



**Politecnico
di Torino**

Politecnico di Torino

Engineering and management: Finance - LM-31

(DM270)

A.a. 2023/2024

Sessione di Laurea

Dicembre 2024

The Italian Venture Capital market: A focus on opportunities for the Sicilian Territory

Relatore:

LUIGI BENFRATELLO

Candidato:

GIANPAOLO FORMICA

Summary

1. <i>Venture Capital: Main Characteristics</i>	5
Who are VCs:	5
Why equity?	5
Why do we need Venture Capital?	7
Growth phases for VCs investments:	8
How VC funds are structured?	9
Management Fees and Carried Interest	10
Example of exit proceeds distribution among GPs and LPs	11
Catch-up	12
Investment Process	13
Exit strategies	16
Traditional and start-up valuation methods	18
VC fund typologies	19
2. <i>Global VC Market Outlook</i>	23
Latest VC financing analysis	24
Exit results	29
3. <i>European VC Market</i>	33
Investment sectors in Europe	35
Deal size and analysis	38
Exit analysis	47
4. <i>Economic impact of VCs</i>	50
How VC investments vary by GDP in Europe	50
Economic impact in a country	52
5. <i>Italian Venture Capital</i>	54
Latest market trends	54
Operations typologies and Deal origination analysis	58
Investments by area	59
Italian Innovation Ecosystem	60
Vertis SGR	63
6. <i>Southern Italy Innovation Ecosystem</i>	64
Startups as a driver for Job occupation	66

Unified Special Economic Zone	66
Opportunities for “Mezzogiorno”	69
Latest developments and challenges in southern Italy	70
Persistent challenges of Southern Italy	72
7. Sicilian economic landscape.....	73
Sicilian Ecosystem Analysis	73
Sicilian employment rate growth.....	75
Sicily’s role in the Italian Innovative Landscape	75
Sicily in the European Innovative Landscape	77
8. Comparative analysis between Lombardy and Sicily	78
Lombardy in Italian VC market	78
Lombardy in the European Innovative landscape.....	80
Sicily vs Lombardy: Investments Gap analysis	80
9. Private sector added value for Italian GDP.....	83
Data Sources.....	83
Methodology.....	84
Results.....	85
Discussion	85
Adjusting for actual inflation data	85
Startups value added on national GDP.....	86
Do startups and VC investments really matter?	88
VC backed firms: Impact on regional occupation	91
What if Scenario	93
How to bridge the gap	95
10. Conclusions.....	97
Bibliography.....	101

1. Venture Capital: Main Characteristics

Who are VCs:

Venture capitalists are professional equity investors that plays a crucial role in the funding and development of new ventures, particularly in high-tech industries. Equity investments are very common in Italy, and it is represented by different classes of shares with different rights. Through equity investment, the investor become immediately part of the firm capital and property.

Why equity?

For firms, equity, as debt, is a source of financing. The choice is based on the best fit for the company capital structure, financial situation (if the firm is in *bonis* or *distressed* condition) and how the company is perceived. Typically, for a startup, internal funds or equity are preferred to debt.

This happens for many reasons:

1) Risky firm and risky return

Startups and innovative firms are perceived as very risky. This often happens because these firms work on emergent sectors with a not validated business model and instable or negative cash flow. Moreover, as it is perceived risky, interest payments on a loan are more expensive. It's not easy for a bank to estimate the right interest to fix for a loan for an innovative firm because of lack of technical knowledge for a fair valuation. Equity, unlike debt, doesn't require a mandatory interest payment or capital reimbursement, so it doesn't reduce liquidity of the firm but gives the possibility to investors to increase their portfolio investments value getting higher returns

2) Incentives alignment

Investing on equity means also that all the investors are sharing the potential success or failure of the venture. The better the investment performs, the higher the return. This is a strong alignment of interest incentive between investors (GPs and LPs of VC fund) and the startup founder.

3) Cash flow uncertainty

Startups are often subjected to uncertain cashflow that won't permit a regular interest payment or a capital reimbursement for a loan. Equity financing permits to have a better concentration of resources for a product development without allocating money for debt repayment. So equity financing means also flexibility.

4) Strategic exit

VC funds realize their return through the so called "exit", or rather, the process of selling part of their participation stake using instruments like IPOs and acquisitions. In this way, equity can reach a higher value and generate higher returns. If they would finance with other kinds of financial tools like debt, they would not generate the same returns.

5) Control and governance

Equity gives to investor not only an economic return but also influence the decision power on the strategy of the firm.

In this way VC investors obtain different rights that help protect the investment and grants that firm will be in the right strategic path:

- A seat on the Board of Directors
- Voting power, usually with veto rights.
- Liquidation preferential rights: They get money first in case of liquidation.

6) No collaterals needed

Innovative startups rely more on the potential of their idea, team capabilities and on firm long-term vision, they don't have valuable tangible assets to use as collaterals to get granting on loans.

All these conditions make equity the right tool of financing for innovative firms that rely on intellectual properties, softwares and other intangible assets.

Why do we need Venture Capital?

Venture capital (VC) it's the most common form of intermediate financing for innovative startup. Receiving a VC financing it's a crucial milestone in a start-up life cycle, but what are the main reasons? Why do we need VC in our economic system?

Internal reasons:

- **Efficient information collection:** when companies with a high technological profile seek financing, they find themselves faced with high information asymmetries, there are search costs to find investors, the result is that market operators are needed to act as intermediaries, this is where the role of venture capital which reduces research costs and collects information
- **Experts' consultancies:** in the initial stages the investor helps the company and allows it to build a network.
- **Liquidity injection:** A VC involvement on a startup investment means great amount of liquidity in that firm, this increases the chance of surviving for a risky firm.
- **Signaling effect:** A venture capital loan provides a signal of the quality of the project, promotes listing on the stock exchange and further granting of credit (plays a certification role)

External reasons:

Invest on a risky firm, presupposes to have a lot of specific technical skills, knowledge and experience to recognize the right investment opportunity, skills and knowledge that institutions typically don't have for many reasons related to the nature of criteria and principles of businesses valuation.

Banks tend to have a conservative approach on the risk management, they prefer to invest in less risky opportunities as in mature firms that shows a more consolidated and evaluated market role and condition.

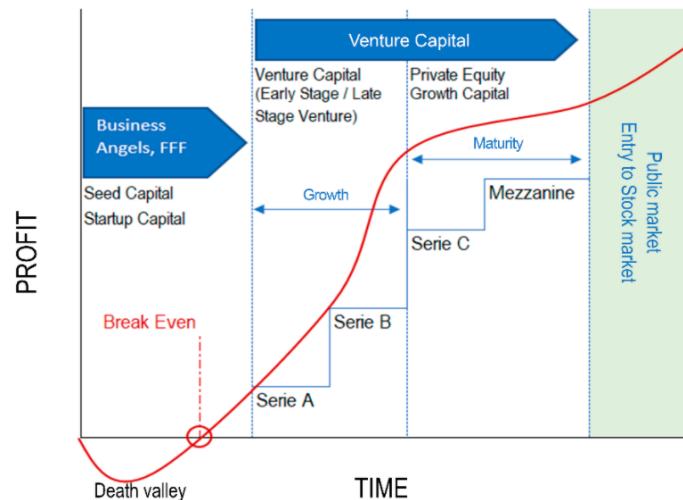
- **Use of suited financial metrics:**

Banks use financial metrics like CFs, P&L and collaterals to evaluate the possibility of solvency and interest payments. As said before, startup doesn't have a regular cash flow and the valuation is related to the future potential of the firm, this makes difficult for the banks to apply their traditional method for an actualized valuation.

- **Institutions knowledge gap:**
Banks don't have the necessary expertise to evaluate these elements, while venture capital and other professional equity investors are specialized right for this purpose.
- **Focus on equity:** Venture capitalist, invest through equity and they don't finance focusing only to credit, even if they can use mezzanine credit or other hybrids instruments as source of financing.

Growth phases for VCs investments:

VCs typically invest in phases which risks



VCs tend to invest on startup phases with a good equilibrium between potential growth and risk so typically after the DEATH VALLEY phase. Most of all on two kinds of these: Serie A and Serie B, C.

Serie A (Seed/Early stage)

Serie A phase is one of favorite VCs phase, because it represents an equilibrium between risk and opportunities. In this phase the startup has already a validated

product on the market, they have a significant users base and is starting to generate income. Here, VCs invest to exploit and improve scalability. They typically support the commercial validation of the product in exchange of a significant percentage of equity that has a relatively low value respect to the future one. Investment size goes from 2 to 15 million euros.

Serie B (Early Stage)

Also, Serie B phase is a very common phase for VCs investments, because the startup has already reached some kind of certainty in the market and growing rapidly.

Here VCs invest to accelerate the growth and consolidate startup position in the market, supporting the expansion of the team, enter in new markets and improve operational infrastructure. It's less risky than Serie A investments but typically with a lower return on equity investment value. Investment size is typically 10 - 50 million euros.

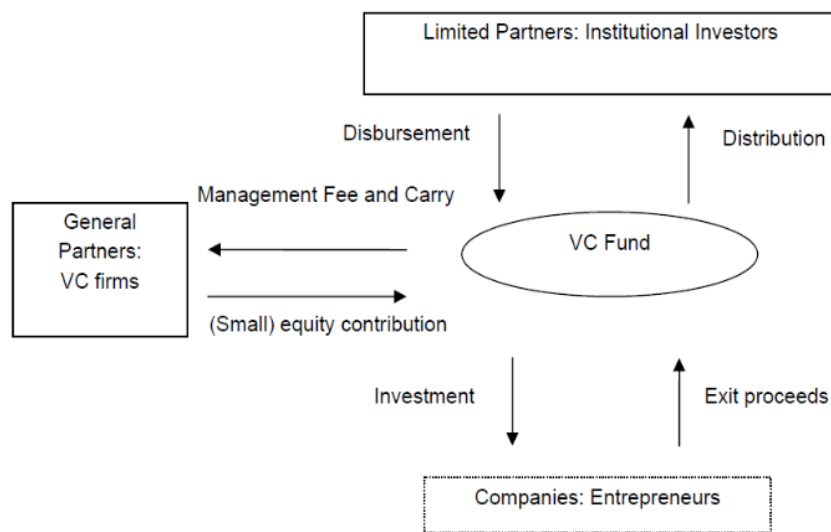
Serie C (Growth Stage)

Serie C investments are less common than A and B but usually they invest in syndication with some PEs. In this phase, VCs invest to sustain mature startup that are looking for a massive expansions, international expansion, new products development, M&A, or IPO. Here the risk is relatively low because startup is more consolidated and in an advanced growth phase. Investment size can be between 50 – 100 million euros.

How VC funds are structured?

VC firms are firms that manage external investors' money through a fund that invest in innovative companies with high growth potential.

Funds are structured by two main players: **Limited Partners (LPs)** and **General Partners (GPs)**.



Limited Partners:

They are external investors who provide capital for investments to the VC fund. LPs are typically institutional investors, pension funds, high-net-worth individuals. They are people that manage a portfolio of different investments, and they don't run the business, only consult notebooks and monitor performance in general on the investment and have a seat on Board of Directors.

General Partners:

GPs are responsible for manage the fund, they analyze potential investments and have decision power. They are compensated through a management fee and the so called "carried interest" or "carry", a share of the profits. They also contribute with a small equity portion in the fund, useful not only to align interest with other investors but in the VC firm itself.

Management Fees and Carried Interest

VC firms charge an annual management fee, typically 2 % of the committed capital. This fee is useful to pay salaries, administrative expenses and operational costs. In addition to that, GPs receive a stake of the profits from successful investments, known as carried interest, that is a bonus for good performance. It is defined in the Limited partnership agreement (LPA) and is typically equal to 20%, but this percentage it's generally subordinated to the reaching condition of different target of returns.

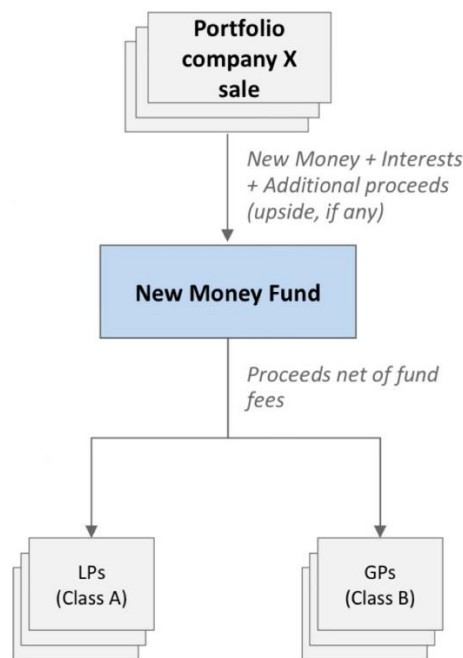
Example of exit proceeds distribution among GPs and LPs

The proceeds received from the portfolio companies managed will flow to the “new money fund”. The new money fund will distribute the proceeds, net of fund’s costs, to the two different classes of unitholders:

Class A: Investors with a hurdle rate @8% IRR, receiving a carried interest of 80% of Exit proceeds.

Class B: GPs committing at least 1% of the fund raised will receive 20% of the proceeds (in this case with catch-up)

The two classes will receive proceeds according to a predetermined priority.



Let's make a numeric example:

If the investment amount is 300 mln, and the return is 600 mln, and the investment duration is 8 years we will have this distribution:

LPs , will get the money invested back plus an 8% (hurdle rate or preferred return) per each year of the investment duration.

$$300 \text{ mln} \cdot 8\% \cdot 8 \text{ years} = 192 \text{ mln}$$

So, LPs will get $300+192 = 492$ mln in return.

Then, with catch-up priority, GPs will receive 20% carried interest on the remaining 108 mln ($600 \text{ mln} - 492 \text{ mln} = 108 \text{ mln}$) so:

$$108 \text{ mln} \cdot 20\% = 21,6 \text{ mln}$$

And the rest 86,4 mln ($108 \text{ mln} - 21 \text{ mln} = 86,4 \text{ mln}$) will be distributed following the 80%/20% rule. So LPs, will get a stake of 80% of 86,4 mln and GPs a 20% stake.

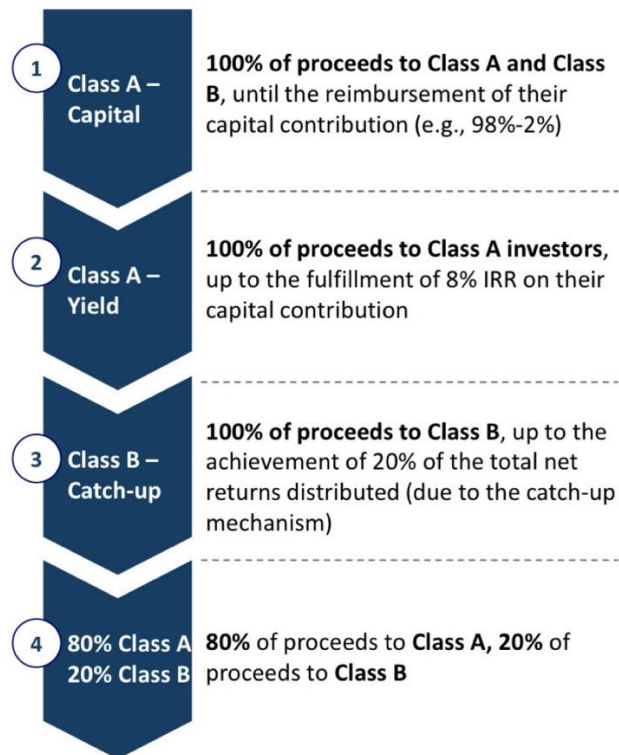
Catch-up

Why catch-up is important? Because its grants a priority on waterfall distribution of proceeds.

Following the example made before, let's hypotize we won't have a return of 600 mln but a 500 mln one.

LPs will get always the 8% per year of the invested capital (192 mln) plus the invested capital itself, so, always 492 mln. Only 8 mln more can be distributed. With catch-up, GPs will get the whole 8 mln, without it, 80%/20% rule enters the game, so LPs will get another additional stake of 80% of 8 mln (6,4 mln) and GPs the 20% of 8 mln (1,6 mln).

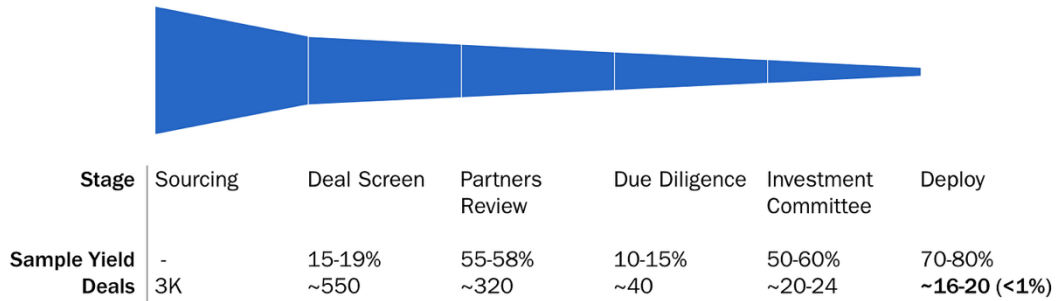
So it's an important difference. Typically catch-up is agreed before the investment in the LPA, permitting GPs to have the right compensation structure in order to align better interests.



Investment Process

VC firms manage a portfolio of companies, diversifying investments to reduce risk. Depending on the size of the fund, they invest from 20 to 30 companies in average. These firms are the result of a very selective analysis: they invest in firms that can generate greater returns through acquisitions or IPO. Investment takes place in rounds. Typically, with the presence of syndication (co-investment) with different VC funds. In case of syndication a representative investor is responsible for the affair, he decides the price and investment terms, provides major part of the capital and accept to represent the whole round in the board of directors. More than a half of the portfolio firm in the best case will recover the original investment, in the worst scenario it will be a total loss. High mortality rate, beyond 50%. Yields are highly cyclical. From 10% to 20% of financed firms must be the true winners to get target return of 25-30%. VC's goal is to maximize higher return, and their success depend on a small number of "home runs", small firms with good scalability potential. They focus more on firms' selection than on the diversification of the risk.

VENTURE SELECTION PROCESS



Less than 1% of firms are selected for VCs financing.

Based on a sample of 3k potential deals, as it is shown in the picture above, the investment selection process of a fund is divided in different specific defined phases:

Deal Sourcing: In this phase, VCs are looking for investment opportunities. Many ways can help to find the right opportunity:

- Network: Relations with entrepreneurs, other investors, university, founders.
- Events or conferences: participation to different pitch and demo day
- Startups competition.
- Direct proposals: Founders that are looking for investors.

In this phase the important goal is the identification of promising companies that show high potential.

Screening: Here, a first selection is made, only interesting and promising proposal goes on. Venture capital invest in young realities that operates in different areas with high uncertainty on product/service and market, even with a good activity of screening ex-ante, it's normal to have a high rate of default of firm selected. Screening process includes different steps:

- **Market examination:** Evaluation process of market size, competitors, and startup potential to scale.

- **Team evaluation:** VC team evaluate competencies and chemistry of the startup team.
- **Product or service evaluation:** VC team evaluates innovation of the service/product and how it can potentially impact the market and how it differentiates from competitors.

Partners review: GPs evaluate proposals that pass the first selection. Typically, partners are experienced and capable expert that can have an objective approach on the selection of these proposals, analyzing specific parameters. They could be assisted in this phase also by external figures, who may focus on finding deals or managing portfolio companies without being involved in the firm's day-to-day management.

Due Diligence: Due diligence is a deep analysis of the proposals that passed previous steps, so basically, only the most prominent projects can pass to this phase. While screening was only a first evaluation of the proposals, due diligence embraces a wider and detailed analysis of the startup, to verify and minimize investment risks:

- **Financial Analysis:** Analysis and evaluation of financial statements and business model.
- **Legal compliance:** Valuation of potential risks and compliance with patents, contracts, clients and suppliers.
- **Product/service and market valuation:** Ulteriore approfondimento sulla validità del prodotto e sull'adeguatezza del mercato.

Investment committee: If due diligence it's positive, VC prepare a **term sheet**, that is a document that define the terms for the investment, but we will talk later in detail of it.

Deploy or Deal Closing: Once the term sheet is approved from both parties a legal documentation is redacted and signed with all the details. At this point, VC proceeds with the payment and money injection in the start-up.

After the investment is made, VC actively support the growth of the firm in different ways, like offering strategic and management consultancy, using their network to

facilitate connections with new clients, investors or partners, allocating further resources with other investment rounds (follow-on investment).

Furthermore, VCs experts are actively monitoring the investment performances through all post investment phase till the exit phase.

Exit strategies

There are two main exit routes for a VC that invested in a start-up: IPO and via acquisition. IPO (Initial public offering) is the process of a private company to offers share on the public market for the first time. A good exit strategy depends on different factors such as the financial market conditions in the period of the exit, conflicts of interests among managers, asymmetric information between buyers and new investors, VC fund characteristics (if it is independent, corporate, governmental, etc.) expected profitability of the investment. As reported in Bing Guo, Yun Luo and David Pérez-Castrillo's paper "Investment, Duration, and Exit Strategies for Corporate and Independent Venture Capital-Backed Start-Ups" it is possible to say that startups backed by CVC funds tend to receive larger investment amounts and remain involved for a longer duration before an exit compared to those backed by IVC funds. Central argument in the study is that the type of VC backing a startup, whether corporate or independent, affects its exit strategy, specifically whether it exits through an Initial Public Offering (IPO) or an acquisition. The study posits that startups with higher investment amounts are more likely to go public through an IPO, while those with lower expected valuations tend to be acquired. Additionally, the length of time a startup is backed by CVC funds also plays a crucial role: longer durations before exit lead to more acquisitions, as more time allows for better information about the startup's performance to reach the acquisition market.

The research also highlights the distinctive characteristics of CVC funds. CVC funds are more patient than IVC funds, meaning they are willing to stay invested in startups for a longer period, leading to more acquisitions but also larger investments. This patience can be attributed to the strategic, rather than purely financial, goals of CVCs, which often aim to foster innovation that aligns with the

parent company’s objectives. IVC funds, by contrast, focus primarily on financial returns and may push for quicker exits, often through IPOs. A novel aspect of the study is its exploration of how the type of venture capital fund influences both the level of investment and the length of time before an exit. Startups backed by CVCs tend to see longer durations and larger investments. The research concludes that while larger investments increase the likelihood of an IPO exit, longer durations tilt the exit strategy toward acquisition. These findings have significant implications for both entrepreneurs and investors in understanding how the nature of venture capital, whether corporate or independent, shapes the lifecycle and ultimate fate of startups. By accounting for the type of VC backing, startups can better strategize their approach to investment and exits, ensuring alignment with their long-term goals and the expectations of their investors.

