a leading role in this new industrial revolution on the back of companies with proven technologies that need capital to scale production rapidly. To boost financing for critical technologies, European and German policymakers are mobilizing public and private capital to support scaleups aiming to become the next generation of industry leaders.

Transformation will rely on an already vibrant innovation and startup ecosystem that runs the length of Germany. Berlin is Germany’s flagship startup city, encompassing everything from software and fintech to cleantech and mobility and Munich’s Innovation Agenda 2030 sets an explicit goal to become one of Europe’s top hubs for AI and startups. These innovation hubs stand to benefit from recent efforts by policymakers to reduce capital markets regulation and improve the tax frameworks for venture capital (VC), all of which are designed to support startups and scaleups and expand the VC ecosystem in Germany and across the broader European Union (EU).

The efforts of policymakers have helped set the stage for the rise of Germany’s next generation of Mittelstand industrial champions while potentially creating attractive opportunities for investors who want exposure to Europe’s most dynamic technology sectors. Germany’s science and research capabilities and its heritage of industrial innovation have led to the emergence of a class of young companies with “first-of-a-kind” technologies that have historically had insufficient access to capital but are now increasingly positioned to contribute to the build out of the European economy of the future.

In this report, we examine how critical technologies could play a pivotal role in delivering against many of Europe’s policy goals and Germany’s national priorities, the role innovation hubs across Germany can play in Europe’s transformation, and recent steps taken by policymakers to increase the availability of growth financing to scaleups may create attractive opportunities for investors.

¹ Mittelstand historically refers to small and medium-sized, often family-owned, German companies known for long-term strategic focus, strong balance sheets, deep specialisation in niche markets and high export orientation

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1 / Critical technologies in Europe's transformation

1.1 Deploying critical technologies to achieve Europe's policy goals

Europe is on a mission to strengthen national and energy security, achieve climate neutrality, boost industrial competitiveness and reduce strategic dependencies. These goals are being underscored by a powerful regulatory and fiscal reset.² These include Readiness Europe 2030 to bolster defense capabilities and the Green Deal Industrial Plan to improve industrial competitiveness and accelerate the transition to climate neutrality. Regardless of the divergent focus areas of Europe's policy goals, the common thread is the urgent need to develop and scale critical technologies with the potential to transform industries that support multiple policy goals [Figure 1](#).

Figure 1: The critical technologies being deployed to deliver Europe's policy goals

Goal	European policy initiative	Relevant critical technology
National security	EU Strategic Compass, Readiness Europe 2030, German Defence Industrial Strategy	Aerospace & defence, cybersecurity, semiconductors
Energy security	REPowerEU EU Hydrogen Strategy	Cleantech, cybersecurity, semiconductors
Climate neutrality	European Climate Law, European Green Deal, Net Zero Industry Act, Fit for 55	Cleantech, advanced manufacturing & robotics, semiconductors
Industrial competitiveness	Competitiveness Compass, EU Industrial Strategy 2030	Advanced manufacturing & robotics, semiconductors
Reducing strategic dependencies	Critical Raw Materials Act, EU Chips Act	Semiconductors, cleantech, advanced manufacturing & robotics

Source: DWS Research Institute (November 2025)

Critical technologies are defined as those with transformative capabilities which, by promoting a strong and competitive economy, help to protect a country's national interests, maintain global influence and drive strategic policy objectives. We identify five categories of critical technologies with transformative potential which we believe will be pivotal to achieving progress against Europe's ambitions:

- (i) **Aerospace and defence:** Encompasses advanced weapons and protection systems alongside satellite technology. These industries can strengthen national security by enhancing surveillance, communication and deterrence capabilities. They also offer vital dual-use benefits, for example in terms of civilian communications and navigation systems.
- (ii) **Cleantech:** Reduces environmental impacts through energy efficiency, sustainable resource use or environmental protection activities such as renewable energy generation and clean transportation. These technologies are closely aligned with strengthening energy security and achieving climate neutrality.
- (iii) **Advanced manufacturing and robotics:** Combines digital tools, automation and data to make the production process more efficient, flexible and innovative. Their adoption may boost industrial competitiveness by cutting costs, improving quality, and reducing strategic dependencies by enabling local high-tech production.
- (iv) **Semiconductors:** Semiconductors are at the heart of emerging technologies like AI, robotics, quantum computing, and renewable energy systems. Semiconductors are essential technologies that support multiple policy goals because they offer the opportunity to automate, accelerate R&D, and improve efficiency across all sectors of the economy.
- (v) **Cybersecurity:** Protects networks of governments and the private sector, financial systems, critical infrastructure and military operations from espionage, sabotage and disinformation campaigns. Cybersecurity therefore can strengthen national and energy security by acting as a digital shield to protect critical assets.

