



RESEARCH REPORT • SEPTEMBER 2026

Academic IP Transfer: International Practice and Outcomes.

Designing for Spinout Success



Berlin/Brandenburg Startup Factory

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1

A moment of opportunity for Berlin and Europe.

1.1 World-class research, world-class potential

Europe's research base is among the strongest in the world. Built on publicly funded universities and research institutions, it matches the United States in output and helps drive global scientific progress. In 2022 the EU produced 18.1% of the world's scientific publications, ahead of the United States at 13.1% and behind only China [1]. The EU also produces a nearly identical share of the world's high-impact publications as the US, accounting for 19.2% of the most-cited tenth of papers worldwide against the US's 19.4%, with Germany alone contributing 3.7% [1]. The EU is strong in research and IP generation; what remains is translating it into new technologies and companies. McKinsey estimates that wider adoption of best practices in commercializing this research could unlock around \$1 trillion in economic value across European deep tech [2]. Particular regions have the chance to lead the way here, and Berlin-Brandenburg is well placed to be one of them.

The German capital region is one of Europe's densest research ecosystems. It is home to more than 250,000 students, researchers, and staff; it has around 69 universities and Hochschulen, and over 70 non-university research institutions [3]. There are also five Clusters of Excellence in the region: MATH+, NeuroCure, SCRIPTS, ImmunoPreCept, and Chiral Electronics [4]. Additionally, it's home to Europe's largest university hospital, Charité, with 5700+ researchers; BESSY II is Germany's only soft X-ray synchrotron; and Adlershof is the country's largest science and technology park [5-7]. The region is internationally competitive across AI, bio/health, climate, photonics, chemistry, and quantum technology.

What makes Berlin-Brandenburg distinctive is not just the research base, but also everything that surrounds it. Berlin is the largest city in the EU, with a population of almost four million [8]. It is one of a small number of European cities that can attract global scientific and entrepreneurial talent at meaningful scale, with nearly 1M foreign residents coming from 190+ nations [8]. Berlin is often rated as one of the best cities in the world, with high quality of life, cultural depth, and openness [9]. It's known for embracing the unconventional, and the same tolerance for experimentation that defines Berlin's culture makes it a natural home for entrepreneurs.

Berlin also has an established startup ecosystem (historically strong in e-commerce and software), with significant venture capital presence and founder infrastructure already in place. It ranks as the second top startup city in Europe after London, trailing it by just one percent of founder votes [10]. The city also comes in second in the EU after Paris by number of VC investments, with 171 deals worth €2.4 billion in 2025 [11]. As Germany's capital, it also keeps founders and investors close to government and policymakers. Berlin-Brandenburg has the ingredients of a globally leading deep tech ecosystem, but it has yet to convert them into a matching flow of new companies and market-ready technologies.

1.2 The translation gap

Europe's record of turning research into companies does not match the strength and potential of its research base. This is a European pattern rather than a regional one, and Berlin-Brandenburg shares it with most of the continent's leading research hubs. In the United States, 60% of VC-funded deep tech companies are academic spinouts; in Europe, just 23% are, despite comparable research output [12]. This gap cannot be fully attributed to a shortage of ideas, nor of people willing to pursue them. In Germany, 28% of scientists are interested in founding a spinout, yet only 3% go on to do so [12, 13]. Research, IP, and willing founders are all there, yet too often company formation does not follow.

Much of the gap is driven by a few recurring problems. The process of spinning out is slow: in Germany, it takes an average of over a year and a half from first conversation to a signed IP agreement, and sometimes over 4 years (see section 5.2) [14]. Terms vary widely and unpredictably from one institution to the next, with little transparency about what a founder (or investor) can expect [15, 16]. The equity stakes institutions commonly take can also leave a spinout unable to raise venture capital (see section 3.3 and section 4.1) [15]. These challenges can inhibit startups from surviving or scaling, as well as discourage potential founders from even beginning the spinout process.

1.3 The bottleneck is systemic

Closing the translation gap requires understanding why it persists. Technology transfer offices sit at the center of the spinout process: they are the bridge between academia and industry, responsible for managing IP, navigating legal complexity, building relationships, and guiding founders through an unfamiliar process. The work demands a rare combination of skills, including IP and patent management, contract law, financial planning, industry liaison, and business development. The barriers that

hold back spinout creation in the region are, for the most part, structural features of the system that TTOs work inside rather than failures of the offices themselves.