	IVC	CVC	Difference	t-Statistics
IPO	0.33	0.35	-0.014	-0.86
Investment Amount	25.95	51.84	-25.88	-12.29***
Duration	1,642.02	1,937.76	-295.74	-7.99***
Investment Rounds	3.98	5.29	-1.30	-13.89***
Syndicate Size	4.65	9.02	-4.37	-29.78***
VC Fund Size	219.50	208.99	10.51	0.99
VC Fund Age	7.85	8.19	-0.34	-2.17**
IVC Fund Age	6.84	7.91	-1.07	-5.57***
Later Exit Stage	0.79	0.89	-0.10	-9.02***
Early Invest Stage	0.68	0.82	-0.14	-10.48***
Industry 73	0.44	0.53	-0.09	-5.19***
Patent in Stock	0.44	0.63	-0.19	-2.06**

This table presents the univariate analysis comparing the characteristics of start-ups backed by CVC and IVC. It highlights that start-ups supported by CVC typically receive larger investment amounts than those backed by IVC. Additionally, there is a notable difference in the average duration between the two types of start-ups. CVC-backed ventures tend to experience more investment rounds, involve larger syndicates, initiate investment at earlier stages, exit at later phases of the business cycle, and hold more patent applications prior to the first investment round. Statistical significance is indicated by ***, **, and *, corresponding to the 1%, 5%, and 10% levels, respectively. Refer to Appendix B for detailed definitions of the variables.

Traditional and start-up valuation methods

Valuating a not start-up reality, involves traditional valuation methods like:

- DCF: Expected future cashflows actualized to a present value using a discounted rate, often the WACC (Weighted Average cost of capital) that reflect the risk and the cost of capital.
- BREAK-UP: The firm in analysis is considered like a puzzle of small specific pieces of business valuating and summing them, the sum of these pieces is the value of the business.
- MULTIPLES AND COMPARABLES: Some indicators are identified and compared to other firms that have similar characteristics of the firm in analysis. The firm value will be equal to the product of an accounting metric of the firm and a reference multiple that is computed by the comparative analysis.

These methods can't be applied totally to the start-up since, as we said before, they have different characteristics.

Start-up can be evaluated using correlated but different methods as: Berkus Method, VC Method, Comparable Method.

Using Berkus method, basically, the investor gives a score to five categories: Team management capabilities and quality, Value proposal, Prototype, Strategi relations, product. Start-up value will be equal to the sum of these scores.

Venture Capital method is composed by three phases. In the first one a first phase, economic results of a specific future year are evaluated. In the second phase, economic results are estimated to determine start-up value in the future using Multiple methods. The value found in this phase is actualized to a risk rate, this valuation is the third phase itself.

Comparable method, instead, provides a comparison between similar start-ups and in this way start-up value is estimated.

These methods are not easy to use, it requires a lot of experience, that's why most of professional investors are used to be the main players high tech firms and prominent start-ups.

VC fund typologies

Fund have often a life duration that goes from 8 to 10 years.

There are different kind of venture capital funds. Every fund has different goals, different strategies and different approaches on coaching e consultancy side.

IVC (Independent Venture Capital) fund has the goal of maximizing its return on investment, obtain a major affairs flow and to do that they must be very selective and achieve historical successes to be distinguished among other funds, stabilize new financing cycles.

IVC fund manage and collects investors' money, they need to show higher yields if they want to collect other third parties' investments. They have an active and continuous approach on the management and monitoring of their activities. They offer services that permit to add value to their portfolio firms like strategic planification, finance, accounting, marketing, human resources management, network.

Other kind of VC funds are called Captive VC. They are like a IVC on the general structure or terms of deals making, but with the difference that behind a CVC there are institutional entities that issue capital such as: Affiliated banks, Big/mature corporate firms, Governative entities. These entities have a significative influence on the investment decisions of the captive fund. Captive funds, tend to be less involved in the added value process respect to IVC, so they don't do such activities that can increase the value of portfolio firm or add an imprinted contribution like mentoring, coaching and so on. This seems to influence on the final performance of the firm.

Let's analyze them in deeper details.

BVC (Bank Venture Capital): In most European countries commercial banks are the main financial contributors for VC enterprises. Compared to IVC, le BVC are

less influenced by quick disinvestment to gain return and recover invested capital, they have less pressure on this because they can easily get the money from the mother Bank. BVC funds act like strategic investors, they seek opportunities to create future clients for loan activities and subscriptions for mother bank. A BVC fund prefer to invest in a less risky phase. As for banks loan, receiving a BVC investment generate a signaling effect, indeed it gives to loans market a signal on the quality of the portfolio companies. In the screening activities, BVC acts more as bank then as a VC, they pay more attention on traditional statements analysis.

CVC (Corporate Venture Capital): Here VC funds are subsidiaries of other firms, both financial and non-financial (for example Intel, Google, J&J). Strategic goals here are also different, indeed, as mature firms, they tend to have difficulties to grow more if they don't be active in the market to find new technologies that they can implement or acquire. They want to have a window on newest technologies, they assist portfolio societies giving them added value services, exploiting mother firm resources. Also, here different investments practices are implemented, many of which are the result of mother firm's pressure to adapt and integrate the innovative investment to directives of the mother firm business. CVC are considered less efficient, because of the associated uncertainty to potential strategical and financial benefits, incapacity on the attraction and upkeeping of fund management experts. Respect to IVC, BVC are considered more patient on their firm portfolio and typically exit phases come years after than IVC.

GVC (Government VC): Since they are Government VC funds have preferences for social purposes. Their selection process it's typically orientated to investments that generate social benefits e public local advantages. They intervene to correct some perceived failure from offer side in the national market of VC or to fill some financial gaps that are verified in the firms in the first growth phases. Investments are kept in the portfolio for a longer period of every private investor would do. I GVC are less subjected to reputational constraints because they don't collect financing from third parties and doesn't have a clear exit strategy. Their screening process even if is not necessarily less efficient than IVC's, could be subjected to important distortions if GVC are related to politics interests.

Main policy goals of these government funds it's to have a positive impact on VC performances of New Technology Based Firms (NTBF): Innovation, growth, TFP and the probability to be listed on market. They are concentrated on a limited group of industries. Governative funds have limited impact because support modus of this funds can be substituted from other incentives that public services grant to enterprises. Typically, the sustainment of NTBF from government or local government could happen through:

- Direct politics measures, for example the creation of VC funds managed directly, subsidies, loans and guarantees, tax credits)
- Indirect politics measures, for example protection for VC firms, creation of a market well developed and liquid)

Also here, portfolio firms benefit of a signaling effect.

Different empiric studies were trying to understand if VC were capable to promote growth of a firm and to generate added value in the economy from a macroeconomic point of view, and they resulted to be effective in the growth rate of backed firms.

Instead, not so good results were found for firms backed from:

- BVC, because they are not typically “hands-on” investors, they are not independent in the decisional processes, and this create a limitation on their efficiency on carrying firms to a successful exit.
- GVC, because they have limited resources since they are vulnerable to government budget cut, and they are not able to generate a compensative structure for managers that could be like the IVC one. So, interest asymmetry is more likely to arise, and they monitor in a less strict way portfolio firms respect to IVC and using contractual mechanism less numerous and less efficiently.

	Independent VC	Corporate VC	Banks VC	Government VC
Financial goals	High	Medium	Low	Low
Strategic goals	Collects additional capital from Institutional Investors	Have access to advanced start-up technologies	Generate bank services demand	Social and political: Create more job offer, local development
Coaching	Resources, capabilities and commercial contacts of IVC's investors fund	Resources, capabilities and commercial contacts of mother firm	Resources, capabilities and commercial contacts of mother bank	Limited access to resources and competencies

2. Global VC Market Outlook

Before analyzing European and Italian market, it is useful to understand how VCs are performing on a global market basis. The VC market is highly cyclical and follows main general trends of the state of the economy but in a more amplified way. In a very stable and growing state of the economy and easy access to capital with subsequent low interest rates and high liquidity, the VC market tends to expand, increasing investments and valuations. On the contrary, in uncertain states of the economy, investors become more cautious and capital flows reduce drastically.

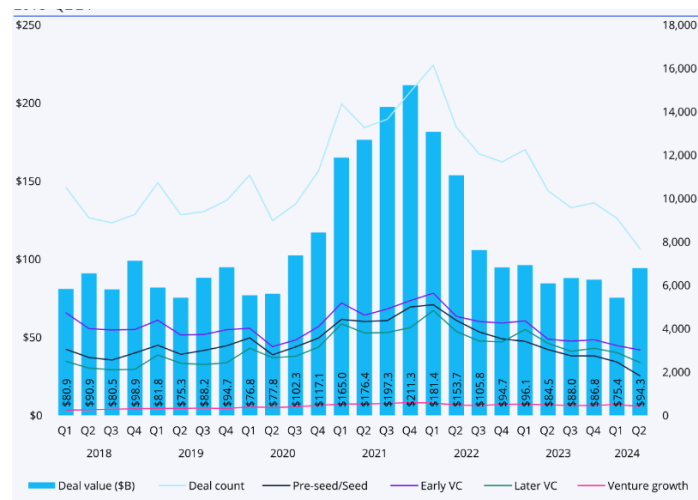


Figure 1: Venture Capital, private equity, and corporate venture capital funds raised, by quarter (\$B)

In the figure above, it is possible to see that Q4 2021 global venture financing trend shows a record peak of investments around the globe. It's the highest ever recorded in the last decade, reaching 211,3 billion dollars of investments. All in all, 2021 saw \$671 billion invested throughout the full year. Key drivers and trends that both stoked this historic surge include:

- Strong liquidity thanks to expansive monetary policy post COVID-19 created adding further veracity to sky-high private valuations.
- Ongoing levels of commitments by limited partners to fund managers worldwide.

- Surges in equities that prompt further allocations to alternative investments, especially venture and private equity, in order to keep up with the “denominator effect”
- The diversifying and still-growing base of startups worldwide that are exerting significant demand for capital
- Euphoria for fintech, AI, crypto and Saas (Software as a service) investments: these sectors were rapidly growing pushing investors to invest also for FOMO (Fear of Missing out) and high competition between VCs.

Latest VC financing analysis

Starting from **2022** significant market volatility, ongoing geopolitical and economic turmoil (Ukraine vs Russia war and gas crisis in Europe) including fears of a recession, have led to a continued and significant cooling of global VC funding. VC environment has seen the overall number of deals drop to its lowest levels since 2019 and the value of those deals slump to mid-2020 levels: the peak of the pandemic and lockdowns.

Most of 2022 finance consulting firms VC pulse reports show that global venture capital investment dropped for the fourth consecutive quarter in Q4'2022 - falling from \$105.8 billion on 7,767 deals to \$94.7 billion on 6,641 deals. Global investment has fallen to its lowest levels since Q4'2019.

2023 and **2024** VC investment globally are quite similar and **2024** is expected to remain relatively stable in Q3, although a further increase of \$100 million+ mega-deals are expected as VC investors are increasingly more open on funding to appease investors and take advantage of emerging opportunities.

IPO activity globally could also increase in Q3 2024 as startups look to take advantage of a brief window of potential opportunity. A major uptick in IPO activity, however, is not expected until Q1 2025 or Q2 2025.

Main market attractions

Despite some investors shifting focus towards startups with AI-driven value propositions rather than broader investments, artificial intelligence (AI) remains the leading sector for venture capital (VC) globally.

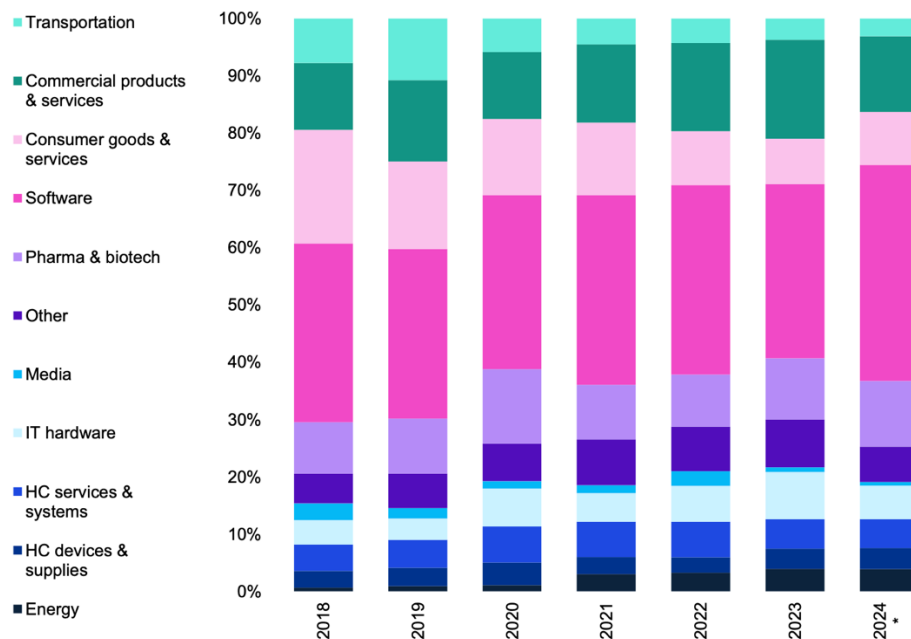


Figure 2: Global financing trends to VC-backed companies by sector in \$B.

Alongside AI, alternative energy and cleantech—technologies aimed at reducing environmental impact—are also gaining priority. This trend shows no sign of slowing down, as demand for action against future climate challenges grows in nearly every region. Several AI-based startups, including US companies CoreWeave and xAI, France’s Mistral AI, and Germany’s DeepL, attracted large investments. This was driven in part by the substantial costs tied to developing and deploying large language models (LLMs) and other AI technologies. Tech giants worldwide continued pouring significant capital into the sector during Q2 2024. A key area to monitor in the coming quarters will be AI regulations. In Q2 2024, the Council of the European Union passed the AI Act, becoming the first jurisdiction globally to introduce unified rules around the use of artificial intelligence. At the

same time, investment in cleantech—spanning sectors like alternative energy, energy storage, carbon capture, and compliance software—continued to rise across all regions. However, it was notably outpaced by the surge in AI investments. The largest cleantech deal in Q2 2024 came from China, where electric vehicle manufacturer Neta Auto raised \$693.3 million, followed by US decarbonization-focused firm Nexamp, which secured \$520 million. In Europe, the UK’s long-duration energy storage provider, Highview Power, raised \$381 million, making it the biggest cleantech deal in the region for the quarter. Interest in defense technology (defensetech) has also been on the rise, with VC investors becoming increasingly drawn to the sector. In the US, several defensetech firms have scaled enough to compete directly with established defense contractors. Smaller defensetech startups are also emerging in places like Australia, India, and the UK. While significant consolidation has yet to take place, we may see larger defensetech firms going public or acquiring smaller companies over the next couple of years. While AI is poised to create vast business opportunities globally, it is also expected to heighten operational risks, particularly those concerning cybersecurity. With AI, malicious actors could become more capable of executing cyber-attacks. As companies seek to safeguard their operations, customers, and data, investments in cybersecurity startups that specialize in mitigating AI-driven risks are likely to grow. Additionally, various regulatory frameworks, such as Europe’s Digital Operations Resilience Act, will likely encourage further investment as businesses aim to better manage their compliance requirements.

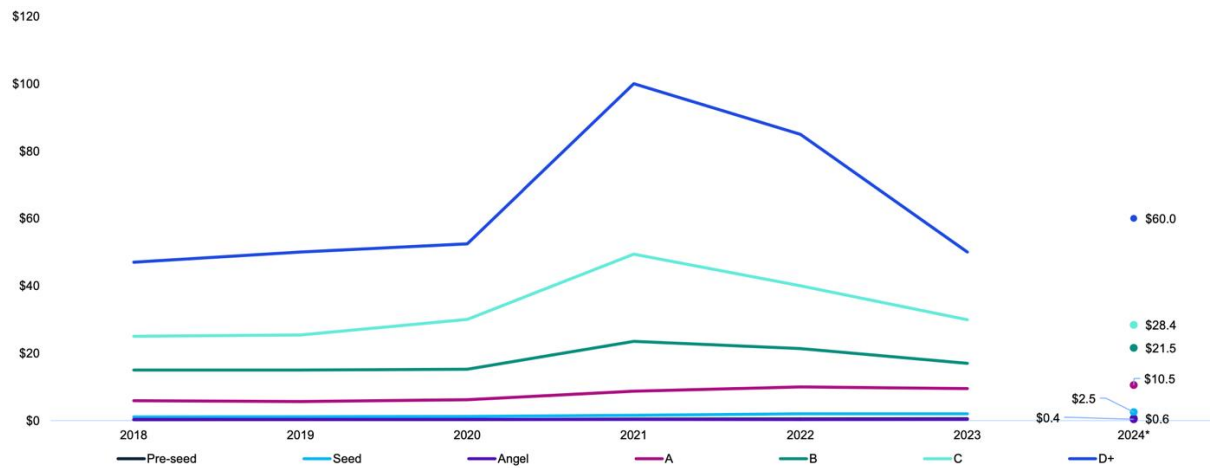


Figura 1: Global Median deal size (\$M) by series

Global series financing results to be healthy but hold steady, it doesn't growth since 2021.

D+ series show a dramatic fall, about 40% less, from the 100mln+ median value of capital invested 2021 to an actual median value of 60 mln. **C series** show a similar trend with a growth in 2021 followed by a fall in 2022 and 2023, with a quite stable trend on 2024 respect the previous year. **Seed e B series** show a more stable trend. Initial phases financing like, **Pre-seed e Angel**, instead stay quite stable with not important variations.

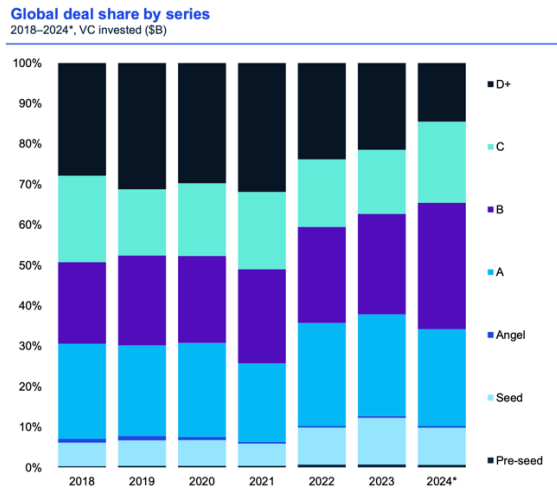


Figura 2: Global deal share by series

A clearer way to analyze these evidence.

VC funds, continues to underpin record valuations at early stages:

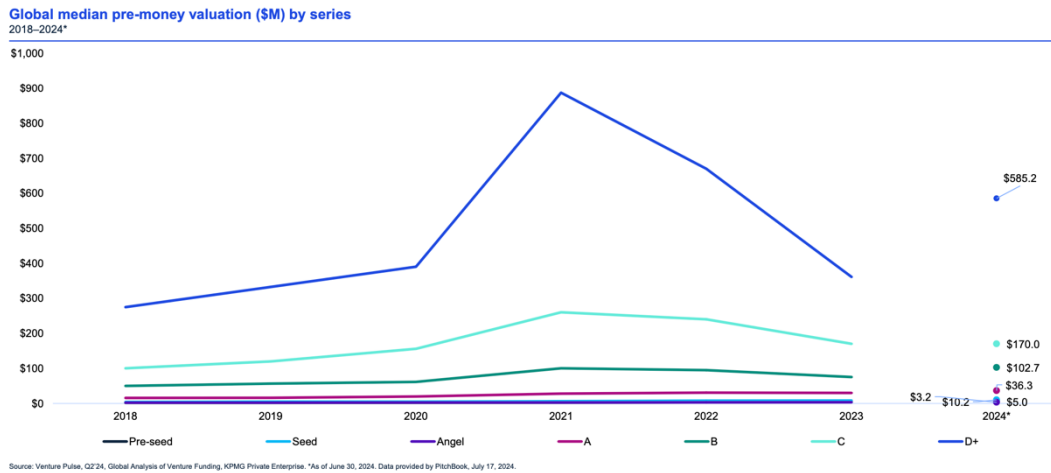


Figure 3: Global median pre-money valuation (\$M) by series

Dry powder justifies overvaluation of startups in the initial phases. This happens because, even in an uncertain or slowing down state of economy periods VC funds keep high volume of money to invest, “dry powder”, this leads to a higher competition among funds to invest on best start-up. This competition pushes on higher valuation on young firms, even if economic environment is not the best.

Exit results

In the second quarter of 2024, the global exit activity for venture-backed companies presented a mixed picture. Acquisitions took the lead, accounting for approximately 85.6% of the total exit value, while initial public offerings (IPOs) remained sluggish. Although Europe saw a few notable IPOs, including those of RanMarine Technology and GreenMerc, the overall exit landscape remained weak. This performance highlights the difficulties faced by VC-backed firms, which are grappling with a lackluster stock market and the cautious approach of limited partners (LPs), who have been hesitant to reinvest in the sector given the current economic conditions.

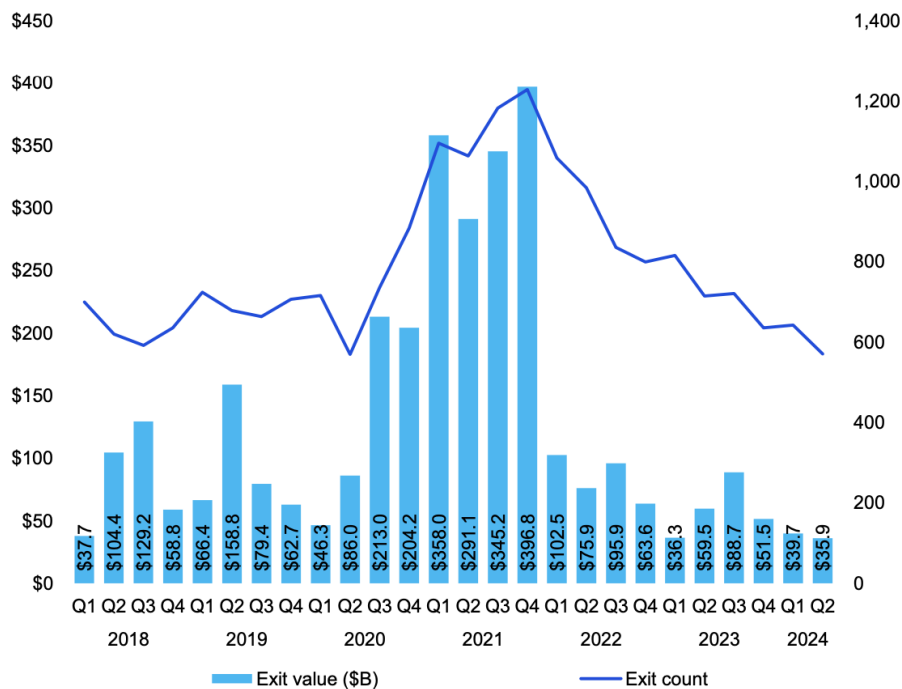


Figure 4: Global Venture-backed exit activity

The graph shows clearly a contraction of the exit activities of venture-backed firms due also to the changes of the market after 2021 to uncertainty of the market and higher risk perceived by investor for future state of economy.