² DWS Investment GmbH (September 2025). Gateway to Europe: Europe's investment renaissance

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1.2 Setting the stage for Germany's new industrial revolution

At the forefront of Europe's transformation and the deployment of critical technologies we expect will be Germany, which is Europe's largest economy and an industrial pillar of the EU's defence capabilities.³ Germany's awareness of its central role in delivering against Europe's policy goals is reflected in a set of national strategic objectives that support technological growth and innovation:

- (1) **National security:** The amendment of Germany's "debt brake" rules now exempt defence spending from the usual borrowing limits. This means the country has now become Europe's defence spending leader and sits in Europe's top tier next to the UK and France.⁴ In its National Security and Defence Industry Strategy,⁵ the German government identified IT & communications, AI, naval shipbuilding, armoured vehicles, sensors as well as quantum technologies, space technologies and unmanned systems as some of the key technologies to ensure technological sovereignty and security of supply.
- (2) **Energy security:** Germany's historical dependence on Russian gas exports helped deliver the 2022 Easter Package of energy laws,⁶ which helped turbo-charge the deployment of cleantech. Last year, Germany led in terms of installed wind generating capacity, accounting for 25% of EU capacity, double that of installed capacity that occurred in the UK and France.⁷ Germany is also the leading producer of solar power⁸ and posted the greatest installed capacity of bioenergy in Europe last year, at nearly ten gigawatts, equivalent to around 24 percent of Europe's bioenergy capacity.⁹
- (3) **Climate neutrality:** Germany's Federal Climate Protection Act targets a reduction of greenhouse gas (GHG) emissions of at least 65% by 2030 versus 1990 levels, and climate neutrality by 2045. These are among the most aggressive GHG emission reduction targets in Europe.¹⁰ The country's industrial decarbonization and hydrogen strategies are intended to lead to the building-out of cleantech manufacturing bases around the country.
- (4) **Industrial competitiveness:** Germany is world leading in manufacturing competitiveness¹¹ although it sits outside the global top 10 in its innovation standing and economy wide competitiveness.¹² However, weak growth and high energy prices have eroded Germany's industrial competitiveness over recent years. To safeguard and improve industrial competitiveness Germany is undertaking a green and digital industrial policy, such as in the semiconductor industry¹³ alongside steps to cut red tape and boost investment.
- (5) **Reducing strategic dependencies:** From chip and battery supply chains in Asia to non-European cloud providers, Germany is acting to de-risk and build capacity at home and across Europe. This includes onshoring capacity for auto and industrial chips, for example, TSMC's semiconductor plant in Dresden.¹⁴

To support the success of these initiatives, the German government is spearheading an effort to provide targeted support to Germany's startups and scaleups and VC ecosystem to help facilitate growth and innovation in industries critical to achieving its policy goals. As explored in greater detail in the next section, these efforts include increasing the availability of financing to scaleups in possession of emerging technologies with transformative potential that need to scale production to industrial levels to become economical.

³ World population review database

⁴ Politico (22 June 2025). Germany pledges to hit 3.5 percent defense spending target by 2029

⁵ Federal Ministry of Defence (January 2025). National Security and Defence Industry Strategy

⁶ German Federal Ministry for Economic Affairs and Climate Action (April 2022). The Easter Packer led to the revision of a number of energy laws including the Offshore Wind Energy Act, the Energy Industry Act, the Federal Requirements Plan Act and the Grid Expansion Acceleration Act.