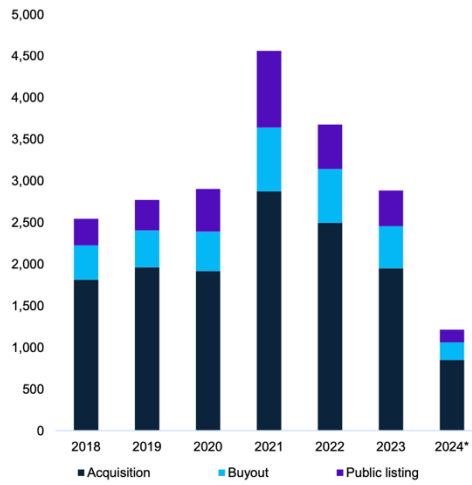


Figure 5: Global Venture-backed exit activity (#) by type

Acquisition remains the best exit strategy also in this market conditions, showing a 80% stake of whole exits.

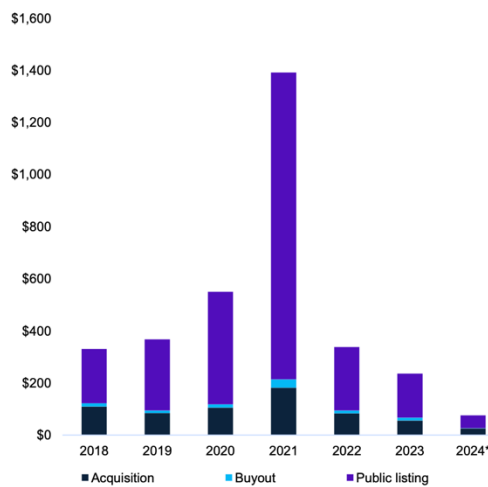


Figure 6: Global Venture-backed exit activity (\$B) by type

IPOs shows a decreasing YoY from 2021, Q3'24 and Q4'24 show weak possibilities, to reverse this trend. This could highlight that market condition are not optimal to allow significant exits through IPO.

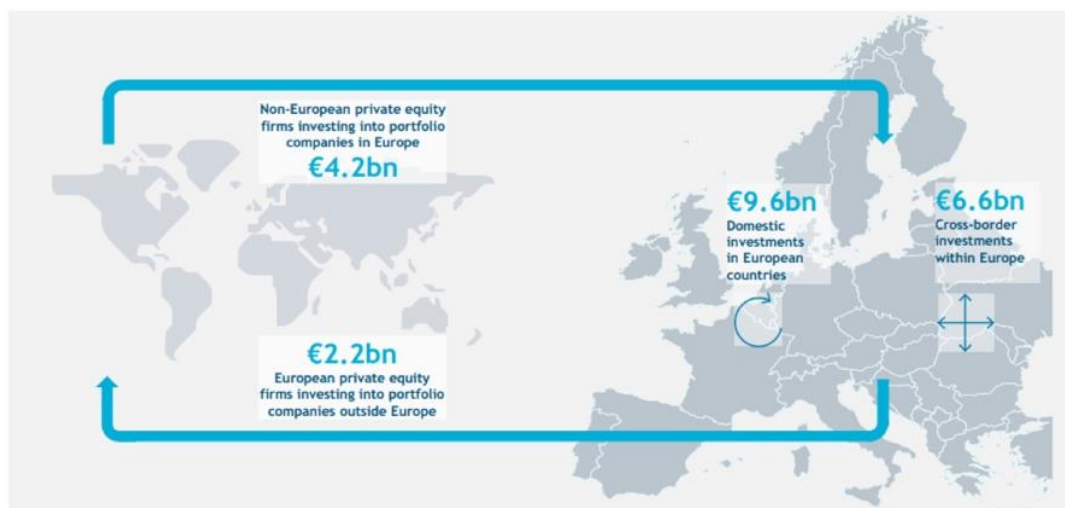


Figure 7: 2021 Geographic VC investment flows over the globe.

This image illustrates the intricate landscape of private equity investment flows, both within Europe and between Europe and the rest of the world. The data showcases how capital is distributed among different regions, highlighting the prominent role of European markets in both attracting and deploying private equity investments.

The largest segment of activity is represented by domestic investments within Europe, totaling €9.6 billion. This indicates that European private equity firms are heavily focused on investing within their own region, reflecting a strong confidence in local markets. This trend highlights the significance of fostering regional development and innovation by keeping capital within Europe, where familiarity with market conditions and regulatory frameworks likely plays a key role in the decision-making process.

Cross-border investments within Europe, amounting to €6.6 billion, further emphasize the interconnectedness of European economies. These investments show that private equity firms are actively looking for opportunities across borders within the region, capitalizing on the shared regulatory environment and proximity. This intra-European investment flow suggests a high level of collaboration between European nations, strengthening the overall cohesion and integration of the continent's economy.

On a global scale, non-European private equity firms are contributing €4.2 billion in investments into European companies. This substantial inflow of capital underscores Europe's strong appeal as an investment destination, whether due to its market size, innovative industries, or perceived stability. The interest from non-European firms in investing in Europe highlights the region's competitive position in attracting international capital, likely due to its established infrastructure and favorable investment conditions.

Conversely, European private equity firms investing outside of Europe is a smaller figure at €2.2 billion, suggesting that while European firms are seeking global diversification, the majority of their focus remains on local opportunities. This outward investment flow shows a selective approach to global expansion, where European firms are pursuing international opportunities but at a lesser scale compared to the investments coming into Europe from abroad.

In summary, the image reflects a robust internal market within Europe, characterized by strong domestic and cross-border investments, alongside significant international interest in European companies. It highlights the strategic role Europe plays both as an attractive hub for foreign investment and as a region with private equity firms that are cautiously expanding globally. This balance of internal and external capital flows demonstrates Europe's critical position in the global private equity market, both as a recipient and a source of investments. For your thesis, this graphic provides a visual representation of Europe's interconnectedness in the private equity space and can serve as a basis for discussing the drivers behind these investment trends, such as market stability, growth potential, and regional cooperation.

3. European VC Market

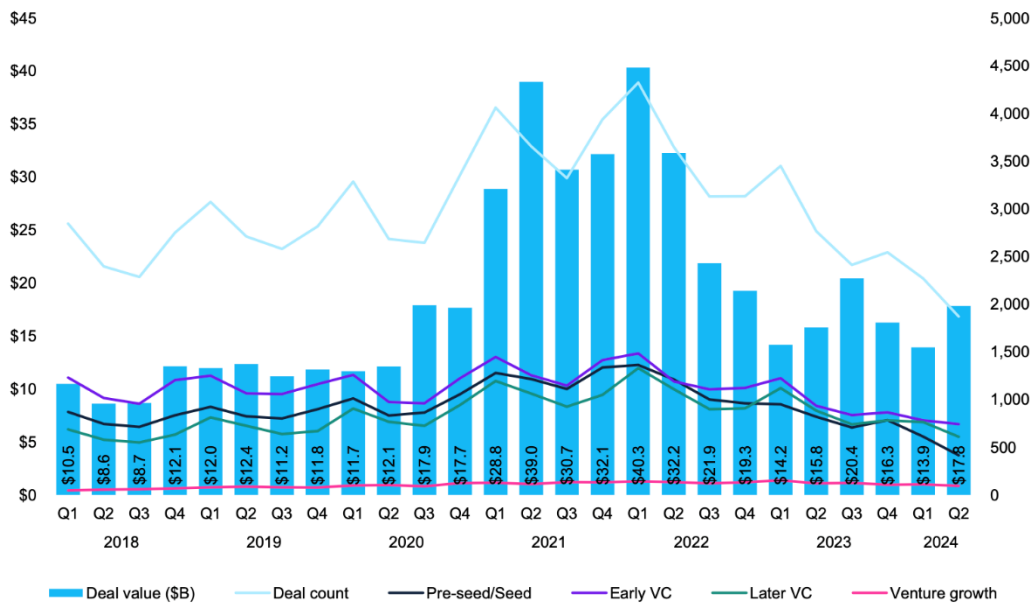


Figure 8: Venture financing in Europe

In the second quarter of 2024, venture capital (VC) investment in Europe saw a significant boost, increasing from \$13.9 billion in the first quarter to \$17.8 billion. This surge was primarily driven by a few major deals, notably the \$1 billion raised by Wayve, an autonomous AI driving company, and the \$999.6 million secured by the consumer lending platform Abound. Other large funding rounds included \$650.6 million for Mistral AI and \$621 million for Monzo, the UK-based neobank.

Artificial intelligence (AI) remained a dominant sector in European VC investment during this period. Alongside the major deals for Wayve and Mistral AI, Germany’s AI-powered language translation company DeepL raised \$300 million, and French automation firm H Company secured \$220 million. AI investments spanned a broad range of businesses, from those developing foundational AI technologies to companies using AI to enhance customer experiences and drive product innovation. This widespread focus on AI underscores its central role in shaping the future of various industries across Europe.

In addition to AI, the alternative energy and cleantech sectors attracted substantial investment in Q2 2024. Among the notable transactions were a \$381.9 million raise

for the UK-based energy storage firm Highview Power and \$168 million for Estonia's Elcogen, a hydrogen-focused company. Tree Energy Solutions, a hydrogen startup from the Netherlands, also raised \$152 million. With increasing regulatory pressures, such as the EU's Carbon Sustainability Reporting Directive (CSRD), investor interest in sustainability-focused regtech firms is rising as companies seek to comply with evolving environmental regulations.

The United Kingdom experienced a major rebound in VC investment in Q2 2024, with total investment more than doubling from \$2.9 billion in Q1 to \$6.9 billion. This marked recovery followed a low point not seen since Q2 2018. The largest deals driving this recovery were Wayve's \$1 billion round, Abound's \$999.6 million raise, and Monzo's \$621 million funding. Although later-stage companies faced difficulties in securing funding, the surge in mega-deals towards the end of the quarter offered a positive outlook. Early-stage investments remained strong, with increasing median deal sizes signaling a heightened interest in pre-seed and seed-stage ventures, as investors sought to mitigate risk by supporting businesses at earlier growth phases.

Meanwhile, optimism is building around the potential reopening of Europe's IPO market in the third quarter of 2024, particularly if economic conditions remain favorable. A key positive signal came from the successful June IPO of Raspberry Pi on the London Stock Exchange (LSE), which raised \$211 million and performed well post-listing. The LSE is also taking steps to support early-stage companies by partnering with Floww to connect start-ups with investors. Additionally, the exchange is exploring new mechanisms like the Private Intermittent Securities and Capital Exchange System (PISCES) to facilitate the intermittent trading of private company shares, further broadening the opportunities for private firms seeking liquidity.

As Europe moves into the third quarter of 2024, there is cautious optimism, tempered by some uncertainties. Key political events, such as the UK general election in July and the U.S. presidential election in November, could dampen investor enthusiasm. However, sectors like AI, energy, and cleantech are expected to continue attracting strong investment. Despite potential headwinds, the

reopening of the IPO market appears likely, and with the EU's Digital Operational Resilience Act (DORA) set to take effect in January 2025, interest in regtech solutions that aid compliance is poised to rise.

Investment sectors in Europe

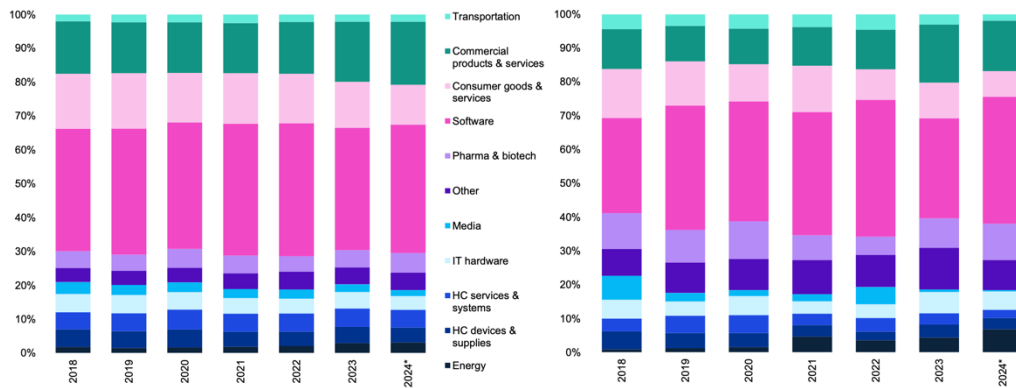


Figure 9: Venture financings by sector in Europe: Number of closed deals (left) and VC invested (\$B) (Right)

This image presents a detailed breakdown of venture capital (VC) financings by sector in Europe, showing trends from 2018 through projections for 2024. The charts capture two critical dimensions: the number of closed deals (on the left) and the volume of VC invested (on the right). The sectors represented include transportation, commercial products and services, consumer goods, software, pharma and biotech, energy, media, IT hardware, healthcare (HC) services and systems, healthcare devices and supplies, and other industries.

Analysis of Closed Deals by Sector (Left Chart)

Looking at the number of closed deals over the years, certain sectors consistently dominate the venture capital landscape. Software, for example, occupies a significant portion of the closed deals each year. Its high and steady presence is indicative of the central role software plays in modern economies, driving innovation across industries like AI, SaaS, and digital transformation initiatives. The continuous demand for software solutions to power digital infrastructure is

evident, and this sector has likely benefited from the accelerated shift to digital brought about by the COVID-19 pandemic and beyond. Consumer goods and services, as well as commercial products and services, also show consistent representation across the years, though slightly less dominant compared to software. These sectors represent companies catering to evolving consumer needs and enterprise services, both of which remain key targets for venture capital. As consumer preferences change and businesses require more specialized products and services, these areas continue to attract a large number of deals. Pharma and biotech, represented by a smaller but steady portion of deals, reflect the sustained interest in healthcare innovation. This sector's significance is increasingly visible post-pandemic, with healthcare and biotech gaining more focus, likely due to the global shift toward healthcare resilience and the development of advanced treatments, vaccines, and biotechnologies. A less consistent presence can be observed in sectors like energy and IT hardware. These industries account for a much smaller share of closed deals, likely reflecting the niche nature of investments in these areas. Energy-related deals, however, are growing in importance due to the increasing focus on sustainability and clean technologies, while IT hardware faces competition from the dominance of software and cloud-based solutions.

Analysis of VC Invested by Sector (Right Chart)

The second chart reveals the distribution of VC invested in each sector over the same period. Here, software continues to command a significant portion of overall investment. This aligns with its dominance in the number of closed deals and its high growth potential. The substantial investment in this sector highlights venture capital's confidence in software companies' ability to scale, innovate, and generate significant returns. Transportation also sees notable levels of VC investment, even though it doesn't occupy as large a portion of closed deals. This suggests that while there are fewer deals in this sector, the companies that do attract investment tend to secure larger funding rounds. This could be attributed to high capital requirements for scaling transportation-related technologies, including electric vehicles, autonomous driving technologies, and logistics innovations. Pharma and biotech attract a relatively large share of the overall capital invested, despite having fewer closed deals compared to sectors like software. This is indicative of the high capital

intensity required for biotech and pharmaceutical research and development. Venture capitalists are often willing to invest heavily in this sector due to the potential for breakthroughs in medical science, which could result in significant financial returns, albeit with higher risks. The consumer goods and services sector, while substantial in terms of closed deals, occupies a smaller portion of the overall VC invested. This suggests that while there are many consumer-focused start-ups receiving funding, the size of each individual deal may be smaller compared to more capital-intensive sectors like transportation or biotech. Energy, although still a relatively small sector in terms of the number of deals, is attracting a growing proportion of venture capital investment. This shift highlights the rising importance of alternative energy sources and the growing regulatory and market pressures for sustainability. As the global focus on green technologies and clean energy intensifies, this sector is likely to see an increase in both the number of deals and total capital invested.

Software Dominance: Both the number of closed deals and the volume of capital invested highlight the dominance of the software sector in European venture capital. The continuous growth in digital transformation and the demand for scalable tech solutions ensure that software remains a prime area for venture capital.

High-Capital Sectors: Sectors like transportation and pharma/biotech, though involved in fewer deals compared to software, attract larger investments. These industries require high levels of capital due to the complex nature of the technologies being developed, whether it's autonomous driving, advanced medical treatments, or new transportation systems.

Emerging Importance of Energy: While energy remains a relatively small player in terms of deal volume, its share of total capital is growing, reflecting the rising priority of sustainability, green technology, and climate-friendly innovations.

Diversity in Consumer-Focused Sectors: Consumer goods and services, as well as commercial products and services, consistently attract a large number of deals, though with smaller individual investments. This likely reflects the wide array of start-ups and enterprises targeting niche consumer markets, with VC funding spread across many smaller ventures rather than concentrated in a few large firms.

Deal size and analysis

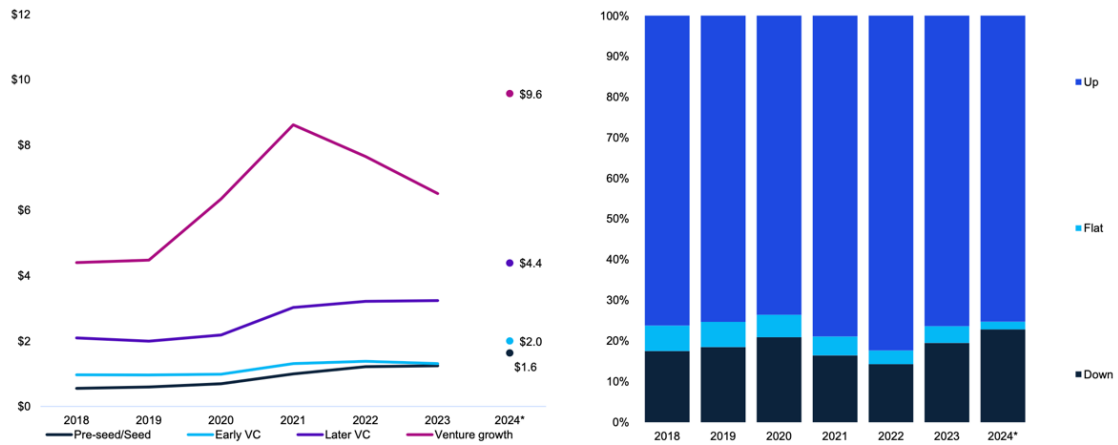


Figure 10: Median deal size (\$M) by stage in Europe (left) - Up, Flat or down rounds in Europe (Right)

The graphs reported above provides insights into the median deal sizes at various venture capital stages in Europe from 2018 through projected figures for 2024 (left chart) and the proportion of up, flat, or down funding rounds during the same period (right chart). Together, these charts offer a comprehensive view of the evolving investment landscape in European venture capital, helping to identify trends in deal sizes and the overall sentiment in the market as measured by funding round performance.

Analysis of Median Deal Size by Stage in Europe (Left Chart)

The left chart tracks the median deal size (in millions of USD) across different stages of venture capital investment: Pre-seed/Seed, Early VC, Later VC, and Venture Growth. Venture growth stages, typically involving more mature companies, consistently exhibit the highest median deal sizes throughout the timeline. Between 2020 and 2021, we observe a notable peak where median deal sizes for this stage reached approximately \$10 million. This likely reflects the

increasing demand for later-stage companies, which are perceived as lower-risk and offer more predictable returns. While the median size for venture growth deals has decreased somewhat by 2024, they still remain considerably higher than earlier-stage investments, standing at \$9.6 million in the projections for 2024.

The median deal size for later VC stages demonstrates a steady increase from 2018 onwards, peaking in 2022 at \$4.4 million. This suggests that even at the later VC stage, companies were able to command significant capital injections, possibly due to their proven business models or established market presence. Although there's a slight reduction projected for 2024, later VC stages still represent a significant share of venture capital allocations in Europe.

Early VC deal sizes, while consistently smaller than later-stage rounds, show a more gradual increase from \$2 million in 2018 to about \$2.4 million by 2023. This incremental growth reflects sustained interest in early-stage ventures, though with more caution in capital allocations compared to more mature companies.

Pre-seed/Seed deal sizes remain relatively modest, hovering around \$1.6 million throughout the observed years. This stability suggests that seed-stage companies, which are typically in the product development or market-testing phases, continue to attract capital but on a smaller scale, reflecting the higher risk associated with such early ventures.

The overall trend suggests that median deal sizes across all stages have generally increased over the years, particularly from 2020 onwards. This surge could be attributed to the growing appetite for venture capital during the pandemic recovery phase, as well as the increased availability of capital in the market. While deal sizes are showing signs of stabilization in the projected figures for 2024, they remain higher than pre-2020 levels, highlighting the continued confidence in European start-ups and scale-ups.

Analysis of Up, Flat, or Down Rounds in Europe (Right Chart)

The right chart illustrates the proportion of venture rounds that were categorized as up, flat, or down rounds from 2018 through 2024. A dominant feature of the chart is the overwhelming prevalence of up rounds, where companies raise capital at a

higher valuation compared to their previous funding rounds. Over 80% of all rounds are up rounds, reflecting a consistently positive sentiment in the European venture capital market. The proportion of up rounds has remained strong throughout the timeline, even during periods of global uncertainty such as the COVID-19 pandemic. This suggests that investors remain optimistic about the growth potential of European startups, with many companies achieving higher valuations as they scale. Flat rounds, where valuations remain unchanged compared to previous funding, represent a much smaller portion of total funding rounds. However, the proportion of flat rounds slightly increased in 2021 and 2022, which could be attributed to the uncertainties surrounding market recovery after the pandemic. Investors may have been more cautious during these years, leading to more companies accepting flat valuations rather than pursuing aggressive growth. The share of down rounds, where companies raise capital at a lower valuation than in previous rounds, remains consistently low across the years. This indicates that very few companies experienced a decline in valuation during this period, reinforcing the narrative of strong growth and market confidence in European ventures. While down rounds do increase slightly in 2022 and 2023, they still represent a minority of the total rounds, suggesting that even in a potentially cooling market, the majority of startups continued to secure higher or flat valuations.

Increase in Deal Sizes: Across all stages, the median deal sizes have generally increased from 2018 to 2022, with venture growth rounds showing the highest increases. This suggests that the venture capital landscape in Europe is maturing, with more capital being deployed into later-stage companies as they scale. Even early-stage investments have seen modest growth in deal sizes, reflecting sustained interest and confidence in new ventures.