⁷ WindEurope (February 2025). Wind energy in Europe: 2024 Statistics and the outlook for 2025-2030

⁸ German Trade & Investment (December 2024). Photovoltaic Industry in Germany

⁹ Statista (April 2025). Bioenergy capacity in Europe

¹⁰ Denmark and the UK target GHG emission reductions of -70% and -68% by 2030 respectively. At an EU level, The European Climate Law targets a 55% reduction in GHG by 2030 versus 1990 levels

¹¹ UNIPO (July 2023). Germany is the world's leading manufacturer according to UNIDO's CIP Index. UNIDO will be launching a revamped competitive industrial index (CIP) index at the end of November 2025

¹² According to IMD's World Competitive Index and WIPO's Global Innovation Index, Germany ranked #19 and #11 respectively in 2025

¹³ Reuters (November 2024). German government plans billion of euros in new chip subsidies

¹⁴ TSMC (August 2024). ESMC breaks ground on Dresden fab

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2 / Building a new Mittelstand

2.1 Germany's strong innovation credentials

Germany consistently ranks in the global top tier for science and research capacity, industrial innovation and patents, advanced manufacturing, as well as deep tech including cleantech, robotics, and AI. This is revealed across several key innovation metrics, [Figure 2](#), including being the largest EU recipient of ERC grants and Horizon Europe funding,¹⁵ accounting for 12.6% of patent applications globally¹⁶ and holding the highest share of robot density outside Asia.¹⁷

Germany's strength across the range of innovation KPIs can offer benefits in terms of faster lab-to-factory delivery, higher productivity and wages, and a sophisticated high-tech export basket. However, after several years of stagnant growth, the government has rolled out several measures to spur startups and deepen its VC ecosystem as part of a wider effort to facilitate the emergence of the next generation of Mittelstand companies built around critical technologies that support the country's strategic objectives.

Figure 2: Germany's rankings across a range of innovation metrics

Indicator	Germany's rank	Benchmark	Comment
Manufacturing innovation ¹	#1 in Europe; top 5 globally	Global manufacturing leader	Advanced manufacturing and machinery exports underpin Germany's critical technology strengths
ERC grants (frontier science funding) ²	#1 in Europe	European leader	Indicates Germany's scientific excellence and institutional research capacity
Horizon Europe funding (EU R&D funding) ³	Top EU recipient (15% of total funding)	EU average share <8%	Demonstrates leadership in collaborative R&D and industrial innovation
Startup hubs ⁴	#1 in Europe: UnternehmerTUM (Munich)		Reflects ecosystem depth, talent diversity and strong university-industry integration
Venture capital investment (Europe) ⁵	#3 in Europe (EUR7.4 bn in 2024)	Behind the UK and France	Strong deep tech focus: AI, robotics, clean tech and industrial software
Patent applications ⁶	#1 in Europe; #2 globally	Ranked behind the U.S.	12.6% of all European Patent Office filings originate from Germany. Strong in automotive, machinery and electrical engineering
Industrial robotics density ⁷	#1 in Europe; #4 globally	After Korea, Singapore and China	449 robots per 10,000 manufacturing workers demonstrating leadership in advanced manufacturing and automation
R&D intensity ⁸	3.13% of GDP	EU average of 2.2% and OECD average of 2.8%	Places Germany among the EU's top three R&D investors and meeting the 3% Lisbon target
European Innovation Scoreboard ⁹	Strong innovator (111% of EU average), #9 in EU	vs. EU average = 100%	Strengths in business R&D expenditure
Global innovation index ¹⁰	#11 globally	Out of 133 countries	Strong performance in Human Capital & Research (#4) and Knowledge & Technology Outputs (#11) reflecting robust science base and industrial R&D

1 UNIDO (July 2023). 2 European Research Council (September 2025).; 3 Bavarian Research Alliance (March 2024); 4 FT/Statista/Sifted March 2025; 5 KfW Venture Capital Dashboard; 6 European Patents Office 2025; 7 International Federation of Robotics (November 2024); 8 Eurostat 2023 data; 9 European Commission (July 2025); 10 WIPO (September 2025)

Source: DWS Research Institute (November 2025).

2.2 Innovation hubs can drive Germany's policy goals

This new Mittelstand will be supported by the country's innovative capabilities and existing VC ecosystem. The foundation of this ecosystem is a powerful research backbone illustrated by innovation hubs located around the country's leading universities. These provide a concentration of talent, IP, infrastructure, entrepreneurship services, and support networks for startups and scaleups.