Predominance of Up Rounds: The high proportion of up rounds over the years signals a consistently optimistic venture capital environment in Europe. Investors are clearly willing to provide higher valuations to companies that demonstrate growth potential, which bodes well for the health of the start-up ecosystem.

Market Resilience: Despite the global challenges faced during the pandemic, the European venture capital market has remained robust. The dominance of up rounds

and the relatively low number of down rounds indicate that European start-ups have been able to weather economic uncertainties and maintain or grow their valuations.

Caution Moving Forward: While projections for 2024 show continued growth in deal sizes and optimism in valuations, there is some indication of a cooling market compared to the highs seen in 2021 and 2022. The slight increase in flat and down rounds suggests that the market could face headwinds, possibly due to macroeconomic factors such as inflation, geopolitical tensions, or investor caution.

In conclusion, the image provides a comprehensive snapshot of venture capital activity in Europe, highlighting growth in deal sizes across various stages and sustained market optimism as demonstrated by the prevalence of up rounds. It underscores the resilience of the European venture capital ecosystem while also pointing to potential shifts in investor sentiment moving forward.

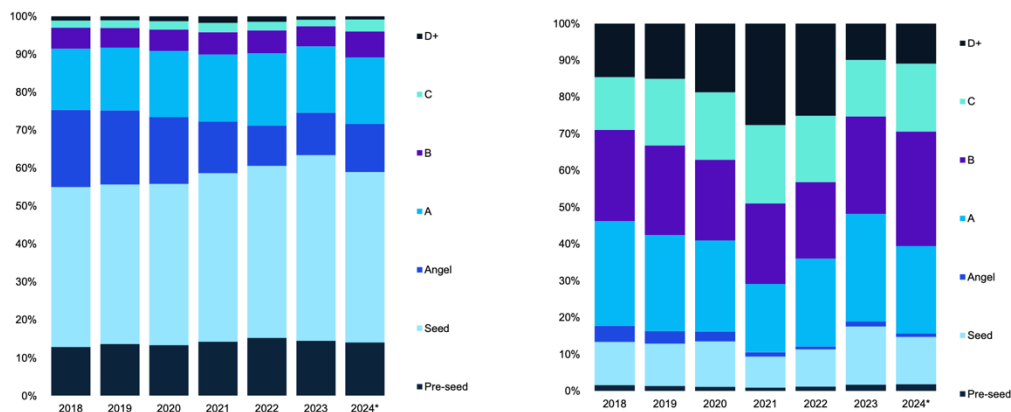


Figure 11: Deal share by series in Europe: Number of closed deals (Left) , VC invested (\$B) (Right)

A breakdown of deal shares by series in Europe from 2018 through projections for 2024. The left chart shows the number of closed deals across various funding stages, while the right chart illustrates the venture capital (VC) invested across those same stages. The stages include Pre-seed, Seed, Angel, Series A, Series B, Series C, and Series D+ rounds.

Analysis of Deal Share by Series in Europe (Number of Closed Deals - Left Chart)

The left chart outlines how the number of closed deals is distributed across different funding stages from 2018 to 2024. Several key trends are noticeable:

Throughout the observed period, pre-seed and seed deals consistently account for a substantial portion of the overall deal count. In the earlier years (2018-2020), these stages dominate the market, reflecting a high volume of early-stage investments. This suggests that the European venture capital ecosystem has been highly supportive of nascent startups, providing the initial capital required to develop ideas into viable business models. However, there is a noticeable decline in pre-seed and seed deal share from 2021 onwards, particularly in 2022 and the projections for 2024. This shift may indicate a more cautious approach by investors or a maturing market where fewer but higher-quality early-stage deals are being pursued.

Business Angel and Series A Deals: The share of angel and Series A deals also remains strong over the years, though not as dominant as seed-stage deals. This reflects the ongoing interest in early-stage companies with proven concepts that are ready to scale. The relative stability of these stages in terms of deal share demonstrates the importance of angel investors and Series A funding in bridging the gap between initial idea validation and larger-scale venture capital.

Later-Stage Deals (Series B, C, and D+): Starting in 2021, there is a significant increase in the share of later-stage deals (Series B, C, and D+), suggesting a growing emphasis on scaling and expanding established companies. By 2022, these stages represent a larger proportion of closed deals compared to previous years. This could reflect the maturation of Europe's startup ecosystem, where companies are no longer just in the early stages of development but are attracting funding to expand rapidly or dominate markets. The growth in later-stage deals also suggests that more startups are successfully progressing beyond the early stages of funding and securing follow-on investments, a sign of a healthy and maturing venture capital landscape.

Analysis of Deal Share by Series in Europe (VC Invested - Right Chart)

The right chart shows the distribution of venture capital invested across the same series from 2018 to 2024. Here, we see significant differences compared to the number of deals, reflecting how investment sizes increase as companies move through successive funding stages. While pre-seed and seed deals account for a

large number of closed deals, their share of total capital invested is considerably smaller. This is to be expected, as early-stage investments typically involve smaller sums of money. The decline in the proportion of capital allocated to pre-seed and seed stages from 2021 onwards mirrors the decreasing number of deals in these stages, suggesting that investors may be focusing their capital on later-stage opportunities with potentially larger returns. Series A deals represent a more significant share of total VC invested compared to pre-seed and seed stages. This shows that while there may be fewer Series A deals overall, these rounds tend to involve larger amounts of capital. The steady share of Series A investment indicates that venture capitalists are continuing to back companies that have moved beyond initial product-market fit and are now scaling their operations. Later-Stage (Series B, C, and D+) Investment: The most striking trend in the right chart is the dominance of later-stage investments (Series B, C, and D+) in terms of total capital allocated, particularly from 2021 onwards. By 2022 and in the projections for 2024, Series B and D+ investments account for the largest share of capital deployed. This trend reflects the growing importance of later-stage rounds as companies scale and require larger amounts of capital to expand into new markets, increase production, or enhance their technology. The surge in later-stage investment is a sign that Europe's venture capital ecosystem is increasingly focused on supporting high-growth companies that are moving beyond the startup phase and into substantial growth trajectories.

Both charts reveal a clear shift in focus toward later-stage deals (Series B, C, and D+) from 2021 onwards. In terms of both deal volume and capital allocation, these later stages have become increasingly important, signaling a maturing venture capital ecosystem in Europe where more companies are successfully scaling and raising larger rounds of funding. While pre-seed and seed deals represented the majority of closed deals in the earlier years, their relative share has declined as the market has matured. This could indicate more selective investment in early-stage companies or a focus on backing startups with a proven track record. Nevertheless, early-stage funding remains an essential component of the venture capital landscape, particularly for nurturing new ideas and fostering innovation. The growing share of capital invested in later-stage deals reflects the increasing capital

needs of companies that have moved beyond the early stages and are looking to scale. Investors are committing more significant sums to these companies, which may offer lower risks compared to earlier-stage ventures and have greater potential for large returns. Overall, the charts suggest that European venture capital is increasingly balancing investments between nurturing early-stage startups and providing substantial capital to growth-stage companies. This balance is crucial for maintaining a healthy innovation pipeline while also supporting the scalability of successful startups.

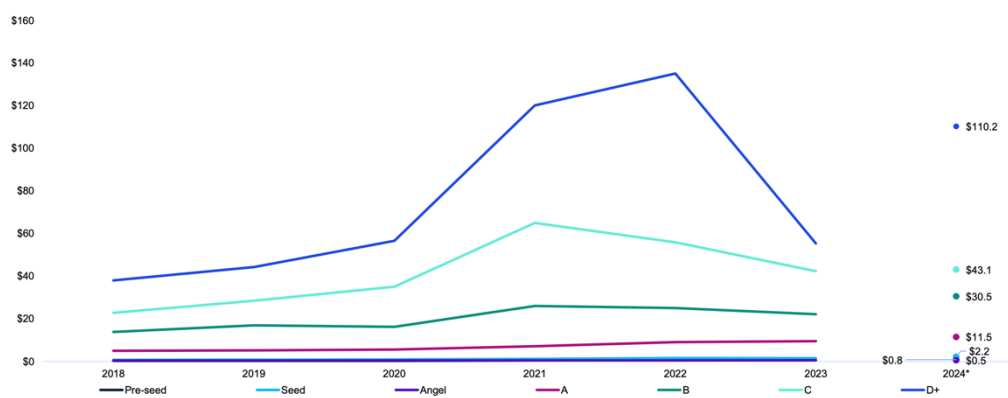


Figure 12: Median deal size (\$M) by series in Europe

It's useful also to highlight the trends in venture capital investments across different funding stages, including Pre-seed, Seed, Angel, Series A, Series B, Series C, and Series D+. The chart provides valuable insights into how median deal sizes evolve as companies progress through successive funding rounds.

Pre-seed and Seed deal sizes remain relatively small throughout the observed period. The median deal size for Pre-seed stays under \$1 million, while Seed rounds reach around \$2 million in 2024. These early-stage investments, which are typically aimed at very young companies still refining their products or market fit, show little fluctuation in deal size over the years. The consistency in these smaller amounts reflects the higher risk profile of early-stage investments and the relatively modest capital required to support start-ups at the earliest stages of development. While larger deal sizes might occasionally be seen in specific sectors or regions, the relatively low median sizes suggest that these rounds remain modestly funded across Europe.

Angel investments see only slight variation over the years, with median deal sizes growing from around \$1.5 million in 2018 to just over \$2 million in 2024. The Angel stage is crucial for bridging the gap between Seed funding and institutional venture capital, and the slow increase in deal size suggests a cautious but steady rise in investor confidence during this phase. Angel investors often provide capital that allows companies to prepare for larger venture capital rounds, but the comparatively small amounts reflect their focus on smaller, early-stage companies.

The median deal size for Series A rounds shows a steady increase from around \$11.5 million in 2018 to \$30.5 million by 2024. This growth highlights the increasing capital required for companies transitioning from product development to scaling their operations. Series A funding often marks the point where companies have proven their concept and are ready to expand, and the rising deal sizes reflect the growing ambitions of start-ups in Europe at this stage. The significant jump in Series A deal size is also indicative of the competitive nature of this phase, where successful companies attract larger sums to fuel faster growth. Investors at this stage are betting on companies with a demonstrated market fit and substantial potential for scaling, leading to a willingness to invest larger amounts of capital.

Series B rounds see a dramatic rise in median deal size, reaching a peak of \$140 million in 2021 before dropping back to \$110.2 million in 2024. This stage typically represents companies that are expanding rapidly, often into new markets or increasing production capabilities. The sharp increase in deal size over the observed years suggests that European venture capital investors are supporting companies with significant growth potential, especially those positioned to become market leaders. The decline after 2021 could reflect a broader market correction or a shift in investor strategy, with some moving towards more cautious investments after the rapid growth seen in previous years. Even with the decrease, Series B rounds still command large sums, underscoring the need for substantial capital to scale operations and enter new markets.

Series C rounds show a peak in median deal size of \$43.1 million in 2021, followed by a slight decline in 2023 and 2024 to just over \$30 million. Companies reaching this stage are typically preparing for further expansion or are seeking capital for

acquisitions, product development, or international scaling. The decline in Series C deal size might indicate increased scrutiny or caution from investors as companies become more established. These rounds often come with higher expectations of financial performance and lower tolerance for risk, which could explain the slight reduction in deal size in recent years.

Series D+ rounds display the highest volatility, with median deal sizes peaking at \$140 million in 2021 before dropping to around \$50 million in 2024. Series D and later rounds often represent companies that are nearing initial public offerings (IPOs) or other liquidity events, and the large deal sizes reflect the significant capital needed to sustain their growth at such an advanced stage.

The steep rise and subsequent drop could be due to a few outliers in the data, where exceptionally large rounds in certain years skew the median upward. The decline in later-stage funding in 2024 could suggest that fewer companies are raising such large rounds, possibly due to a tightening in the market or a focus on earlier-stage opportunities with higher growth potential.

Pre-seed, Seed, and Angel investments show modest growth in deal sizes, reflecting the stable but cautious approach investors take when supporting early-stage startups. The limited growth in these smaller rounds suggests that the European venture capital ecosystem remains focused on high-risk but lower-capital early-stage ventures. The sharp rise in Series A and B deal sizes highlights the growing appetite for investing in companies that have proven their business models and are ready to scale. This phase is where investors see the greatest potential for returns, which is why the deal sizes increase so substantially. The decline in Series B, C, and D+ deal sizes after peaking in 2021 suggests a market correction or a shift in investor sentiment. As companies mature and reach later stages, the competition for capital might decrease, or investors might be more cautious about overfunding at such advanced stages. The peak in 2021 across multiple stages, followed by a decline in subsequent years, may reflect macroeconomic factors influencing the venture capital landscape. The economic uncertainty brought by the pandemic and the

subsequent recovery likely influenced investment behavior, with 2021 seeing record deal sizes before cooling off in the following years.

Exit analysis

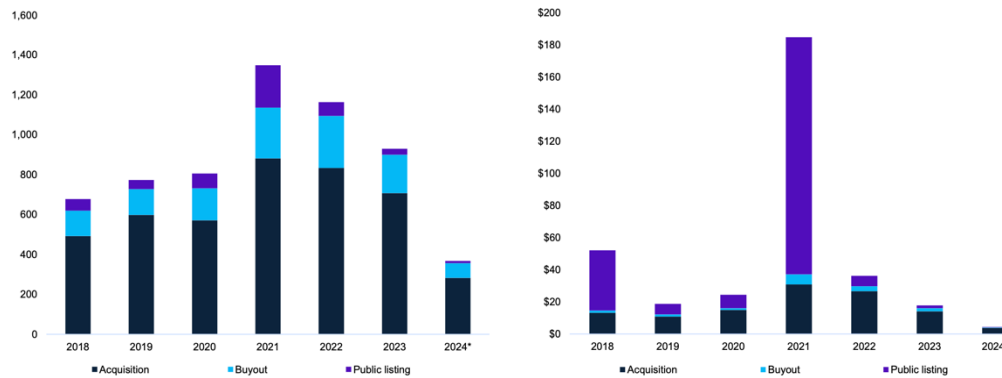


Figure 13: Venture-backed exit activity (#) by type in Europe (Left) - Venture-backed exit activity (\$B) by type in Europe (Right)

An analysis of venture-backed exit activity in Europe from 2018 to 2024, categorized by the type of exit (acquisition, buyout, and public listing) is also fundamental to fully understand how proceeds and investment return come from. The left chart tracks the number of exits over time, while the right chart details the total value of these exits in billions of dollars. Together, these charts offer a comprehensive view of exit strategies for venture-backed companies, as well as the financial significance of each exit type.

Analysis of Venture-Backed Exit Activity by Type (Number of Exits - Left Chart)

Acquisitions consistently make up the majority of exits throughout the observed period, highlighting that this remains the most common exit strategy for venture-backed companies in Europe. From 2018 through 2022, the number of acquisitions

increases steadily, peaking in 2022 with over 1,000 deals. This suggests that many venture-backed firms are targeted by larger companies seeking to acquire innovative technologies, products, or market share. The relative stability of acquisitions as an exit strategy underscores its importance as a reliable path for investors seeking liquidity. However, the number of acquisitions declines in 2023 and further in the projections for 2024, which may indicate a cooling market for M&A activity or fewer mature companies reaching the acquisition stage. Buyout activity, where a venture-backed company is purchased entirely by a private equity firm or another investor, is a smaller but significant part of the exit landscape. The number of buyouts shows moderate growth between 2018 and 2021, reaching a peak in 2021. This uptick likely reflects an increase in private equity interest in mature start-ups with strong potential for further growth. However, buyout numbers decrease in 2023 and are projected to remain modest through 2024. Public listings, or initial public offerings (IPOs), represent the smallest share of exits in terms of number but are a critical component of the exit market. Notably, the number of public listings spikes in 2021, a year that saw a surge in IPO activity as markets rebounded from the pandemic and companies sought to capitalize on favorable conditions. After the peak in 2021, the number of public listings drops sharply in 2022 and continues to decline in the following years, suggesting that public markets have become less favorable for venture-backed exits.

Analysis of Venture-Backed Exit Activity by Type (Total Value - Right Chart)

The right chart illustrates the total value of exits by type in billions of dollars. This chart emphasizes not only the volume of exits but also their financial significance. Despite representing the smallest number of exits, public listings generate the largest total value. The most dramatic spike occurs in 2021, when the value of public listings surpasses \$180 billion. This reflects the strong demand for IPOs during this period, fueled by high investor confidence, booming markets, and companies achieving record valuations. Public listings offer venture capitalists the opportunity for significant returns, especially when companies are able to go public at premium valuations. However, the value of public listings plummets after 2021, with a sharp drop in 2022 and minimal projected activity in 2024. This decline likely reflects a shift in market conditions, with rising interest rates, inflation, and

market volatility making IPOs less attractive or feasible for many companies. In contrast to the spike in public listing value, the value of acquisitions grows more steadily over the years, peaking in 2022 at around \$50 billion. Acquisitions remain a critical exit strategy, though they typically generate lower returns compared to IPOs. The stability of acquisition values over time suggests that even when IPO markets cool, M&A activity remains a reliable exit strategy for many venture-backed companies. In 2023 and the projections for 2024, the value of acquisitions begins to taper off, which aligns with the reduction in the number of acquisition exits. Buyouts account for a relatively small portion of total exit value, though they do see some growth in the years leading up to 2021. The total value of buyouts peaks in 2021 but remains significantly lower than that of public listings or acquisitions. Buyouts are typically structured to allow investors to achieve returns through future value creation rather than immediate liquidity, which may explain the smaller overall financial impact compared to the other exit strategies. The projected figures for 2024 suggest a continued decline in buyout activity, both in terms of number and value.

Takeaways

IPO Boom in 2021 Followed by a Sharp Decline: The most striking trend across both charts is the explosion in IPO activity in 2021, both in terms of the number of listings and the total value generated. This year marked a high point for public listings as markets experienced unprecedented growth, allowing venture-backed companies to achieve significant valuations. However, this surge was short-lived, with both the number and value of public listings dropping sharply in subsequent years. The volatility in public markets and rising economic uncertainties likely contributed to this decline. Acquisitions are consistently the most common exit route for venture-backed companies, both in terms of volume and value. The steady growth in acquisition numbers and the relatively stable value generated by these deals suggest that acquisitions remain a key part of the venture capital landscape in Europe. As venture-backed companies mature, they are frequently targeted by larger companies looking to acquire innovative products or technologies. Buyouts represent a smaller but important part of the exit market, with moderate growth observed before peaking in 2021. While buyouts are less frequent than acquisitions,

they provide an alternative exit strategy, especially for companies that may not be suited for public markets. The decline in buyout numbers and value post-2021 indicates a reduction in private equity interest in venture-backed companies, possibly reflecting broader market trends. The sharp rise and subsequent fall in public listing activity highlights the sensitivity of the venture-backed exit market to broader economic conditions. In favorable economic climates, IPOs can generate massive returns for investors, but when conditions become less predictable, companies and investors may turn to more stable exit routes, such as acquisitions.

4. Economic impact of VCs

How VC investments vary by GDP in Europe

Make this analysis helps to contextualize how much venture capital is being invested in each country relative to the size of its economy, offering insights into the intensity of venture capital activity and its significance within national economies.

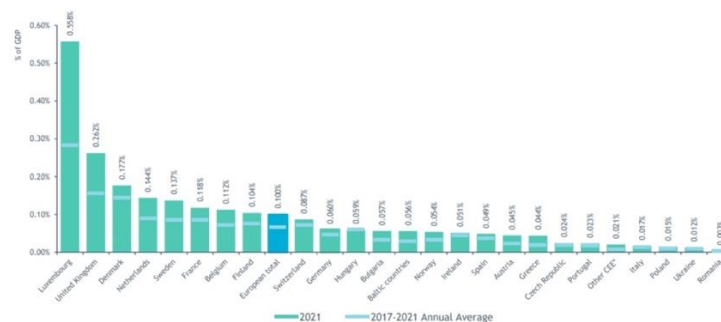


Figure 14: VC investments as % of GDP

This image presents data on venture capital (VC) investments as a percentage of Gross Domestic Product (GDP) across different countries for the year 2021, alongside the annual average for the period 2017-2021.

Luxembourg stands out as the country with the highest VC investments relative to its GDP, with 0.61% in 2021. This represents a significant commitment to venture capital activity. Luxembourg's high ranking could be attributed to its favorable

financial environment, regulatory frameworks, and its role as a global financial hub, making it an attractive destination for venture capital firms despite its small size.

Sweden follows with 0.27% of GDP in venture capital investments, reflecting its strong startup culture and thriving tech ecosystem. Sweden is home to many successful start-ups and scale-ups, particularly in the technology sector, which likely contributes to its high percentage of venture capital relative to GDP.

The Netherlands, Finland, and France also show substantial venture capital activity, with VC investments ranging between 0.17% and 0.21% of GDP in 2021. These countries are recognized for their strong ecosystems for innovation, tech startups, and supportive government policies that encourage entrepreneurship and investment.

Countries such as Germany, Belgium, and the UK fall in the middle range, with venture capital investments between 0.10% and 0.14% of GDP. For Germany and the UK, these figures reflect significant venture capital activity in larger economies where the overall GDP is high, meaning that while the percentage of GDP invested may be smaller, the absolute value of venture capital investments is likely quite large.

Spain, Italy, and Austria show lower levels of VC activity relative to their GDPs, with percentages around 0.07% to 0.10%. While these countries have active startup scenes, their venture capital intensity appears to be somewhat lower, which could be due to a combination of factors such as market maturity, regulatory environments, and overall economic structures that might not be as venture-friendly compared to the leading nations, but a better analysis will follow on this matter.

Toward the bottom of the chart, Portugal, Poland, and Greece have lower VC investments as a percentage of GDP, falling below 0.06%. These figures suggest that venture capital is not yet a major force in these economies. This could be due to various factors, including smaller startup ecosystems, less access to capital, or more conservative investment climates in these regions. Other countries like Romania, Slovenia, and Slovakia have minimal VC activity, with percentages near or below 0.02%. This points to underdeveloped venture capital markets or emerging

start-up ecosystems where the venture capital industry has yet to gain significant traction.

Luxembourg is a clear leader in venture capital intensity, with investments making up 0.61% of its GDP in 2021. This suggests that Luxembourg is highly committed to fostering a venture capital ecosystem despite its small economy, likely due to its strategic role as a financial center.

Northern and Western European countries, particularly Sweden, the Netherlands, Finland, and France, are consistently strong performers in terms of venture capital investment as a percentage of GDP. These countries benefit from well-developed start-up ecosystems, strong government support for innovation, and robust venture capital infrastructure.