In the first half of this year, the top five German cities for startup formation as a share of the population were Munich, Heidelberg, Berlin, Darmstadt and Aachen, [Figure 3a](#).¹⁸ In terms of absolute numbers, Berlin is the country's flagship start-up city covering a broad range of sectors from software and fintech to cleantech and mobility.¹⁹ In the case of Munich, the Technische Universität Muenchen (TUM) specialises in engineering and computer science and is consistently ranked among Europe's top universities for innovation and

¹⁵ The European Research Council (ERC) awards grants to fund frontier science research; Horizon Europe is the EU's flagship research and innovation funding programme, running from 2021 to 2027 with a budget of around €95.5 billion, it is one of the largest R&D funding programmes in the world

¹⁶ European Patents Office (March 2025). EPO index 2024

¹⁷ International Federation of Robotics (November 2024). World Robotics 2024

¹⁸ Startupverband (July 2025). Next generation

¹⁹ EY startup barometer (January 2025). Venture capital for German startups on the rise

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entrepreneurship. This is complemented by the UnternehmerTUM, an independent but university affiliated centre for innovation and business creation, which bridges TUM's talent with leading German corporates such as BMW, Siemens, and Infineon. Last year, the number of newly founded startups at TUM exceeded 100 for the first time.²⁰ These startups are predominantly B2B and typically specialise in cleantech, AI and defence and aerospace tech. Indeed, German defence tech startups, which are heavily concentrated in Bavaria, captured around 90% of all European defence tech funding in the first half of this year.²¹ Meanwhile, Munich's Innovation Agenda 2030 sets an explicit goal to become one of Europe's top hubs for AI and scaleups.

Although significantly smaller than Berlin and Munich in population terms, Heidelberg punches above its weight when it comes to startups per number of inhabitants. Its startup ecosystem is particularly strong in biotech and health tech underpinned by BioRN life-science cluster Rhine-Neckar, which together form one of Europe's most important biomedical research complexes. In aggregate, the sectors with the largest number of startups across the whole country in the first half of this year were in the software, medicine and food sectors, [Figure 3b](#).

Figure 3a: Number of German startups by city hub in 2025H1

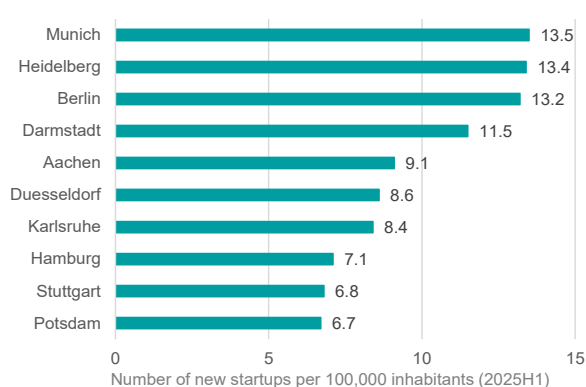
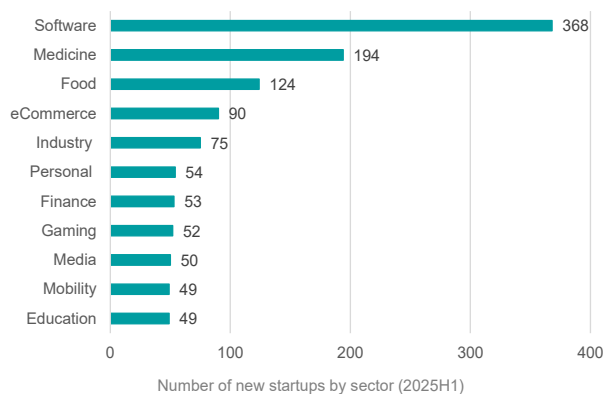


Figure 3b: German startups by sector in 2025H1



Source: Startupverband (July 2025). Next generation. DWS Research Institute (November 2025).

2.3 Historical limits to Germany's VC ecosystem

Compared to the U.S., European startups and scaleups have limited access to capital markets such that Europe's VC ecosystem is small, representing no more than 0.2% of GDP, [Figure 4](#). Many European scaleups seeking to scale their production capacity to industrial levels must turn to foreign sources of capital, which ultimately can harm Europe's competitiveness as European scaleups become M&A targets for non-European corporations and critical technologies developed in Europe are extracted to support foreign interests.