Moderate performers such as Germany and the UK continue to be strong players in venture capital investment, but the lower percentage relative to GDP may reflect the larger size of these economies, where venture capital represents a smaller fraction of total economic output despite being significant in absolute terms. Southern and Eastern European countries, including Portugal, Poland, Greece, and Romania, show lower levels of venture capital investment relative to their GDP, pointing to emerging or less mature venture capital ecosystems. These countries may require more structural and policy support to strengthen their start-up environments and attract more venture capital investment.

Economic impact in a country

As it is reported on Will Gornall and Ilya A. Strebulaev's paper in collaboration with British Columbia University and Stanford University "The Economic Impact of Venture Capital: Evidence from Public Companies" it is possible to deduce that Venture capital plays a transformative role in the economic framework of a country, touching upon several key aspects such as job creation, GDP growth, innovation, and broader economic development. By focusing on startups with high growth potential, particularly in innovative and emerging sectors, venture capital drives employment opportunities, especially in fields that demand high-level skills like technology, biotechnology, and renewable energy. Startups backed by VC typically have the capacity to expand at a rapid pace, necessitating increased hiring. This

dynamic leads to a reduction in unemployment, primarily in knowledge-intensive sectors, and has a cascading effect, as job creation in these areas tends to boost demand in related industries like services and consumer products. Furthermore, the impact of venture capital on a country's GDP is significant. Startups funded by VC tend to experience faster growth, greater efficiency in scaling operations, and heightened innovation. This combination leads to improved productivity and overall value creation. Notably, companies that receive venture capital investment often contribute more to GDP growth than those without such backing. For example, early investments in now-major corporations like Google, Facebook, and Amazon illustrate the profound long-term benefits that VC can have on both industry development and the global economy, as these firms have added billions in value and reshaped markets. When it comes to driving innovation, venture capital is a powerful catalyst. Startups supported by VC frequently invest substantial resources into research and development (R&D), spurring advancements in technology and the creation of new products. This not only strengthens the competitive position of a country's economy but also generates spillover benefits, where innovations from VC-backed firms can stimulate progress in other industries, contributing to overall economic dynamism and growth. However, venture capital also has implications for wealth distribution and income inequality. The rapid growth of successful startups creates significant wealth for founders, employees, and investors. While this can drive economic progress, it also risks increasing the disparity between high-income sectors, such as technology, and lower-income areas of the economy. Without proper policy frameworks aimed at ensuring that the benefits of VC are widely shared, the economic advantages may be unevenly distributed. In conclusion, venture capital is a driving force in economic growth, job creation, and innovation. Its influence extends beyond the firms it directly supports, contributing to broader economic development. Nonetheless, to ensure that these benefits are inclusive and contribute to a more equitable society, it is essential that public policy aligns with VC activity, fostering a balance between growth and equality.

5. Italian Venture Capital

Latest market trends

In recent years, Italy's venture capital (VC) market has shown remarkable growth, driven by shifts in market dynamics, evolving consumer needs, and favorable economic conditions. Investors are increasingly drawn to tech-focused startups with strong growth potential, highlighting a trend toward digital transformation and industry disruption. The **Italian venture capital ecosystem** has benefited from government initiatives, including tax incentives for both investors and startups.

Investors, whether individuals or companies, can enjoy substantial tax breaks—up to 30% of their invested amounts—when backing innovative startups and small to medium-sized enterprises (SMEs). This applies not only to direct investments but also to contributions made through venture capital funds with a focus on these budding businesses. Additionally, the Smart&Start Italy initiative plays a pivotal role by offering interest-free loans covering a significant portion of project costs, with special terms that can reach 90% funding for startups led by women, young entrepreneurs, or returnee researchers. For startups located in regions such as the South or designated areas like the “Seismic Crater,” further grants are available, adding layers of financial cushioning. Beyond funding, Italy’s policies include facilitating modern investment methods such as equity crowdfunding. Moreover, startups benefit from tax-deductible stock options and equity-based remuneration schemes that can attract and retain talent by giving employees and consultants a stake in the company’s success. These initiatives collectively create a fertile environment where innovative startups can thrive, helping Italy’s entrepreneurial ecosystem become more competitive and dynamic. These policies, along with favorable macroeconomic conditions, have boosted investor confidence, leading to increased funding opportunities. As a result, Italy has attracted both domestic and international players, further strengthening the market. However, despite this growth, challenges remain. While projections suggest that capital raised could reach \$363.5 million by 2024, the market faces obstacles such as limited access to capital and the need for a stronger support system for startups. Early-stage investments, which are expected to dominate the market, show a continued upward trend, though

there has been a slight decrease in the number of funding rounds compared to previous years. Nonetheless, overall investment in innovative Italian startups continues to rise, reflecting growing interest both within Italy and from abroad. The first half of 2024 saw some mixed results, with fewer operations but higher total investments compared to the previous year. Key deals, such as €100 million for D-Orbit and €140 million for Bending Spoons, helped boost total investment to €870 million, up from €689 million in 2023. **While the number of funding rounds decreased, the amount invested has grown, indicating a trend toward fewer but larger deals.** However, addressing the challenges of limited capital and enhancing the startup support ecosystem will be crucial to sustaining this growth. Additionally, the return of skilled professionals who gained experience abroad is transforming the Italian business landscape. These individuals bring valuable expertise and a global perspective, introducing innovative strategies and management practices that are helping modernize the economy. An example of this is Rialto Ventures, a fund that blends an American "hands-on" approach with a deep understanding of the Italian market. By providing strategic mentorship and access to global networks, Rialto Ventures illustrates how venture capital can drive long-term success, positioning Italy's startups for global growth.

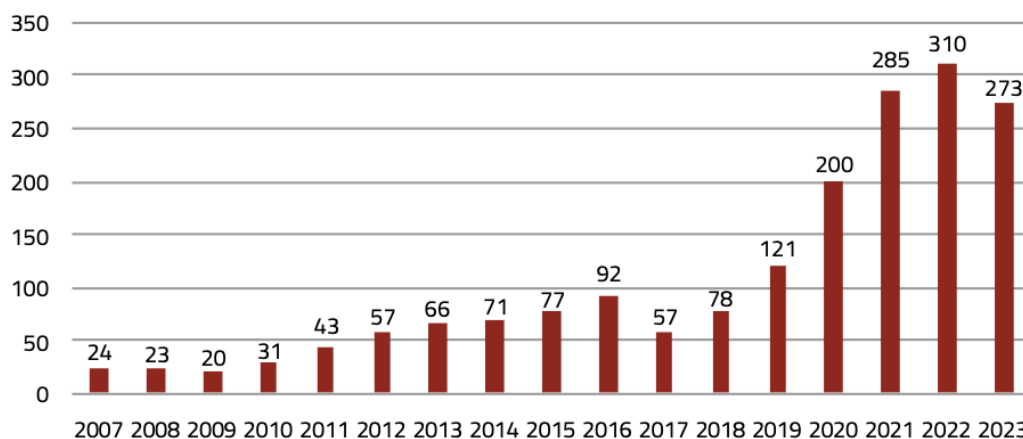


Figure 15: VC Investments (#) in Italy over years

In 2023, a total of 273 new transactions were completed, reflecting a 12% drop compared to the 310 deals closed in 2022 (285 in 2021). This marks a shift from the growth pattern observed in previous years. The number of active investors, including both Lead and Co-Investors, stood at 303, nearly the same as the 308

recorded in 2022. Additionally, this figure includes Business Angels and private investors who invest independently rather than through clubs or formal entities. In total, these investors completed 622 individual deals, up from 591 in 2022. On average, each investor made 2.1 investments, a slight increase compared to 1.9 in the prior year. Excluding Business Angels who invest personally, the top 10 investors were responsible for 28% of total deals, down from 34% in the previous year. Regarding the origin of these investors, foreign participants accounted for 28% of the total individual deals, a slight rise from 24% in 2022 (14% in 2020). This indicates a sustained interest from foreign investors in the Italian market. **Risk diversification improved slightly compared to 2022, with 60% of transactions conducted through syndication, where multiple investors from various sectors participated in the same deal.** Business Angels and private investors, including those using Equity Crowdfunding platforms, took part in 102 deals, a decrease from 130 the year before, yet still showing a strong level of collaboration between these groups. The venture capital market, covering seed capital, startup, and later-stage investments, saw participation from a diverse range of players. These include informal investors like Business Angels, who invest individually, as well as angel investors working through structured entities, seed capital funds, and fully regulated venture capital funds. The latter typically handle larger funds and higher-value deals compared to other market players. Corporate investors, both Italian and international, also played a significant role in investment activity. These companies often invest directly or via specialized vehicles, frequently in partnership with venture capital funds, though they sometimes lead investment rounds themselves. In 2023, corporate entities were involved in 59 deals, down from 86 in 2022 and 94 in 2021.

	Startup italiane			Startup estere con founder italiani			Totale		
	2022	2023		2022	2023		2022	2023	
Numero operazioni initial	291	250	↓	19	23	↑	310	273	↓
Numero operazioni follow on	58	52	=	2	5	↑	60	57	=
Numero operazioni totali (initial e follow on)	349	302	↓	21	28	↑	370	330	↓
Ammontare investito initial - mln Euro	1.440	882	↓	260	291	↑	1.700	1.173	↓
Ammontare investito follow on - mln Euro	423	203	↓	42	22	↓	465	225	↓
Ammontare totale investito (initial e follow on) - mln Euro	1.863	1.085	↓	302	313	=	2.165	1.398	↓
Ammontare medio investito (initial e follow on) - mln Euro	5,9	3,9	↓	15,1	11,2	↓	6,5	4,6	↓

Figure 16: 2022 and 2023 comparative analysis

In 2023, the Italian startup ecosystem underwent some noticeable changes compared to the previous year, particularly in terms of funding activity and the number of deals made. Overall, investment levels decreased across many areas, pointing to a cautious investment climate. **The number of new operations involving Italian startups dropped significantly, while the investments involving foreign startups with Italian founders showed some growth. This divergence suggests that investors may be finding better opportunities outside of Italy, or at least more favorable environments for the growth of startups founded by Italians abroad.** Despite the uptick for foreign startups, the overall picture was characterized by a decline in both initial and follow-on investments. The average deal size for Italian startups shrank considerably, pointing towards a trend of smaller investments. This trend reflects a shift to risk-averse behavior among investors, likely in response to economic uncertainties. Interestingly, the average investment for startups abroad, though it also decreased, remained higher than for Italian-based startups. The significant drop in follow-on investments also hints at a reduced appetite for further commitments to existing ventures. Investors are likely being more selective about providing additional funding, which could

indicate concerns about scalability or profitability among many of the funded companies.

Operations typologies and Deal origination analysis

In 2023, startup capital rounds once again led the way in the Italian market, making up 54% of the total deals, with 147 rounds completed. This is down from 167 rounds in 2022, but the percentage remains the same as last year. This trend aligns with previous years, where startup capital rounds represented 56% of the market in 2021 and 51% in 2019. The only exception was in 2020 when seed investments took the lead. Seed capital rounds followed a similar pattern to the previous year. In 2023, more than 100 deals were made, just as in 2022, and this represents a little over 40% of the market, a notable increase compared to 29% in 2021. Meanwhile, later stage venture rounds continued to hold a small share of the market, making up just 5% of the deals, compared to 7% in 2022. However, these deals are significant in terms of the amounts invested, as they focus on supporting companies in later development stages. The average investment size in 2023 was €4.7 million, a decrease from €6.1 million in 2022 and €7.4 million in 2021. This drop is mainly due to fewer high-value rounds being closed during the year. Funds continued to favor taking minority stakes in companies, showing consistency in this approach. Since 2019, a new category of deals of Proof-of-Concept (POC) has gained traction. This involves funding early-stage projects and ideas that haven't yet been formalized into companies, particularly in the pre-seed phase, supported by technology transfer funds. These investments, along with academic and research spin-offs (25 deals in 2023, compared to 27 in 2022), made up 9% of the market, the same as in 2022. Privately initiated ventures remained the majority, with 239 deals representing 88% of the market, the same as the previous year (274 deals). Additionally, there were 5 corporate spin-off transactions, in line with recent years, and 4 venture-building projects.

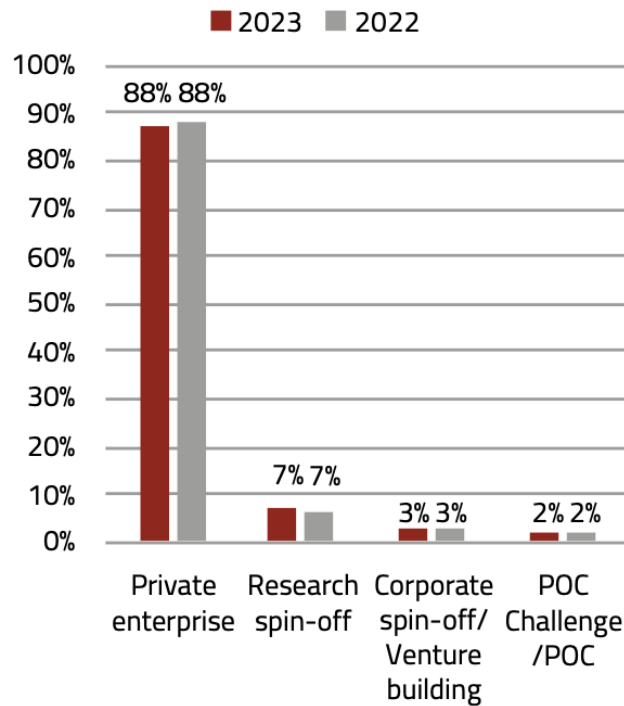


Figure 17: 2023 vs 2022 Deal origination distribution

Investments by area

In 2023, the regional distribution of companies that received investments continues to show Lombardy as the leader, capturing 46% of the total market (an increase from 44% in 2022). Lazio follows with 13%, and Piemonte holds 8%.

Looking at the geographical breakdown:

Northern Italy accounts for 68% of the total, a slight drop from 69% in 2022.

Central Italy saw a rise, representing 23%, up from 17% the previous year.

Southern Italy and the **Islands**, however, dropped to 9% from 14% in 2022.

Lombardy remains a major investment hub, with 113 companies receiving funding, although down from 124 in 2022. Lazio attracted investments in 32 companies (a slight decrease from 37 in 2022, but a big leap from only 8 in 2019). Combined, these two regions account for more than 58% of all deals. Piemonte is solidifying

its presence in the top three regions, with 19 companies receiving investments (down from 29 the previous year), and Tuscany saw a significant boost, doubling the number of companies targeted for investment to 17 (compared to 9 in 2022). There has also been a slight increase in investments targeting Italian companies with headquarters abroad, with 23 such companies receiving investments, up from 19 in 2022. Among the most notable foreign countries involved, the United Kingdom led with 6 companies, followed by Germany and Switzerland, each with 4 companies.



Figure 18: Number of deals per region

Italian Innovation Ecosystem

Italy's innovation ecosystem still faces structural challenges, particularly with the limited scale and number of venture capital (VC) funds compared to other major European countries, and an underdeveloped ability to convert research into business ventures.










 Anno fondazione: 1997 Numeri: 300 milioni di € Start up in portfolio: Yoox, Musement, S24 Fasi in cui investe: Early stage Settori: Digital Tech, Robotics & AI	 Anno fondazione: 2006 Numeri: 170 milioni di € Start up in portfolio: Prestiamoci, MedLumics, Drexcode Fasi in cui investe: Seed, Early e Late Settori: ICT, Digital, Healthcare	 Anno fondazione: 2015 Numeri: 50 milioni di € Start up in portfolio: D-Eye, Sardex, Tensive Fasi in cui investe: Seed, Early stage Settori: Digital, Medical devices
 Anno fondazione: 2013 Numeri: 70 milioni di € Start up in portfolio: Borsa del Credito, Musement, Musixmatch Fasi in cui investe: Early stage Settori: Digital	 Anno fondazione: 2016 Numeri: 100 milioni di € Start up in portfolio: Echolight, Vivasure Medical, Seventeen Fasi in cui investe: Early stage Settori: Healthcare, Medical devices	 Anno fondazione: 2016 Numeri: 50 milioni di € Start up in portfolio: Sardex, Cortilia, Codemotion Fasi in cui investe: Seed, Early stage Settori: ICT, Digital
 Anno fondazione: 2002 Numeri: +200 milioni di € Start up in portfolio: DoveConviene, Wise, Banzai Fasi in cui investe: Early stage Settori: Media, ICT, biotecnologia	 Anno fondazione: 2013 Numeri: 70 milioni di € Start up in portfolio: MoneyFarm, Faceit, 20lines Fasi in cui investe: Early stage Settori: Consumer Internet, Media	 Anno fondazione: 2007 Numeri: 75 milioni di € Start up in portfolio: Chef dovunque, AppsBuilder, Mosaicoon Fasi in cui investe: Seed, Early stage Settori: HiTech, Made in Italy

Figure 19: Main Venture Capital funds that invest in Italy

According to Ernst & Young data, 2023 saw a dip in Italian venture capital activity. Although this decline was less severe than the European average, Italian startups received €1.1 billion in funding, primarily affected by a 24% reduction in deal volume, even though the average transaction size rose modestly by 5%. When examining the geographical distribution of funded startups, Lombardy consistently leads the Italian VC market, capturing 64% of total investments. Following Lombardy are regions like Piedmont, Trentino Alto-Adige, and Tuscany. This investor tendency to favor Northern Italy is also reflected in Deloitte and AIFI's "Italy Private Equity Confidence Survey," which notes that 90% of VC funds are directed toward Northern regions, especially in the Northwest, where nearly half (49.1%) of recent deals have been made.

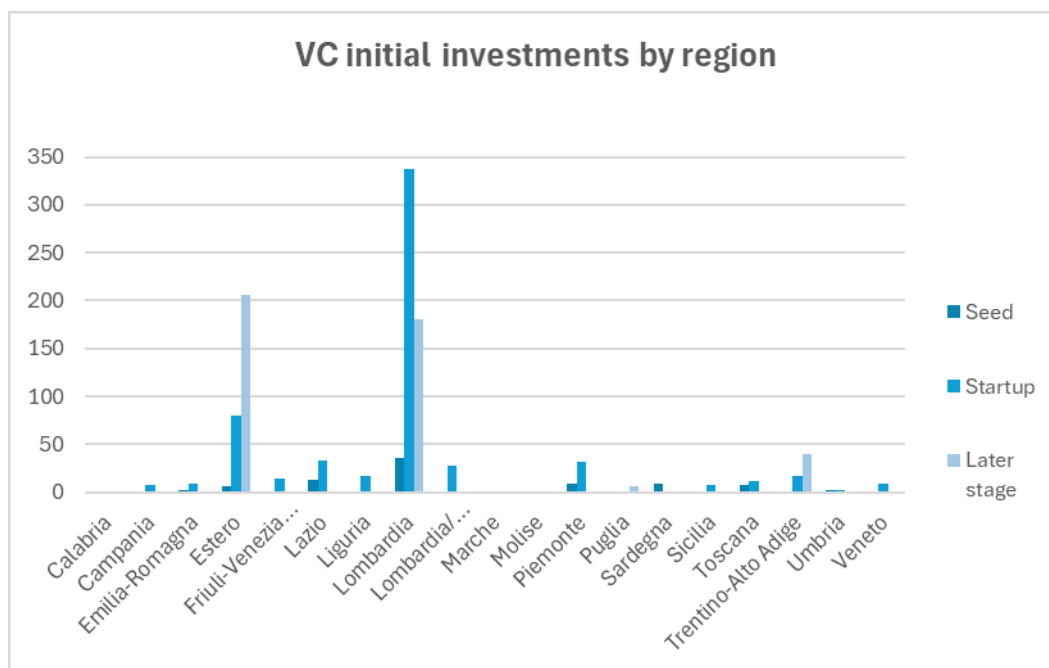


Figure 20: Initial investments distribution by region

The Northeast follows with a substantial 38.6% share, though this figure has slightly decreased compared to previous periods. Meanwhile, Central Italy has seen a modest uptick in interest, now capturing 8.8% of investments, while Southern Italy has yet to draw attention from surveyed investors.

This regional focus reflects investors' preference for key sectors that are robustly represented in Northern Italy, such as industrial products, consumer goods, and ICT. Only few VCs, like VERTIS SGR, are focusing on the South. Consequently, Corporate Venture Capital (CVC) in Southern Italy remains an emerging trend, gradually attracting attention from major corporations and local startups alike. Data from the 2023 Open Innovation and Corporate Venture Capital Report show that investments in startups and SMEs in Southern Italy make up 12.4% of the total, while investments are higher in the Northwest (47.1%) and Northeast (20.9%) regions. In terms of distribution across the country, innovative startups and SMEs are somewhat more evenly spread, with a stronger presence in the Northwest (35.1% of the total), followed by a notable 26.2% in the South, 21.2% in the Center, and 17.5% in the Northeast. There remains a gap in potential corporate investors in the South and on the islands, despite the presence of leading-edge companies in these areas. However, various industrial groups and enterprises are starting to

recognize Southern Italy as fertile ground for innovation investments, particularly in fields like energy, digital technologies, and agritech.

Vertis SGR

Vertis, established in 2007 with offices in Naples and Milan, is an independent asset management firm authorized by the Bank of Italy. It manages seven closed-end investment funds exclusively for professional investors, focusing on equity investments in research initiatives, university spin-offs, startups, scale-ups, and small-to-medium enterprises (SMEs).



In venture capital, Vertis runs a suite of “Vertis Venture” funds, including “Vertis Venture 2 Scaleup,” “Vertis Venture 3 Technology Transfer,” “Vertis Venture 4 Scaleup Lazio,” and “Vertis Venture 5 Scaleup.” These funds are dedicated to supporting and expanding businesses and projects that utilize advanced technologies or drive product and process innovation. Vertis SGR is notably committed to boosting innovation in Southern Italy. With funds like Vertis Venture Digital Sud and Vertis Venture Digital Puglia, the company has a clear focus on investing in digital innovation across the South, aiming to foster growth for startups and drive technological progress in the region. Historically, Vertis has targeted areas with strong growth potential, often prioritizing regions and sectors where innovation can spark broader economic impact. These new, region-specific funds show a dedicated approach to Southern Italy’s development. However, whether Vertis is the leading investor in this area would depend on how it compares with other firms also investing locally.

6. Southern Italy Innovation Ecosystem

Southern Italy's innovation ecosystem is a complex, interconnected network of diverse stakeholders committed to advancing technological, economic, and social development. According to Svimez's 2023 report, the GDP in the South grew by 1.3%, surpassing the national average of 0.9%. Employment in the South also rose by 2.6% year-on-year, outpacing other regions and exceeding the national average of 1.8%. This growth was significantly influenced by the National Recovery and Resilience Plan (NRRP), with public investment in the South increasing by 16.8% in 2023, compared to 7.2% in Central-Northern Italy. Across the southern regions, public investment in infrastructure projects rose from €8.7 billion to €13 billion between 2022 and 2023, a 50.1% increase compared to the 37.6% growth in the Center-North. The South's economy is marked by the substantial role of the construction sector in adding value.

In 2023, increased public spending on infrastructure projects, including PNRR-funded initiatives, contributed approximately 0.5 percentage points to Southern Italy's GDP growth, accounting for about 40% of its total growth. Conversely, business incentives increased by 16% in the South, significantly less than the 26.4% growth in Central and Northern Italy. This discrepancy reflects the lower capacity of Southern Italy's smaller-scale production base to absorb incentives aimed at fostering technological and digital modernization through the PNRR. The service sector also played an important role, with a 1.8% increase in value-added output in the South. This growth stemmed from several factors, including a strong performance in sectors closely tied to economic expansion, such as transportation and communications.

Southern Italy's GDP growth in 2023, which exceeded the national average, was driven by the resilience of its export industries and a boost in public investment, including significant contributions from the PNRR and cohesion funds. In this context, universities, research centers, incubators, accelerators, corporations, and multinational companies are crucial, acting as catalysts for innovation and supporting an environment conducive to entrepreneurial growth. This ecosystem relies on a dynamic network of players across various fields, from ICT and

aerospace to green technologies and advanced electronics. By fostering knowledge transfer and new technology development, these institutions are creating fertile ground for the emergence of high-tech startups and enterprises. Their impact extends beyond the economy, positively influencing the social and cultural fabric of Southern Italy and enhancing its competitiveness and sustainability. The ecosystem's ability to tackle global challenges and drive local innovation is a valuable asset for the South, providing a strategic advantage for both national and international positioning. In recent years, Southern Italy has made notable progress in attracting investment from major companies and multinationals, though there is still room for improvement. Between 2018 and 2021, the number of employees working for foreign multinationals in the South increased by 32%, almost double the national average of 15%, representing about 48,000 new jobs. Additionally, the value added by these companies grew by 41%, with an overall increase of €4.2 billion. However, despite these positive developments, foreign-controlled multinationals remain less prevalent in the South than in other regions: only 5% of employees in Southern Italy work for multinational companies, compared to 12% in the North and 8% in Central Italy. Likewise, the value added by these companies represents only 9% of the total in the South, compared to the national average of 17%. The Italian business landscape, as noted by Professor Federico Pirros, is characterized by a unique structure where a relatively small number of large companies play a disproportionately significant economic role. Roughly 3,400 large companies in Italy account for just 0.1% of all businesses but employ 20.7% of the national workforce, generate 31.7% of Italy's total economic value, and are responsible for 41.3% of the country's investments. This impact is even more pronounced in Southern Italy, where major factories employ thousands of people, including former ILVA in Taranto, Stellantis in Melfi and Pomigliano d'Arco, and Sevel in Val di Sangro.

The Information Technology sector is thriving in Southern cities like Bari and Naples, which are becoming growing tech hubs. Bari, for instance, hosts offices for companies like Accenture, IBM, NTT Data, Engineering Ingegneria Informatica, Exprivia, Al maviva, Alten, Atos, Capgemini, and Lutech. Naples is home to Cisco and an Apple app development center. Other cities, including Cosenza (NTT Data)

and Matera (Indra), are also emerging on the tech map in the South. In the automotive and transportation sector, giants like FCA/Stellantis, Bosch, Bridgestone, Magna PT, and Hitachi Rail have a strong presence in cities such as Bari, Nardò, Naples, and Reggio Calabria. In aerospace and defense, companies like Leonardo, AVIO AERO, and Fincantieri have established operations across Southern Italy, from Grottaglie and Naples to Brindisi and Castellammare di Stabia. Meanwhile, the energy and petrochemical industries are represented by companies like Eni, Edison, Baker Hughes, Enel, Sorigenia, EnPlus, and Erg, with refineries and plants in Priolo, Augusta, Sarroch, and other areas. The pharmaceutical and biotech industries are bolstered by multinationals like Merck, Novartis, Pfizer, and Sanofi, as well as Italian companies like Dompé, Kedrion, Alfasigma, and Menarini. Despite the structural challenges, Southern Italy's potential remains high, especially in key manufacturing sectors such as aerospace, automotive, agrifood, and pharmaceuticals.

Startups as a driver for Job occupation

In 2022, innovative Southern Italy companies collectively generated 1,138 direct jobs. A significant portion of these, 521 positions, or 46%, came from a small group of just 13 scaleups, which represent only about 10% of the total companies analyzed. Lazio stands out as the leading region for startup-driven employment, contributing 624 jobs, with Campania and Puglia following at 239 and 162 jobs, respectively. The average company size for startups hovered just above 10 employees, while scaleups typically employed around 40 people each. This disparity underscores the impact scaleups have on job creation despite their smaller numbers, as they demonstrate strong growth potential and a substantial capacity to generate employment.

Unified Special Economic Zone

Starting in 2024, Italy has made major changes to its Special Economic Zones (SEZs). Previously, Southern Italy had eight distinct SEZs, which were spread across regions including Abruzzo, Basilicata, Calabria, Campania, Molise, Puglia, Sicily, and Sardinia. These zones were established to boost economic development by offering benefits like tax breaks, streamlined bureaucracy, and subsidies to

attract both domestic and foreign investments. However, with the introduction of Law No. 162 in November 2023, these eight SEZs have been merged into one, now known as the "Single Southern Italy Special Economic Zone" (Zona Economica Speciale Unica Mezzogiorno). This unified SEZ has been in effect since January 1, 2024, and aims to simplify governance and enhance the attractiveness of the entire southern region for investors. Additionally, infrastructure improvements under the PNRR are expected to improve connectivity and access to industrial areas, offering multinational companies a favorable environment for expansion. A Unified Special Economic Zone (ZES Unica) is a strategic area developed to attract investment and drive local economic growth. This integration creates a more cohesive business environment, simplifying processes for companies looking to establish or expand operations.

Businesses here benefit from substantial tax reductions, including lower profit taxes and VAT exemptions. These benefits help reduce costs and make it easier for companies to remain competitive. Additionally, customs procedures are simplified, allowing for faster, more affordable import and export activities, an advantage especially valuable to businesses aiming for international markets. Businesses in Southern Italy have access to a variety of tax benefits aimed at fostering regional growth and encouraging investments.

1. Tax Credits: Starting in 2024, a unified SEZ now covers regions like Abruzzo, Basilicata, Calabria, Campania, Molise, Puglia, Sardinia, and Sicily. Companies investing in these zones can benefit from tax credits on expenditures for capital goods, such as machinery, equipment, and property. The level of credit varies depending on the size of the business and the location, with smaller firms in areas like Campania and Puglia eligible for credits of up to 60%, and up to 35% in regions like Abruzzo.

2. Enhanced Research and Development (R&D) Incentives: Businesses carrying out R&D activities in Southern Italy can receive increased tax credits, ranging from 25% to 45% of eligible research costs. The specific percentage depends on the

project's characteristics and the region in which it is based, providing a strong incentive for innovation in the south.

3. Corporate Equity Tax Deductions (ACE): The ACE program offers tax relief by allowing a deduction from taxable income based on the hypothetical return on new equity contributions. This incentive encourages firms to strengthen their financial foundations by using equity financing, which can be more sustainable than debt.

4. Reduced VAT Rates: Although Southern Italy does not offer blanket VAT exemptions, certain transactions and sectors may qualify for reduced VAT rates or specific exemptions. These concessions typically apply to industries like agriculture, renewable energy, and particular service categories, depending on national VAT policies.

The ZES Unica model also eases bureaucratic requirements, centralizing regulatory steps so that businesses can navigate licensing and compliance more smoothly and with fewer delays. This streamlined process lets companies spend more time focusing on growth and less time on administrative tasks. Infrastructure is another priority within a ZES Unica. Zones like these are frequently equipped with ports, airports, and rail links, creating a logistics network that supports seamless transport and distribution. Many ZES Unica also foster innovation by encouraging partnerships with universities and research centers, creating a space where new technologies and advancements can flourish. This approach has shown strong results in regions like China and parts of the Middle East, where similar zones have significantly boosted the economy. These areas have seen increased foreign investment, job creation, and contributions to national GDP, highlighting the ZES Unica as a powerful tool for economic advancement. In short, a ZES Unica isn't just a business zone, it's a hub for growth, competition, and economic vitality, designed to attract investment and support businesses as they thrive.

Opportunities for “Mezzogiorno”

A clear indication of the potential in Southern Italy’s regions to foster technological innovation is seen in the presence of specialized innovation hubs and platforms. These hubs focus on high-tech sectors and are aimed at creating a regional community that includes large companies, high-potential startups, public and private investors, industrial clusters, universities, and research centers. This network encourages collaboration and aims to bridge the gap between innovation, technology, and the market. European data highlights that, although Italy is a world leader in patents for advanced technologies, it still falls short of the EU average in innovation capacity. Thus, prioritizing technological advancement, especially in strategic fields like health tech, deep tech, AI, biotechnology, and cybersecurity, remains essential for the country. **Among the mechanisms for tech transfer, creating innovative companies (such as startups or academic spin-offs) has proven highly effective in generating added value (including GDP, employment, and innovation) and enhancing Italy's global competitiveness.** The increase in innovative startups and SME growth in Italy also highlights the strength of the country’s entrepreneurial spirit and the diversity of its innovation ecosystem. In addition to the high-tech clusters in the northern regions, such as Lombardy with Milan, Southern regions like Campania, Apulia, and Sicily are also emerging as hubs for innovation. Despite longstanding economic and structural challenges, Southern Italy is showing increased vibrancy in terms of startup and scale-up activity, with a focus on reducing the traditional gaps in productivity and employment. This momentum is driven by multiple factors, including the development of innovation hubs. For instance, the Polo di San Giovanni a Teduccio, part of the Federico II University, represents a successful model. It integrates the university with research centers and industrial districts, hosting initiatives like the Apple Developer Academy and collaborative projects with international firms such as Deloitte. In addition, hubs of bio-innovation have been established in collaboration with major players like Intel, Tim, and others. In Naples, the **MediTech** initiative stands out as the only Industry 4.0 competence center in Southern Italy. It brings together 22 major industrial players from Campania and Apulia, fostering cooperation between the two regions and bridging ties between

the private sector and government. Moreover, KPMG recently launched “KPMG Open Platform,” a platform dedicated to public sector innovation. Officially operational as of October 1, it aims to offer cutting-edge solutions that enhance competitiveness and efficiency in public administration. Around 400 local university graduates are expected to gain stable employment through new initiatives in Southern Italy. In the creative industry sector, Giffoni has emerged as an innovation hub with a mission to drive cultural and digital transformation. This initiative leverages local youth, regional heritage, and shared values like inclusivity, creativity, education, and social impact. A similar initiative can be seen in Sicily with the **Farm Cultural Park in Favara** (Agrigento) and **TIM Innovation Lab**. Both projects focus on urban renewal, addressing the social impact of digital technologies, and promoting an entrepreneurial culture in the area. In Apulia, the **South Innovation Center** was established through a collaboration between **Microsoft Italy** and **Hevolus Innovation**. Its aim is to support the digital transformation of key sectors such as manufacturing and retail, as well as public administration. Calabria hosts the **Harmonic Innovation Group**, a Benefit Corporation created through the recent merger with **Eht Holding**, a Catania-based company that brings together 79 innovative companies and 49 investors. Their objective is to develop a broad infrastructure network, the "places of the future," both domestically and internationally, with a major focus on the **Harmonic Innovation Hub in Pitagora, Tiriolo (CZ)**, which is set to open in 2025. The Harmonic Innovation Hub Archimede in Catania is expected to open in 2026. Additionally, the Special Economic Zones (SEZ) are highlighted for their potential to attract investments in logistics and manufacturing in Southern Italy’s port, industrial, and retro-port areas. These zones aim to foster an environment conducive to the growth of small and medium-sized enterprises and to stimulate the creation of micro-enterprises.

Latest developments and challenges in southern Italy

The South Innovation Report 2024 highlights a significant shift in Southern Italy as it moves towards a more innovative and tech-oriented economy. Despite long-standing socio-economic and structural challenges, the region is showing promising

growth, particularly in its innovation ecosystem, with a rising number of startups. Areas like Campania, Apulia, and Sicily are becoming key players in fostering new businesses, driven by an environment conducive to innovation. This momentum is supported by growing investments in sectors such as aerospace, ICT, agritech, and renewable energy, which not only drive technological advancements but also offer great potential for sustainable development and tackling global challenges. Universities and research centers in Southern Italy are playing a pivotal role in promoting innovation. By encouraging spin-offs, applied research projects, and public-private partnerships, these institutions are bridging the gap between academia and industry. Initiatives like the research facilities at the Polytechnic University of Bari and technology transfer programs from universities in Calabria and Sicily demonstrate how these collaborations can stimulate economic growth and strengthen the regional innovation ecosystem. There has also been a notable rise in partnerships between local businesses, multinational corporations, and public entities, facilitated by corporate venture capital (CVC) initiatives and open innovation programs. These collaborations are essential for driving innovation and attracting investment, creating a favorable environment for new ventures. Examples include public-private initiatives at the Polytechnic University of Bari and CVC projects involving companies like Enel and TIM, which are actively supporting startups and SMEs. This collaborative atmosphere, along with factors like low competition and reduced entry costs, makes Southern Italy an attractive option for both corporations and multinational companies. Additionally, the Special Economic Zones (SEZs) in the region offer tax and administrative incentives, which help draw investments into port and industrial areas, encouraging business expansion. Family offices, though more common in Northern Italy, also have considerable potential in the South to support innovation. By tapping into unused family resources, these offices can help bridge the equity gap and provide essential funding to growing businesses. Involving women and young people in these investment portfolios can align with modern trends, balancing profitability with positive social impacts. Such initiatives can promote technology transfer, enhance business resilience, and ultimately contribute to the sustainable development of Southern Italy.

Persistent challenges of Southern Italy

Despite notable advancements and emerging opportunities, Southern Italy continues to face structural challenges that hinder its full economic and innovative potential, like:

- 1) **Access to Capital:** One of the primary barriers for startups and innovative companies in Southern Italy is limited access to capital. Private equity and venture capital operations are less common here compared to Central and Northern Italy. This gap is worsened by the geographical concentration of investors, who typically prefer the northern regions for their operations. The shortage of available capital restricts companies' ability to grow and scale, limiting economic and technological development.
- 2) **Bureaucracy and Infrastructure:** Complex bureaucratic processes and inadequate infrastructure are additional obstacles for businesses in Southern Italy. Lengthy administrative procedures can discourage investment and slow down the implementation of innovative projects. Moreover, the lack of modern infrastructure, such as efficient transportation networks and advanced digital connectivity, reduces the competitiveness of Southern regions, making it difficult to attract investors and talent.
- 3) **Brain Drain:** The ongoing “brain drain” poses a significant challenge for Southern Italy. Many young, skilled professionals leave the region in search of better job opportunities, often heading abroad or to Northern Italy’s more developed areas. This outflow of human capital hampers Southern Italy's capacity to innovate and grow, creating a cycle that perpetuates regional disparities.
- 4) **Low Presence of Institutional Investors:** The limited number of institutional investors in Southern Italy further contributes to the economic gap with the rest of the country. Institutional investors, like pension funds and insurance companies, tend to invest in areas with more established entrepreneurial ecosystems, leaving Southern Italy with fewer resources to finance innovation and growth. To address these challenges, targeted policies are essential to improve access to capital, simplify bureaucracy, and enhance infrastructure. Additionally, policies encouraging talent retention and

attracting institutional investors could help create a more supportive environment for innovation and sustainable growth in Southern Italy. Only through a coordinated and strategic approach can these critical issues be resolved, unlocking the region's latent potential.

Southern Italy has shown it possesses the resources and skills needed to become a hub for innovation and technological development. To harness these opportunities, it is crucial to implement coordinated strategies involving institutions, businesses, investors, and local communities. The untapped potential of Southern Italy can be unlocked through targeted investments, effective public policies, and enhanced collaboration among ecosystem stakeholders.

7. Sicilian economic landscape

Sicilian Ecosystem Analysis

According to Unioncamere's 2023 report, Sicily's socio-economic environment shows signs of post-pandemic stabilization, though recovery has not been uniform. Business growth has been concentrated primarily in innovative sectors, where over 8,000 new enterprises have been established. Despite this, these sectors have seen a reduction of 2,270 jobs, contrasting with industries like agriculture, tourism, and commerce, which have benefited from targeted national and regional government incentives. The rise in Sicilian businesses has been most notable in Catania, Palermo, and Ragusa.

However, the GDP per capita in Sicily still lags considerably behind the national average, at €18,100 compared to €29,900 for Italy as a whole. The employment landscape reflects similar challenges; in 2022, Sicily recorded Italy's lowest employment rate at 42.6%, trailing well behind the national average of 60.1%. Nonetheless, Sicily holds significant strategic value for Italy and Europe due to its resources and location.

As Italy's second-largest producer of oil and natural gas, Sicily contributes 7.8% of the country's oil and 10.3% of its gas, making it crucial for national energy security. The region is also a key player in renewable energy, leading with 17.9% of Italy's

installed wind power capacity, totaling over 2,122 MW across 912 plants. Solar energy is also prominent in Sicily, ranking seventh nationwide in installed photovoltaic capacity. Recently, agrivoltaics initiatives, combining agriculture and solar power, have gained traction, promising to enhance both food production and renewable energy output. Sicily's industrial landscape comprises 30 industrial zones and 25 production districts, with the manufacturing sector forming a core part of the regional economy.

Catania and Palermo are especially important hubs, collectively housing nearly half of the region's manufacturing businesses and workforce. Catania has grown into a technology and manufacturing center, driven by the global semiconductor leader STMicroelectronics, which is investing €5 billion in a new silicon carbide plant. This investment positions Catania as a pivotal player in Europe's semiconductor strategy, under the EU Chips Act, and advances energy-efficient electronics manufacturing. In Catania, the **Etna Valley** ecosystem has evolved into a well-regarded innovation hub through partnerships with institutions like the University of Catania and the National Research Council. Over the past 30 years, this area has become a magnet for high-tech companies. For instance, Technoprobe has established a design center here, benefiting from STMicroelectronics' presence. Other firms, such as EDA Industries and NXP Semiconductors, have also set up operations in Catania, focusing on research, testing, and analog semiconductor technology. Analog Devices and Renesas Electronics further strengthen the area's reputation as an R&D powerhouse, where academia and industry collaborate closely on workforce development and technological advancements. This clustering of high-tech industries has laid a solid foundation for innovative startups and small- and medium-sized enterprises (SMEs). Sicily now ranks second in southern Italy, after Campania, for innovative startups, with 716 registered companies. Catania and Palermo lead in this regard, hosting 249 and 220 startups, respectively. Notable among these are Reiva Engine, with its cutting-edge solar panel cleaning technology; Ludwig, an NLP-driven linguistic search engine; and Orange Fiber, which creates sustainable textiles from citrus by-products.

These entrepreneurial successes illustrate the region's ability to compete on an international scale and leverage "latent resources" for economic growth. Moreover,

they emphasize the value of a supportive banking system for tech innovation. UniCredit's StartLab initiative is one such example, providing vital support for startups in partnership with universities and regional innovators, helping transform promising ideas into impactful ventures.

Sicilian employment rate growth

In 2023, Sicily made progress in business growth and job creation, although the rate still trails that of Italy's more industrialized regions. Over the year, more than 1,000 new companies were established on the island, notably within tech and green industries. This shift is helping diversify Sicily's economic landscape, traditionally focused on agriculture and tourism. Employment on the island rose by about 5.5%, largely driven by young adults aged 25-34, marking a higher growth rate than the national average of 2.1%. This reflects a strong push within the region to create new career opportunities for the younger generation. Initiatives like the "Isola Catania" innovation hub are energizing the local startup ecosystem by building a collaborative space where local entrepreneurs and international students can work together. These hubs are pivotal, nurturing a supportive community for startups that may lay the groundwork for lasting economic contributions in Sicily. Despite these positive trends, venture capital-driven employment in Sicily remains limited compared to Italy's northern areas, which benefit from more mature venture capital ecosystems and established support networks for innovation. For Sicily to maximize its growth potential, further improvements in infrastructure, increased access to financing, and simplified administrative processes will be essential. These measures could enable the island to attract more venture capital and increase employment opportunities through innovation.

Sicily's role in the Italian Innovative Landscape

Sicily's role in Italy's venture capital landscape remains relatively limited compared to more developed regions such as Lombardy. The venture capital ecosystem in Sicily and across Southern Italy is still in its early stages, with fewer investments and a smaller number of startups compared to the north. Structural issues, limited

access to funding, and a lack of established investment networks have contributed to the slower pace of development in this region.

In 2023, the broader European venture capital market faced difficulties, including a decline in deal volume and reduced fundraising activities. These challenges have had a more pronounced impact on emerging markets like Sicily. Although the creation of the unified Special Economic Zone (SEZ) in Southern Italy aims to boost economic activity through incentives and streamlined processes, the region still faces hurdles that limit its overall impact on the national venture capital scene.

Northern Italy, particularly cities like Milan, remains the focal point for venture capital due to its well-developed infrastructure, access to accelerators, research institutions, and a strong network of financial players. In contrast, the investment ecosystem in Sicily lacks the same maturity, making it more challenging for startups to attract the necessary capital and mentorship to succeed. As a result, the region is often overlooked by venture capitalists who prefer investing in well-established markets, especially given the economic uncertainties that have marked recent years.

For Sicily to gain greater prominence in the venture capital market, it needs to enhance its investment infrastructure, attract more institutional investors, and improve support for growing businesses. Initiatives such as fostering collaborations between public institutions and private companies could also help create a more favorable environment for venture capital investments. Overcoming these challenges will require coordinated efforts to address structural issues, improve infrastructure, and cultivate a culture of entrepreneurship that can sustain long-term economic growth.

Sicily in the European Innovative Landscape

On an European basis, based on the latest insights from the Regional Innovation Scoreboard (RIS) and the European Innovation Scoreboard (EIS), Sicily is currently classified as an '**Emerging Innovator**,' which indicates a lower level of innovation development compared to other European regions.