Many European entrepreneurs have historically faced a recurring challenge: how to fund the leap from a prototype to industrial-scale production. This phase demands significant investment in production capacity, engineering, and R&D – not just sales growth. In contrast to the risk profile of startups with unproven technologies, Germany's scaleups are generally more established, asset-heavier companies with independently validated technologies that may have the potential to transform entire industries while helping Germany deliver against Europe's policy goals and its own national priorities.

However, the relative immaturity of emerging technologies that are proven but not yet produced at scale, current lack of short-term cash flows, and regulatory capital requirements means that capex project financing to scale production of emerging technologies is unsuitable for traditional bank financing solutions. Similarly, VC debt financing is primarily used to bridge between VC equity financing rounds earlier in a company's lifecycle and is not typically available for capital expenditure-heavy projects.

As described in the next section, Germany recognizes the need to support its startups and scaleups and strengthen its VC ecosystem and has recently taken steps to mobilize public and private capital to provide financing to scaleups with first-of-a-kind technologies.

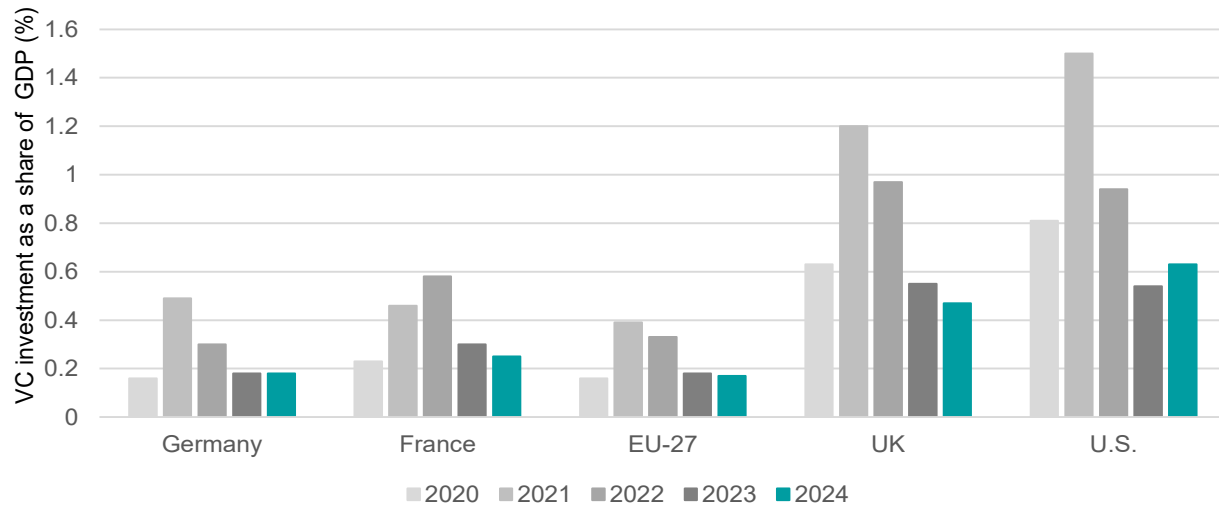
²⁰ TUM (March 2025). TUM sets new record for spin-offs

²¹ TechReviewers (July 2025). Funding focus: Germany snaps up 90% of Europe's record defence tech funding

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Figure 4: The size of venture capital investment by country

Source: KfW (April 2025). Venture Capital Dashboard Q1 2025

3 / Funding Germany's innovation economy

3.1 Supporting startups and scaleups and expanding the VC ecosystem

To boost domestic capabilities in critical technologies, drive investment across Germany's innovation hubs, and build a strong startup, scaleup and venture capital market, the German government, alongside the European Commission, have announced several financing initiatives, [Figure 5](#). These initiatives are aimed at boosting the availability of venture and growth capital, providing seed and very early-stage capital and support tech-driven startups on their path to becoming active contributors to Europe's economy of the future.

The German government's strategy is therefore aimed at securing Berlin, Munich and the other major tech hubs as global tech leaders rather than feeder ecosystems for U.S. and Asian tech giants. This has become an urgent issue since over the last decade because around 6% of startups²² and almost 30% of unicorns²³ have relocated from Europe, mostly heading to the U.S.²⁴

The number of European companies that have achieved a valuation of at least US\$1 billion lags considerably behind that of the U.S. and China. According to the Hurun Global Unicorn index, about three-quarters of the current unicorns are based in the U.S. (50%) and China (23%). Despite the comparatively lower share in the EU (7%), the continent has seen the number unicorns more than trebled since 2017²⁵ with Germany home to a third of Europe's unicorns.²⁶ The desire for more German startups to eventually go public at home instead of abroad lies at the center of the Second Future Financing Act, which was approved in late 2024. This act aims to ease access to capital markets, improve the tax framework for VC investments and cut the bureaucracy around listings and fund structures.

Figure 5: Examples of German and EU initiatives to build startup, scaleup and venture capital ecosystems

Germany	Initiative	Size	Focus
	KfW WIN initiative - Growth and Innovation Capital for Germany (2024)	Aim to invest ~EUR12bn in young innovative companies by 2030	Crowd-in private capital, improve tax, legal and IPO conditions for startups and scaleups
	EXIST Start-up factories (2024)		Public-private funding programme
	Zukunftfinanzierungsgesetz (2023)	Legal and tax reform package	Easier IPOs, better employee stock options, founder-friendly company law
	Zukunftsfond / Future Fund (2021)	~EUR10bn public and aiming to mobilise ~EUR30bn overall	Growth & late-stage VC, deep-tech and climate tech, closing scaleup funding gap
	KfW Capital programmes e.g. ERP, Future Fund Growth facility (2021)	>EUR1.9billion committed to 100+ VC funds	Strengthen VC supply for early & growth stages, crowd in private capital
	INVEST - Zuschuss für Wagniskapital (2013-)	Grants to angel investors, boosting pre-seed capital availability	Aim is to bridge the early-stage funding gap
	High-tech Gründerfonds (HFGF) (2005-)	>EUR2billion across fund generations	Seed financing for high-tech startups
European Union	Initiative	Size	Focus
	EU Startup and Scaleup Strategy (2025)	~30 policy actions	Reducing red tape, cross-border scaling, faster company setup, more late-stage capital
	Scaleup Europe Fund (planned)	Near term target ~EUR5 billion with mission to expand	Growth capital and late-stage investments in a broad range of European strategic technology companies
	European Tech Champions Initiative (2023)	Initial EUR3.75billion with ambition of EUR10 billion	Late-stage financing for European tech champions
	InvestEU (2021)	EU budget guarantee of EUR26.2 billion, with recent EUR2.9 billion top-up	Scale-up funds, late-stage-IPO financing, SME growth
	European Innovation Council (EIC) Fund (2020)	EUR3 billion equity fund inside a EUR10.1 billion overall EIC budget under Horizon Europe	Deep-tech VC fund for startups & scaleups

Source: DWS Research Institute (November 2025)

²² Ifo Schnelldienst (May 2025). Der Start-up-Exodus. Warum Europas innovativste Start-ups nach Amerika fliehen

²³ EU JRC technical report (February 2025). In search of EU unicorns – What do we know about them?

²⁴ Deutsche Bank Research (January 2024). Strong risk capital markets. Vital for unlocking green & digital innovations

²⁵ EU JRC technical report (February 2025). In search of EU unicorns – What do we know about them?

²⁶ Hurun Research Institute (July 2025). Global Unicorn Index 2025

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3.2. Financing the next generation of innovators

Despite the country's world leading applied research, engineering excellence, industrial depth and large startup pipeline, Germany has historically lagged the U.S. and UK in late-stage VC and scaleup financing. German and European firms that need capital to grow are often required to make the difficult decision to accept foreign investment, and potentially even moving abroad. In the aggregate, the lack of domestic capital sources that lead to this outcome can ultimately damage the continent's long-term competitive position across key industries and jeopardize its ability to deliver against policy goals that depend on technological growth and innovation.