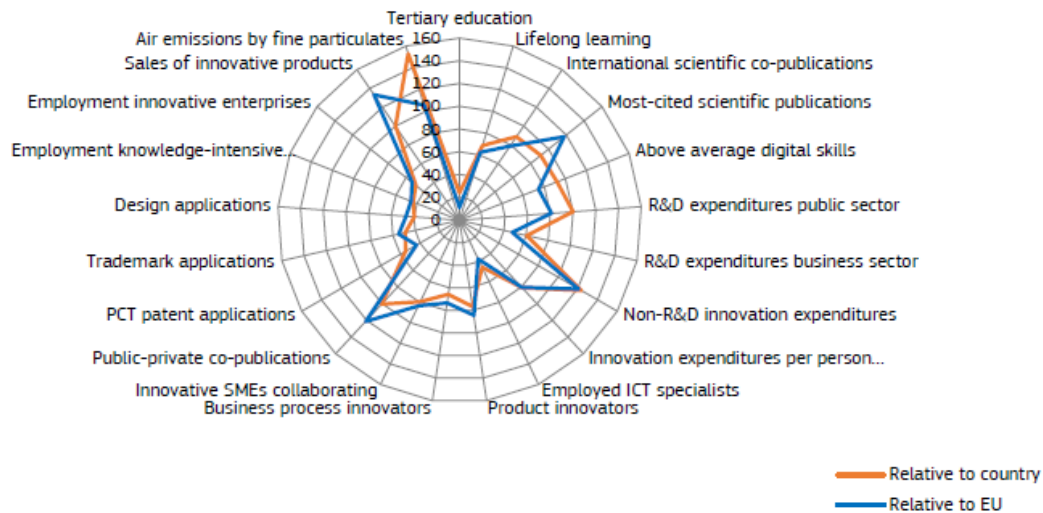


Figure 21: Spider chart Sicily scoreboard relative to IT and relative to EU

In Italy, regions are grouped into categories such as Innovation Leaders, Strong Innovators, Moderate Innovators, and Emerging Innovators. Sicily's position as an Emerging Innovator underscores the challenges it faces regarding infrastructure, funding, and research capabilities needed to foster innovation. The RIS data reveal that innovation performance is predominantly concentrated in a small number of leading regions, mainly in Northern Europe, whereas regions like Sicily are still striving to keep pace. On a national level, Italy is labeled as a 'Moderate Innovator' by the EIS, highlighting significant regional disparities. Most of the high-performing areas are in Northern Italy, while the southern parts, including Sicily, demonstrate lower levels of innovation activities.

8. Comparative analysis between Lombardy and Sicily

Lombardy in Italian VC market

Lombardy plays a key role in the Italian innovation landscape, as it plays a key role in Venture Capital Italian market, since it detains a stake of 34% of investments in Seed stages, a 55% on Startup stages and a 51% on Later stages of the whole national market.

	Seed	Startup	Later stage
Lombardia	34%	55%	51%
Other Regions	66%	45%	49%

As it is shown on the tab above, Lombardy plays a crucial role in the Italian VC market as first powerhouse of the country.

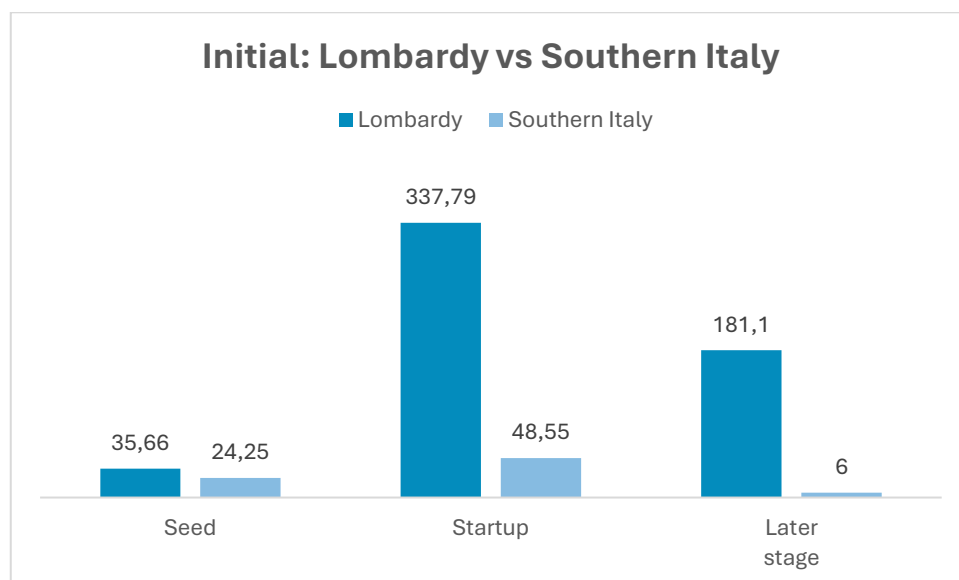


Figure 22: VC invested amount (€M) on 2023 per stage

The graph highlights the regional imbalance in investment, with Lombardy emerging as a dominant player, attracting a higher volume of funding across all

stages of business development. For the Seed stage, Lombardy attracts approximately 35.66 million euros, while Southern Italy secures around 24.25 million euros. Although the difference is noticeable, it is less pronounced compared to later stages.

In the Startup stage, the gap becomes more striking: Lombardy receives a substantial 337.79 million euros, dwarfing the 48.55 million euros invested in Southern Italy. This suggests that Lombardy is perceived as a more attractive region for early business growth, likely due to a more developed startup ecosystem and better access to investors.

The disparity is even more evident in the Later stage of funding. Lombardy attracts 181.1 million euros, while Southern Italy receives only 6 million euros. This significant difference may indicate a stronger network of mature businesses and established investors in Lombardy, whereas Southern Italy appears to struggle in scaling companies to later stages.

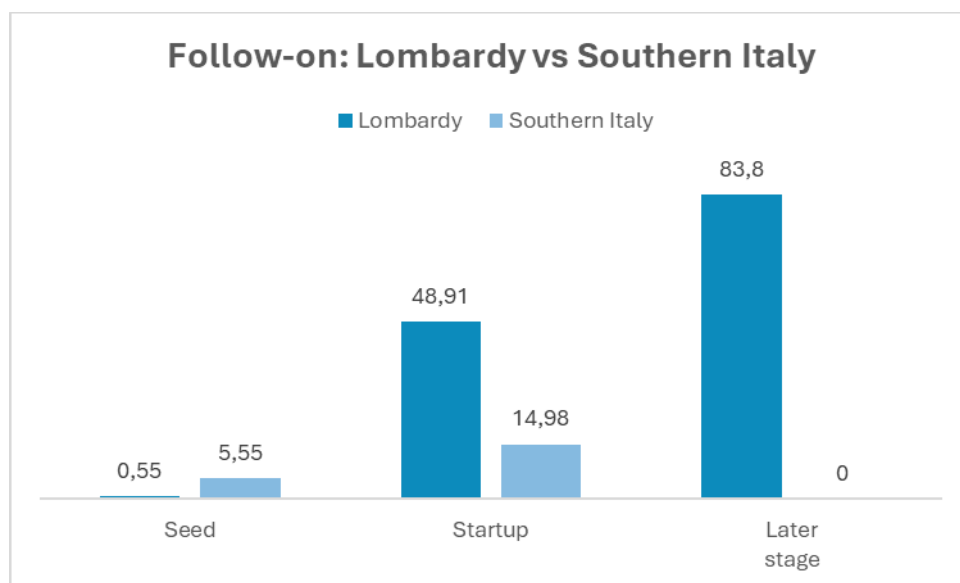


Figure 23: VC invested amount (€M) on 2023 per stage

Lombardy in the European Innovative landscape

According to the Regional Innovation Scoreboard (RIS) and the European Innovation Scoreboard (EIS), Lombardy is classified as a **'Strong Innovator'**, aligned with the level of the country on a European basis.

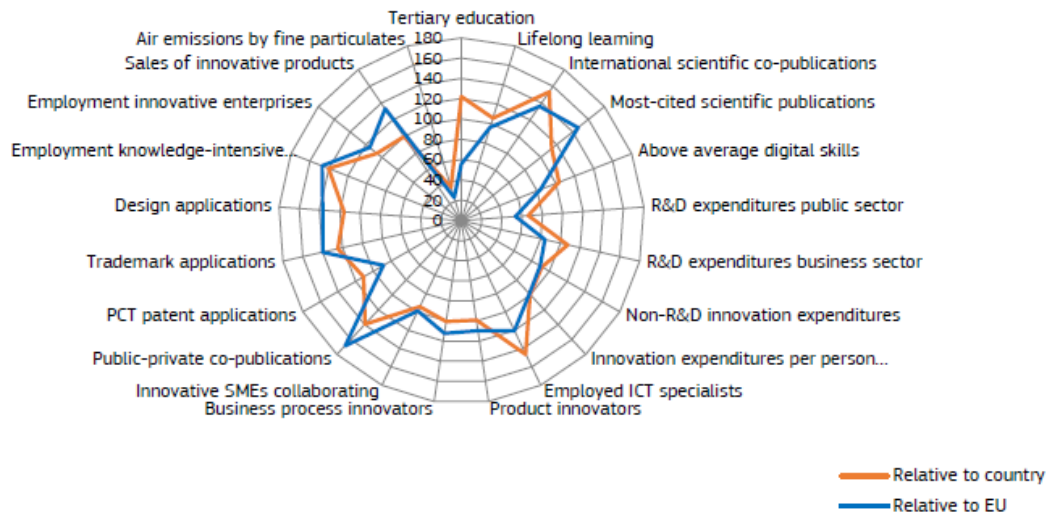


Figure 24: Spider chart Lombardy scoreboard relative to IT and relative to EU

This categorization places it among the regions with significant innovation capacity, benefiting from well-developed infrastructure, robust research and development investments, and active collaboration between universities and industries. At the European level, Lombardy ranks among the better-performing regions, showcasing a competitive edge in fostering technological advancements and innovation-driven economic growth. This position highlights its capability to remain ahead of many regions not only within Italy but also across Europe in terms of innovation performance.

Sicily vs Lombardy: Investments Gap analysis

Lombardy and Sicily tell two very different stories when it comes to venture capital investments. Lombardy is thriving, consistently pulling in significant venture

capital, while Sicily is lagging behind. The reasons for this gap go beyond just money, they involve the ecosystems, infrastructure, and the overall confidence investors have in these regions.

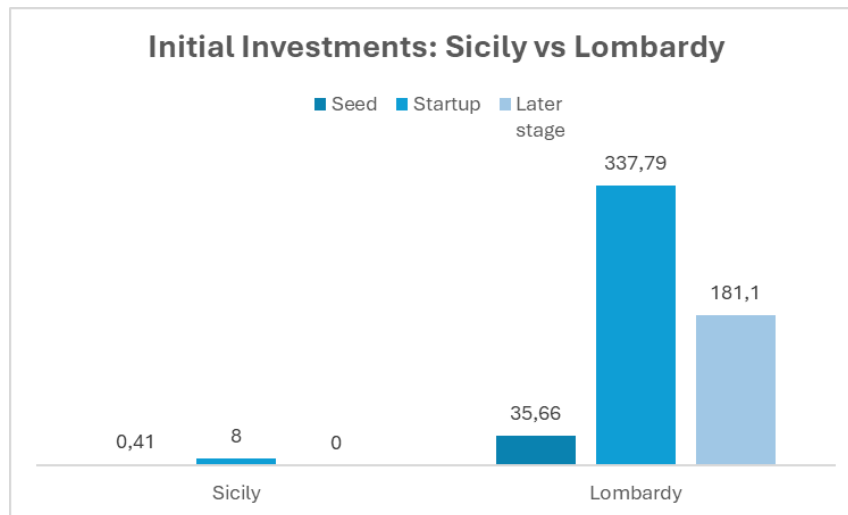


Figure 25: Amount VC investend (€M) on 2023 per stage

In Sicily, initial investments are minimal, with only €0.41 million allocated for seed investments and €8 million for startup-stage funding. There are no recorded later-stage investments.

This highlights the challenges faced by the Sicilian region in attracting substantial venture capital, which is likely due to weaker investment infrastructure, fewer established networks, and general risk aversion among investors regarding early-stage ventures in the region.

In stark contrast, Lombardy shows a much more robust investment profile. The seed-stage investment is €35.66 million, significantly higher than Sicily's. The startup stage sees €337.79 million, and later-stage funding reaches €181.1 million. This demonstrates Lombardy's maturity as a hub for venture capital, benefiting from a well-established network of investors, strong support systems for startups, and a highly developed economic infrastructure.

The ecosystem in Lombardy clearly attracts a broader spectrum of investments across all stages, which fosters a healthier and more dynamic venture capital environment compared to Sicily.

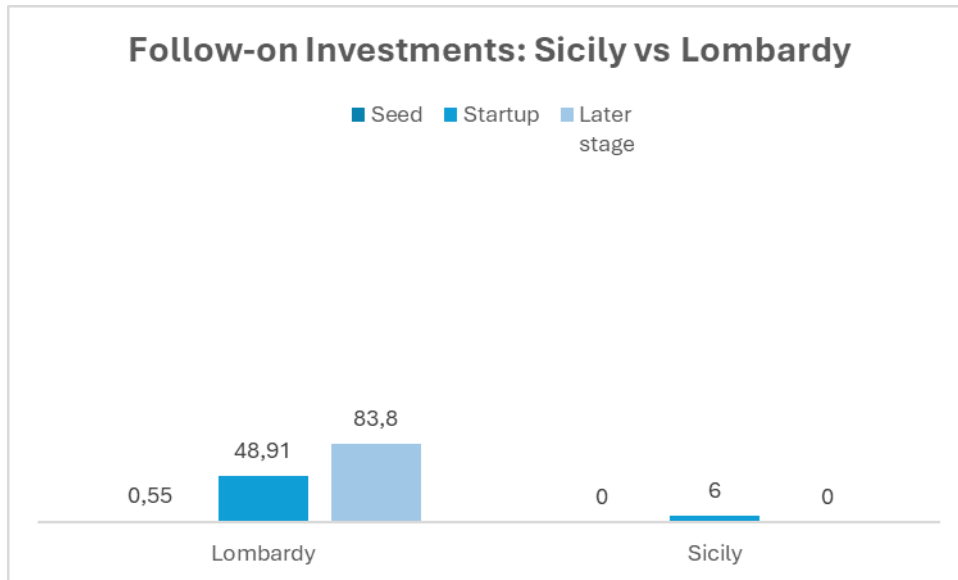


Figure 26: Amount VC investend (€M) on 2023 per stage

This gap between the two regions can be seen also on Follow-on investments. Lombardy continues to show its strength in nurturing startups beyond the initial investment phases. The region secures €0.55 million in seed follow-on funding, €48.91 million for startups, and a solid €83.8 million for later-stage investments. Meanwhile, Sicily's numbers indicate a very different scenario. The follow-on investments are almost non-existent, except for €6 million in startup funding.

Milan benefits from a solid infrastructure, supportive regulations, and a well-established network of investors, research centers, and accelerators all key ingredients that make it a hotspot for startups. The city also has an edge because of the presence of institutional investors, like pension funds and insurance companies, which give a reliable source of funding to fuel the region's growth. All of this creates a nurturing environment where innovation can thrive, and entrepreneurs feel encouraged to take risks.

9. Private sector added value for Italian GDP

The analysis is based on comprehensive input-output tables from ISTAT (Italian National Institute of Statistics), which provide key data on intermediate input costs, gross output, and inflation adjustments. The main goal of this study is to distinguish the contribution of private enterprises to regional GDP, while also accounting for the role of the public sector.

Data Sources

We used a series of ISTAT input-output tables, each offering specific insights:

- The **USEPA_63B.xlsx** file contains the Use Table at Purchasers' Prices. It outlines the goods and services used by various economic sectors, including taxes and additional costs like transportation margins. This table captures the total costs of intermediate inputs as paid by businesses.
- The **USEPB_63B.xlsx** file presents the Use Table at Basic Prices, showing the costs of goods and services without including taxes and margins. This offers a clearer perspective on the true economic expenses faced by firms, excluding any distortions from added charges.
- The **SUPPLY_63B.xlsx** file details the gross production output of each sector. It was used to calculate the overall value of goods and services produced in both regions, prior to subtracting the costs of intermediate inputs.
- The **IMPORT_63B.xlsx** file lists import values for 63 sectors, allowing us to distinguish between imported and locally produced goods. This differentiation is crucial to avoid overestimating the local value added.

Additionally, we examined the **SIMM_TOT_63BxB_v2.xlsx**, a Symmetric Input-Output Table that maps the transactions between different sectors. It provides an overview of how goods and services move within the economy, helping to understand the overall structure of input costs. The **SIMM_IMP_63BxB.xlsx** file also includes imported inputs within this symmetric framework, shedding light on the impact of foreign goods on local production processes. This is particularly

relevant for regions like Lombardy, where there is significant reliance on imported raw materials.

Methodology

The initial step involved estimating the costs of intermediate inputs, which are the goods and services businesses purchase to produce their final products. We relied on the USEPB Table (at basic prices) for this analysis, as it excludes taxes and margins, providing a clearer picture of the actual business costs without distortions. We also used the IMPORT Table to filter out imported goods, ensuring that only locally sourced inputs were considered, which better reflects the domestic economic activity.

Following this, we calculated the gross output, representing the total value of goods and services produced before accounting for input costs. This was done using the SUPPLY Table. We allocated 22% of Italy's national gross output to Lombardy, reflecting its strong industrial sector and significant GDP contribution. For Sicily, we assumed a 5% share due to its smaller, service-oriented economy, with a focus on agriculture and public services. These allocations align with historical data and regional economic analyses.

To accurately capture the impact of the private sector, we adjusted for intermediate consumption by the public sector. For Lombardy, public sector consumption was estimated at 10% of GDP, consistent with its predominantly industrial and private sector-driven economy, where the role of government spending is relatively modest. In Sicily, however, we estimated public sector consumption at 15% of GDP, due to the region's greater reliance on public investment, especially in services and social programs. These estimates were derived from an analysis of regional economic characteristics and public finance data.

The value added by the private sector was then calculated using the formula:

$$\text{Value Added} = \text{Gross Output} - \text{Intermediate Input Costs}$$

In this analysis, we utilized the adjusted intermediate input costs from the USEPB Table and subtracted the estimated intermediate consumption of the public sector.

This approach enabled us to clearly identify the economic contribution of private enterprises.

Inflation adjustments were made using data from the USEPA_PYP and USEPB_PYP tables, which offer values at Previous Year Prices (PYP). These adjustments were essential to eliminate the effects of price increases, ensuring that the calculated value added represents genuine economic growth rather than nominal changes caused by inflation

Results

The final estimate of the private sector's value added, after accounting for inflation adjustments, is as follows:

- In Lombardy, the value added was estimated at €8.11 billion.
- In Sicily, the value added was estimated at €1.83 billion.

These results highlight the substantial economic impact of private businesses in both regions, while also taking into consideration public sector activities and the influence of inflation.

Discussion

The analysis shows that Lombardy's economic output is predominantly driven by the private sector, consistent with its diverse industrial base. Adjustments for imports, as outlined in the IMPORT Table, helped provide a clearer picture of the region's domestic economic activity. In contrast, Sicily's economy is more influenced by the public sector. The 15% adjustment for public sector consumption reflects Sicily's economic structure, where government spending, particularly in social services, plays a significant role.

Inflation adjustments revealed small discrepancies of around 2-3%, indicating that the estimated growth in value added was generally aligned with observed price changes during the period analyzed.

Adjusting for actual inflation data

Incorporating the latest inflation data is essential for providing an accurate estimate of the private sector's value added in Lombardy and Sicily. Inflation reduces the

real value of economic output, so adjusting for it helps us focus on actual growth rather than nominal increases influenced by rising prices. According to the most recent ISTAT report, Italy's national consumer price index (CPI) increased by 0.2% in December 2023, leading to an annual rise of 0.6% for that month. Throughout the year, inflation averaged 5.7%, showing a decline from the 8.1% inflation rate recorded in 2022. Inflation Adjustment Method

To adjust our estimates for inflation, we applied this formula:

$$\text{Real Value Added} = \frac{\text{Nominal Value Added}}{1 + \text{Inflation Rate}}$$

Given the 5.7% inflation rate for 2023, the calculations are as follows:

- **For Lombardy:**

The nominal value added was €8.11 billion. Adjusting for inflation:

$$\text{Real Value Added: } \frac{8.11}{1 + 0.057} = 7.68 \text{ billion euros}$$

- **For Sicily:**

The nominal value added stood at €1.83 billion. After inflation adjustment:

$$\text{Real Value Added: } \frac{1.83}{1 + 0.057} = 1.73 \text{ billion euros}$$

After adjusting for inflation, the real value added by the private sector stands at €7.68 billion for Lombardy and €1.73 billion for Sicily. These adjusted figures provide a more accurate reflection of the actual economic performance in both regions, removing the impact of price inflation and highlighting true growth.

Startups value added on national GDP

To start this analysis, a simplifying assumption is made. The hypotheses are as follows:

- The startups included in the analysis do not show significant changes in inventory levels.

- There are no ongoing projects (work in progress) to account for in the calculation, such as in a service company or retail business. Work in progress refers to production activities that have begun but are not yet complete. These items are not ready for sale or delivery to customers but have already incurred costs and accumulated value during the production process.

With these assumptions, we can approximate the total national production value to the total revenue of startups across the country.

$$\textit{Total production Value} = \textit{Total revenues}$$

As formally stated in the main profitability indicators in the MiSE Q3-24 report, the ratio between added value and total production value for innovative startups (both profitable and loss-making) can be utilized to clearly define the contribution of startups to the Italian economy in 2023.

$$\frac{\textit{Total added value}}{\textit{Total Production Value}} = 0,21$$

Given the previously outlined simplification, we obtain:

$$\frac{\textit{Total added value}}{\textit{Total Production Value}} = \frac{\textit{Total added value}}{\textit{Total Revenues}} = 0,21$$

$$\textit{Total added value} = \textit{Total Revenues} * 0,21$$

$$\textit{Total added value} = (1.915.733.580 \text{ €}) * 0,21 = 402.304.052,8 \text{ €}$$

The added value of €402,304,052.8 compared to Italy's national GDP of €2.128 trillion in 2023 (according to ISTAT data) is:

$$\textit{Added value on GDP} (\%) = \frac{402.304.052,8}{2.128.001.000.000} * 10 \approx 0,0189\%$$

This figure accounts for roughly 0.019% of the total national GDP in Italy for 2023.

The value obtained result underestimated due to simplification for computation, but it was necessary to give an estimation of the economic return on a GDP basis.

To better understand the significance of the €402,304,052.8 value added, it's useful to compare it against contributions from key sectors within the Italian economy. Based on the latest available data, the sectoral distribution of Italy's GDP is as follows:

- **Agriculture:** 1.82%
- **Industry:** 23.82%
- **Services:** 64.3%

With Italy's GDP estimated at around €2.128 trillion in 2023, the monetary contributions of these sectors are:

- **Agriculture:** €38.73 billion
- **Industry:** €506.88 billion
- **Services:** €1,368.66 billion

This comparison clearly shows that the value added of €402.3 million is a very small fraction when measured against the major sectors of the Italian economy. Nonetheless, the potential for growth and the indirect positive effects of startups could make this figure much more meaningful over time, especially in regions that are seeking to diversify and strengthen their economic foundations.