The Growth and Innovation Capital for Germany ("Wachstums- und Innovationkapital für Deutschland" or "WIN") initiative was launched²⁷ by the Germany Finance Ministry in late 2024 to bring together a broad coalition of corporates, banks, asset managers and industry associations alongside KfW to improve the framework for growth and innovation capital. The WIN initiative is designed to facilitate growth and innovation in key areas of Germany's economy and help tackle the country's historical structural growth-capital gap by mobilizing around €12 billion in additional venture and growth funding by 2030. Through a ten-point package covering topics ranging from startup factories, cleantech scaleup finance and expanded fund-of-funds structures to regulatory and tax changes for insurers, pension funds and public capital pools, WIN aims to expand and deepen Germany's VC market and anchor more late-stage funding at home. In doing so, WIN seeks to ensure that German startups and scaleups can grow into the Mittelstand of tomorrow.

In our next European Transformation whitepaper, we will take a deep dive into the financing needs of Germany scaleups seeking to expand production as well as market opportunities in industries with first-of-a-kind technologies linked to achieving key policy goals.

²⁷ German Ministry of Finance (September 2024). WIN Initiative Growth and Innovation Capital for Germany

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4 / Conclusion

Summary of key findings

1. **Germany is widely regarded as Europe's innovation powerhouse²⁸:** Investing more in R&D than any other EU country, Germany is Europe's leading country for patent applications and regulatory tops the table as the continent's largest recipient of ERC grants. This has led Germany to become a major first-of-a-kind innovation hub which is backed by strong political support.
2. **Germany is competitive in several critical technologies²⁹:** Germany has structural strengths in cleantech hardware, advanced manufacturing and industrial robotics. Its ambition is to strengthen areas like AI and aerospace and defence tech.
3. **Germany has a vibrant startup ecosystem³⁰:** The country boasts a multi-polar startup ecosystem from Berlin and Munich to Heidelberg, Hamburg and Cologne, which collectively form one of Europe's most dynamic startup landscapes. Berlin consistently ranks among the world's top startup ecosystems and is one of founders' two most preferred European locations.
4. **Germany is home to a large share of Europe's unicorns³¹:** Ranking in the top three European countries but still dwarfed by the U.S. and China which together host the vast majority of the world's billion-dollar startups.
5. **Germany punches below its weight when it comes to its venture capital ecosystem³²:** The country's VC investment-to-GDP ratio is approximately 0.2%, only slightly above the EU-27 average, and just one-third of the levels in the U.S. and the UK.³³

Investor implications

1. **Germany undertaking fiscal and regulatory reset³⁴:** Understanding evolving regulatory frameworks is becoming increasingly important. Incentives are improving, and public-private partnerships such as the WIN initiative are the engine rooms to mobilise institutional capital.
2. **Strong policy tailwinds should support critical technologies³⁵:** Clear need to build out new, growing industries in the EU, especially Germany to strengthen national and energy security, achieve climate neutrality, boost industrial competitiveness, and reduce strategic dependencies.
3. **Broad range of potential sector investment opportunities:** Long established capabilities have existed in cleantech and advanced manufacturing, but fiscal headroom is allowing Germany to become Europe's defence spending leader. This is prompting record VC investment in European defence tech, and Germany has become the dominant player in terms of deal flow.
4. **Access strategies need to recognize Germany's varied startup ecosystem³⁶:** Its startup landscape is multi-hub with each city and region having distinct characteristics. Most investment opportunities are typically B2B, industrial or heavy engineering.
5. **New investment structures are emerging³⁷:** The longer development cycles of deep-tech ventures may require new types of funding vehicles such as public financing and blended finance vehicles.

²⁸ UNIDO (July 2023)

²⁹ European Patents Office 2025

³⁰ FT/Statista/Sifted (March 2025)

³¹ Hurun Research Institute (July 2025). Global Unicorn Index 2025

³² KfW (April 2025). Venture Capital Dashboard Q1 2025

³³ KfW (April 2025). Venture Capital Dashboard Q1 2025

³⁴ DW (March 2025). Germany's Bundestag votes in favor of reforming 'debt brake

³⁵ High Tech Agenda Deutschland, Zukunftsfonds, DeepTech & Climate Fonds

³⁶ KfW WIN Initiative Growth and Innovation Capital for Germany (September 2024)

³⁷ KfW Capital programmes, EXIST Start-up factories

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