Do startups and VC investments really matter?

A contribution of just 0.019% suggests that the economic impact of this sector or group of companies remains limited on a national scale. However, several important factors need to be considered:

Potential for Growth: Startups and innovative businesses tend to have significant growth potential. While their current contribution may seem minor, this could increase substantially as these companies expand their operations and attract more investments.

Indirect Effects: Startups often bring about indirect benefits, such as job creation and technological advancements, which are not fully captured in direct value-added calculations. These ripple effects can lead to broader economic and social improvements.

Economy monsters: Most of actual successful firms passed by an incubation phase where they struggle and needed to receive external financial support to survive and now play a leading role in global market in the sector which operate. To make some examples:

- **Amazon (USA):** On 1995, Amazon has received a Venture Capital financing of \$8 million dollars from Kleiner Perkins. Now is the leading firm in the world for e-commerce. Its actual market cap is \$ 2.130 billion dollars, with 1.525.000 employees all over the world innovating logistic and cloud services and generating great added value for USA economy thanks to the large number of managed volumes.
- **Alibaba (China):** On 1999 Softbank invested \$20 million dollars in Alibaba. Now is one of the most valuable firms in the world for e-commerce with a valuation that reach over \$500 billion dollars and 204.891 employees all over the world, innovating China digital sector, implementing an ecosystem for millions of small enterprises and helping China transforming its economic technology environment.
- **Spotify (Sweden):** On 2008 has received VC financing from Northzone and Accel partners. Now is the leading global streaming music platform with 92,61 billion dollars value with 7242 employees globally, innovating and stimulating creative content sector and implementing Sweden innovation model all over the world.

- **SpaceX (USA):** On 2008 has received investments from Founders fund and Draper Fisher Jurvetson. Now it's the first firm in the world to produce reusable spaceships launcher and collaborating with NASA. It's innovating aerospace industry and USA technological advancements creating a whole new possible sector as space tourism and satellites industry.
- **Yoox (Italy):** Founded on 2000, Yoox received venture capital funding from firms such as Balderton Capital. It became a giant in fashion e-commerce, positioning Italy as a leader in luxury e-commerce, was later acquired by Richemont. Its value is currently €1,29 billion of euros with 1433 employees in Italy.
- **BendingSpoons (Italy):** Founded on 2013, has received private investors financing and Venture Capital investments as Renaissance, Baillie, Gifford, Cox Enterprises. Now it's one of main developers of mobile app in Europe with a great number of users all over the world, positioning Italy as a hub for mobile technology development promoting innovation in the digital industry. Its value is currently estimated at €1 billion euros with 400 employees.

So, it's incorrect to evaluate the impact of startups and VC investments from a static point of view taking a snapshot of a particular period, because startups and VC investments are one of the keys to stimulate long term growth and economic range of a country and their results must be estimated on a long time run.

VC backed firms: Impact on regional occupation

According to the data presented in the VEM 2023 report, the number of deals in the Lombardy region is significantly higher compared to the Sicily region.

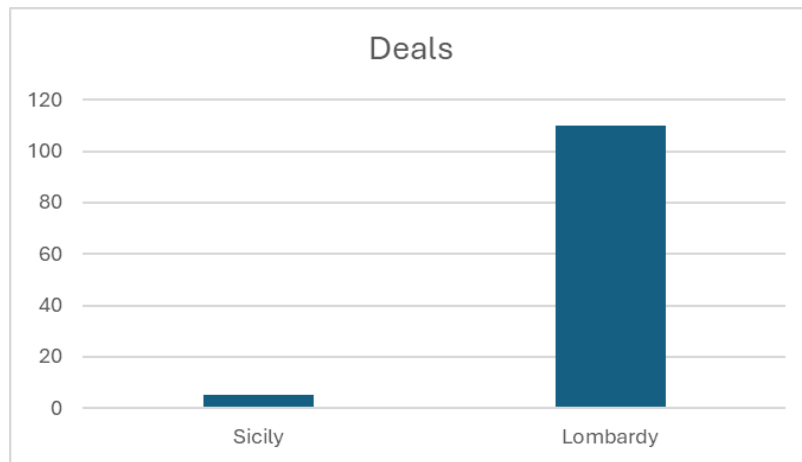


Figure 27: VC number of deals in the two region on 2023

Indeed, as shown in the graph above, the Lombardy region recorded a total of 110 deals, split between Initial and Follow-on investments, while the Sicilian region reported only 5 deals, representing just 4.5% of the figure for the northern Italian region.

Following an extensive investigation, it was possible to identify the total number of employees reported by these companies in 2023. By addressing discrepancies between data from the “Chamber of Commerce” and confidential information obtained through interviews and collaborations with various investment funds, we were able to compile a comprehensive total for both regions.

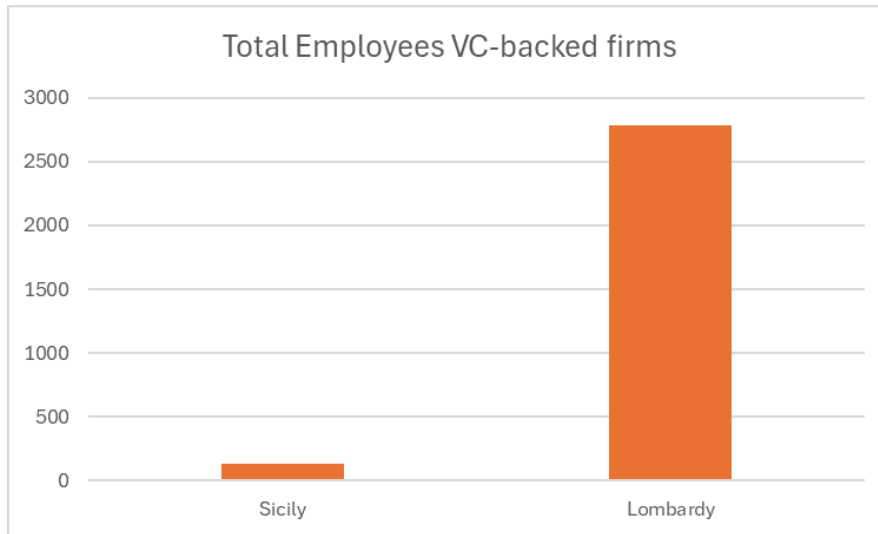


Figure 28: Total employees in VC-backed firms on 2023

The number of employees in startups is closely tied to the sector in which they operate, and the level of funding received. Evidently, due to both the difference in the number of deals (110 vs. 5) and the total amount of Initial and Follow-on investments, Lombardy once again demonstrates its strong ability to generate jobs and opportunities, boasting 2,780 employees compared to just 136 in Sicily.

Job creation within the startup ecosystem in Italy has shown strong growth up until 2022, followed by a period of adjustment in 2023. However, expert projections suggest a renewed upward trend expected in Q4 of 2024.

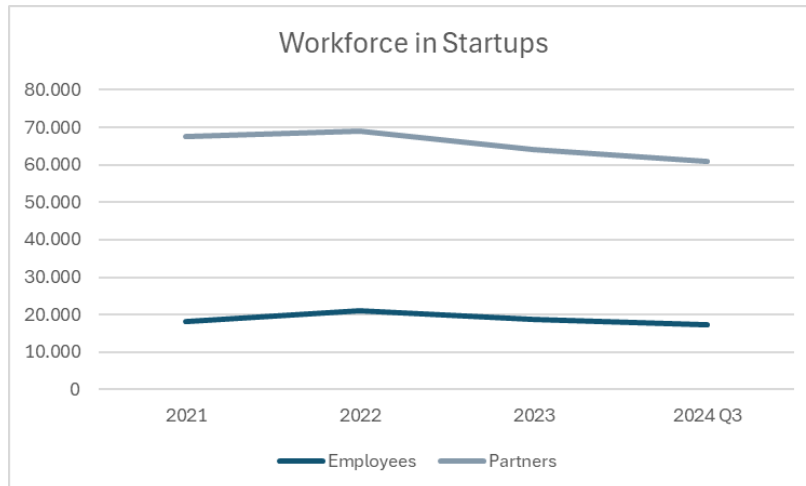


Figure 1: Data sourced from the dashboard of statistical indicators for innovative startups Q4-21, Q4-22, Q4-23, Q3-24 MiSe

The trends also mirror those of the global VC market, which is highly sensitive to interest rates. When rates are high, there is increased risk aversion, along with a rise in the "dry powder" held by investment funds.

What if Scenario

What would be Sicily benefit if it would reach, in a realistic way the level of Lombardy for VC investments, number of investors, number of deals, number of new jobs created, how the region would benefit from this?

If Sicily were to realistically achieve the level of venture capital investments, number of investors, deals, and job creation comparable to Lombardy, the region would likely experience significant economic transformation. This scenario, though ambitious, could bring substantial and long-lasting benefits that would reshape the region's socio-economic landscape.

To begin with, an increase in venture capital activity would directly stimulate economic growth. Access to larger pools of funding would enable local startups to expand their operations, innovate, and enhance productivity. This would not only increase the overall business activity but also contribute to a higher regional GDP. Lombardy, with its established ecosystem and strong venture capital backing, has seen rapid growth in its innovation sectors, and if Sicily were to mirror this trend, it could substantially boost its economic output. The added economic activity would

be a direct consequence of increased revenue generation by startups, higher tax contributions, and greater spending power among new employees.

A key outcome of higher investment levels would be significant job creation. Startups that secure substantial funding tend to scale up quickly, leading to increased hiring. For Sicily, this could help mitigate its high unemployment rates, particularly among young and skilled workers who often leave the region in search of better opportunities. By expanding the startup ecosystem, Sicily could retain its talent and even attract skilled professionals from other regions, reversing the current trend of brain drain. The increase in employment would not only provide economic benefits but also have positive social implications, improving living standards and reducing inequality.

Furthermore, greater access to venture capital would foster a more dynamic environment for innovation. Startups, backed by investors, would have the resources necessary to develop new products and services, potentially creating technology-driven solutions that address specific local needs. For instance, sectors such as agritech, renewable energy, and tourism technology are areas where Sicily has natural advantages. By nurturing these industries, the region could become a hub for specialized innovation, strengthening its competitive edge both nationally and internationally. The enhanced focus on high-growth sectors would help diversify the regional economy, reducing its heavy reliance on traditional industries like agriculture and tourism, which are often vulnerable to external shocks.

The inflow of capital and the expansion of the startup ecosystem would also elevate Sicily's profile as an attractive destination for investors and entrepreneurs. Currently, the region is less appealing to venture capitalists compared to northern Italian regions due to its smaller market size and limited infrastructure. However, with increased investment activity, Sicily could significantly improve its reputation, attracting both domestic and international investors. This could create a positive feedback loop where more investments lead to more deals, fostering sustained economic growth.

In addition, a stronger venture capital ecosystem would contribute to broader regional development by driving urban renewal and infrastructure improvements.

With more businesses setting up operations and the potential influx of skilled professionals, there would likely be increased demand for office spaces, improved transport links, and enhanced digital infrastructure. Such developments would not only support the growth of startups but also benefit the wider community, creating a more vibrant and connected regional economy.

Finally, the ripple effects of an expanded startup ecosystem would extend beyond the direct economic impact. The cultural shift towards entrepreneurship and innovation would inspire more individuals to launch their own ventures, contributing to a dynamic business environment. The social benefits of this transformation would include better job prospects, increased social mobility, and enhanced quality of life for residents.

In summary, if Sicily were to reach levels of venture capital investments and startup activity like those of Lombardy, the region could experience a substantial uplift in economic growth, job creation, and innovation. This transformation would help bridge the economic divide between northern and southern Italy, fostering a more balanced and sustainable growth model. Although the journey to achieve such parity would require significant effort and policy support, the potential benefits make it a worthwhile endeavor for the region's long-term development.

How to bridge the gap

To close the economic gap with Lombardy, Sicily must adopt a comprehensive approach to enhance its startup ecosystem, leverage its Special Economic Zones (SEZs), and build a more attractive environment for investors. A critical step would be reducing bureaucratic barriers that currently hinder business operations. Simplifying administrative processes would make it easier and faster for companies to establish themselves in the region, while improvements in infrastructure (including better roads, ports, and digital connectivity) are essential to support businesses that depend on efficient logistics and trade.

Sicily's strategic Mediterranean position, acting as a bridge between Europe, Africa, and the Middle East, is a significant asset. Promoting this unique location as a trade hub could attract more international investors, particularly in industries seeking access to diverse markets. To build investor confidence, the region must

showcase success stories and offer additional incentives tailored to the needs of high-growth industries. Strengthening the local workforce through targeted education and training, particularly in collaboration with universities and industry leaders, would further enhance the appeal of Sicily as a business destination. Public-private partnerships could also play a key role in supporting infrastructure projects and driving innovation.

Focusing on strategic industries like renewable energy and agritech would enable Sicily to leverage its natural resources and position itself as a leader in sustainable development. The region's abundant sun and wind provide an excellent basis for clean energy projects, while its deep-rooted agricultural traditions make it a prime location for innovations in agritech. Specific incentives targeted at these sectors could attract significant investment, enhancing the region's profile within the SEZ framework.

A strong branding strategy is vital to raise the international profile of Sicily's SEZs. By crafting a cohesive narrative that highlights the island's commitment to sustainability, its strategic geographic position, and its natural assets, Sicily can present itself as a premier destination for future-oriented industries. A well-executed digital marketing campaign, backed by data-driven insights, could target potential investors from Europe, North America, and Asia, showcasing the unique benefits of investing in Sicily's SEZs. Promotional materials should emphasize the region's infrastructure, investment incentives, and its role as a gateway to larger markets.

Beyond digital outreach, direct engagement with potential investors is crucial. Organizing trade missions, investment forums, and industry-specific events would help establish direct connections with key stakeholders. Notable conferences such as "Le Energie della Sicilia" in Catania have already highlighted the region's potential in the energy transition, focusing on projects like offshore wind farms and the strategic development of the port of Augusta. Events like the Forum Sicilia Qualenergia in Palermo further explored innovations in integrating renewable energy solutions while preserving the unique landscape of the region.

In the agritech sector, the Agritech Workshop hosted by the University of Catania and the upcoming Frutech Expo in Misterbianco are pivotal events that showcase Sicily's commitment to sustainable agriculture. These events provide platforms for introducing cutting-edge research and discussing innovations aimed at enhancing the competitiveness and resilience of the agricultural sector. By positioning itself as a leader in agritech, Sicily can attract interest from investors looking for sustainable farming solutions tailored to Mediterranean conditions.

The ongoing organization of such high-profile events demonstrates Sicily's proactive stance in promoting itself as a hub for innovation and sustainable growth. These gatherings facilitate networking opportunities, foster knowledge exchange, and help build relationships with industry leaders and policymakers, ultimately strengthening the region's reputation. Forming strategic partnerships with major global companies in renewable energy and agritech would further boost the region's attractiveness. Launching flagship projects in collaboration with these firms could serve as powerful case studies, illustrating the potential of Sicily's SEZs and drawing additional investments.

By implementing a cohesive strategy that combines infrastructure development, targeted incentives, effective marketing, and strong industry partnerships, Sicily can significantly enhance its visibility on the international stage. This approach would help attract the investments needed to drive growth, create jobs, and transform the region into a vibrant center for innovation and sustainable business ventures. Through these efforts, Sicily can position itself as a dynamic, forward-looking destination that capitalizes on its unique strengths and builds a robust, diversified economy.

10. Conclusions

The objective of this study was to examine the growth opportunities for the Venture Capital (VC) market in Sicily, focusing on the discrepancies compared to Lombardy, the most advanced region at the national level. The analysis aimed to identify the key differences, particularly in terms of the benefits these differences provide in employment creation, and the primary factors preventing

Sicily from achieving comparable performance in the Italian innovation landscape.

Nonetheless, the study highlighted several initiatives and opportunities that are gradually expanding and becoming increasingly tangible, offering hope for the future of innovation in Southern Italy, and specifically in Sicily. These include:

- **Creation of innovative hubs**, such as the Etna Valley in Catania, which serves as a key driver for research and development, fostering full synergy between universities and industries.
- **Growth in the number of startups**, positioning Sicily as the second most active region in Southern Italy, after Campania.
- **Government initiatives**, such as the Special Economic Zones (ZES) introduced in January 2024.
- **Professional investors and asset management firms**, like Vertis SGR, which are striving to boost innovation by establishing new funds dedicated exclusively to supporting innovative ventures in Southern Italy.

These developments represent promising steps toward strengthening the innovation ecosystem in Sicily and improving its competitiveness in the national and international markets.

The Sicilian Venture Capital (VC) market remains underdeveloped compared to regions with more advanced ecosystems, such as Lombardy or the northern parts of Italy, as well as leading European examples. This gap is largely due to a limited willingness among investors to take risks and a lack of confidence in emerging innovative businesses, particularly in southern areas. Closing this divide requires well-designed institutional support, including both public funding and initiatives to encourage partnerships between startups and established enterprises. By fostering trust in the potential of innovation and future opportunities, Venture Capital can play a key role in addressing economic challenges. Creating an environment that supports entrepreneurial ventures is essential for steering Sicily towards long-term economic growth and improved social prosperity.

During the drafting of this work, it was possible to engage with various industry experts who stated:

“Following the burst of the "internet bubble" in 2000 and 2001, Venture Capital activity in Italy all but disappeared, with little to no investment for nearly a decade. In contrast, countries like the United Kingdom maintained steady investment levels during the same period, keeping their markets active. One significant factor behind Italy’s lag is the limited willingness to take risks. Venture Capital is inherently a high-risk asset class, where investors face the possibility of losing up to 60% of their capital, if not the entirety. Despite this, the potential for returns of three to four times the original investment often outweighs the risks. From a governmental and institutional perspective, Italy has historically failed to dedicate substantial resources to Venture Capital. The strategic importance of digitalization and technology as pillars of industrial policy was overlooked. Meanwhile, nations such as France, Germany, and the United Kingdom recognized their value early on, integrating these elements into their frameworks. As a result, these countries now enjoy significantly higher levels of investment in this sector compared to Italy.”

-Partner in P101

“Vertis SGR firmly believes in the potential to improve the innovation ecosystem in Southern Italy, including Sicily. This is why our fund is increasingly committed to driving this landscape forward, both through investments and educational initiatives like UniVertis. The challenge in Southern Italy lies in the lack of funds compared to regions such as Lombardy or Northern Italy, which, due to their closer proximity to Europe and greater industrialization, became the first movers of Italian innovation. These regions have developed a dense network of experts, which significantly facilitates the funding process for startups.

The South, too, has many innovative ideas, but it is not always easy to connect with the right entrepreneur who has the right chemistry, as is more easily done in cities like Milan, for instance. However, there are signs that this sector is also evolving in Southern Italy. That said, it will take time and continuous effort to support this growth, both at the institutional and private levels.”

-Giacomo Giurazza, Investment director in Vertis SGR

Change is a fundamental driver for the development of any entity within the economic system. It fosters a continuous pursuit of improvement, which has been the foundation of humanity's most remarkable achievements across various domains. Drawing on Darwin's insights, adaptability to evolving circumstances and the ability to align with shifting factors over time emerge as crucial elements for survival and success. When applying the principles of Darwinian Evolutionary Theory to the business environment, it becomes evident that progress and innovation are vital for maintaining and enhancing the health of economic systems. Venture Capital plays a pivotal role in this process by providing the resources needed to support innovative entrepreneurial ventures. These initiatives often result in significant positive ripple effects across society and the broader economy. One of the key takeaways from this analysis is the considerable impact Venture Capital investments have on employment. The data reveal that VC-backed companies, creates new job positions in relative short temporal windows. These findings underscore the potential of emerging innovators like Sicily and highlight the far-reaching economic benefits generated by fostering innovation and supporting groundbreaking ideas.

Bibliography

1. *“Impatto occupazionale del Venture Capital: analisi degli effetti sul sistema economico italiano”*, Yll Luma and Leonardo Bitetti
2. *“The Economic Impact of Venture Capital: Evidence from Public Companies”*, Will Gornall – Sauder School, University of British Columbia and Ilya A. Strebulaev- Graduate School of Business, Stanford University and National Bureau of Economic Research
3. Sintesi rapporto Svimez 2023: *“Cittadinanza, lavoro e imprese: l’inclusione fa crescere”*
4. European Commission: *“2023 EU Industrial R&D Investment Scoreboard”*
5. Italian Tech Alliance: *“Impatto delle startup sul mercato del lavoro in Italia”*, 27 giugno 2022
6. Italian Tech Alliance: *“Infrastruttura del Venture Capital in Italia”*, 2022
7. AIFI: *“Venture Capital Monitor, Rapporto Italia 2023”*
8. Growth Capital, Italian Tech Alliance: *“Venture Capital Report, Italy Q3-24”*
9. Casaleggio Associati: *“L’impatto del Venture Capital sull’economia Italiana, report 2018”*
10. European Commission: *“European Innovation Scoreboard, 2024”*
12. European Commission: *“Regional Innovation scoreboard, methodology report, 2023”*
13. Ministero delle Imprese e del Made in Italy: *“Le imprese innovative e il Fondo di Garanzia per le PMI, 40esimo rapporto periodico, dati al 30 giugno 2024”*
14. P101 Ventures: *“State of Italian VC: Tracing Evolution and Market Opportunities, 2023”*
15. *“Relazione Annuale al Parlamento sullo stato di attuazione delle policy in favore delle startup e PMI innovative, Edizione 2023”*, ADOLFO URSO Ministro delle Imprese e del Made in Italy.
16. *“Startup, Scaleup e occupazione in Italia: impatto e trend”*, Osservatori Startup Hi-tech e Startup Thinking Italian Tech Alliance

17. ISTAT: *“Rapporto Annuale 2023: La situazione del paese. - Rapporto annuale 2023 La situazione del Paese”*
18. *“Cruscotto di Indicatori Statistici – Dati nazionali, report con dati strutturali startup innovative terzo trimestre 2024”*, MiSe
19. Sud Innovation APS *“Rapporto Sud Innovation 2024, Il potenziale inespresso del mezzogiorno”*
20. Deloitte Private *“Italy Private Equity Confidence Survey”*
21. *“Are venture capitalists a catalyst for innovation?”* Bocconi University 2009, Stefano Caselli, Stefano Gatti and Francesco Perrini
22. *“Direct and indirect effects of Private and government sponsored venture Capital”*, April 2018 Erik Engberg, Patrik Gustavsson Tingvall, Daniel Halvarsson
23. *“Investment, Duration, and exit strategies for corporate and independent Venture capital- backed start-ups”*, 2010, Bing Guo, Yun Luo, David Perez-Castrillo
24. KPMG Private Enterprise *“Venture Pulse Q2-2024, global analysis of venture funding”*
25. Bain and Company *“Italian VC 2024 report”*