In Germany, many of these barriers go back to how the current system was set up. The 2002 abolition of the professor's privilege made universities the owners of their researchers' inventions (see section 4.2). Policymakers and universities widely expected the reform to generate substantial revenue from IP, which would cover the costs of tech transfer and help fund research [17]. Federal funding, however, went mainly to regional patent agencies, and the universities largely did not build their own capacity to manage this IP and bring it to market [18]. When this revenue did not follow, patenting and commercialization never became a high priority at German universities [18]. For much of this period, tech transfer mainly meant patenting inventions and licensing them to industry [19]. Most contract models and terms designed specifically for spinouts, such as those at TU Munich and TU Darmstadt, have been developed only in recent years [17].

Several constraints recur across institutions. Many offices are understaffed relative to their caseload and turnover is high; the personnel base dedicated to IP at German universities is very small by international standards [18]. In 2017, German universities in the federal WIPANO program had an average of 2.3 full-time staff for inventions and patent licensing [18], while US institutions had almost three times as many [20]. Capacity also varied widely across the program's institutions, from no dedicated staff to 20 full-time positions [18]. Almost two-thirds of them had annual budgets below €100,000 for this work, including staff costs [18].

Depending on the size of the institution, spinout cases can be an infrequent occurrence. This means that the practical experience needed to efficiently complete them rarely builds up at any one institution; each case is often approached largely from scratch [14, 162]. Institutional incentives are also frequently misaligned: short-term pressure to generate revenue from individual deals conflicts with the long-term focused, portfolio-based approach that the most successful international offices follow (see section 2) [15].

Legal ambiguity compounds the problem, as it can leave TTOs hesitant about compliance risk on a series of unresolved questions. Among these are the treatment of university equity under the BHO and the Landeshochschulgesetze, state-aid rules on below-market transfers, inventor compensation under §42 ArbNErfG, insolvency law, and more [15]. Return on investment of the current setup is also an issue: while spinout numbers remain low, institutions sometimes spend far more on patents and other innovation-related activities than they receive back in licensing revenue [162].

Additionally, there are often no standardized processes to fall back on: over

70% of founders enter IP negotiations without any spinout guidelines or process to follow [14]. This can lead to confusion and frustration. A Fraunhofer ISI survey from SPRIND's IP-Transfer 3.0 project found that founders perceived technology transfer offices and legal departments as largely "inhibiting," while the inventors and other direct contacts the founders worked with were seen as "very helpful" [14]. On the institutional side, tech transfer professionals also report that founders frequently enter the process unprepared, in large part due to this lack of guidelines [14, 163]. This can make the job of the TTOs more difficult and can lead to longer timelines.

The challenges outlined above have also been echoed in conversations we have had with tech transfer offices in the Berlin-Brandenburg region and beyond. The system within which TTOs operate in Europe too often makes speed, clarity, and competitive terms difficult to deliver. These problems, however, are not universal: in some regions, tech transfer works far more smoothly, and spinouts emerge faster and raise capital more easily. Those ecosystems offer a tested model to learn from, and an opportunity for Berlin and Europe to close this gap.

1.4 The moment is now

Berlin-Brandenburg has the chance to lead, and the timing is favorable on several fronts. At the German federal level, the 2025 coalition agreement commits the government to introducing "verbindlich standardisierte Ausgründungsverträge" — binding standardized spinout contracts at universities and research institutions granting IP usage rights for a market-standard stake — alongside a national IP strategy [21]. SPRIND, the federal agency for breakthrough innovation, has worked on the same problem since 2022. It started its IP-Transfer 3.0 project in response to recurring difficulties with IP transfer that it had experienced itself [19]. In the project, transfer staff from 17 universities and research institutions have developed and tested faster, simpler, and legally secure spinout processes [22]. The direction is the same at the European level, where the Draghi report on European competitiveness identified the weak commercialization of European research as a central problem for the bloc to solve [23].

International precedent now exists as well. In January 2026, Denmark became the first country in Europe to adopt a single, binding set of standardized spinout terms across its entire university system (see section 3.1.3) [24, 25]. At the institutional level, ETH Zürich's express license shows that European institutions can put standardized, founder-friendly terms into practice at scale [26]. TU Munich, one of the most successful universities in Europe for spinouts, has also published fast-track terms that aim to standardize spinout deals [12, 27]. The Berlin-Brandenburg region

can be the next example of what this shift makes possible: research strength turned into new technologies and companies, and a template the rest of Europe can build on.

2

The philosophy of those who do this well.

2.1 The convergent insight: speed, volume, portfolio

The most successful tech transfer ecosystems in the world have converged on a shared philosophy: prioritize speed and volume of deals in order to build a portfolio of spinouts, and the returns follow over time. MIT, Stanford, UCLA, ETH Zürich, Duke, Israeli tech transfer organizations and many other successful ecosystems all operate with this approach [163, 27–31, 164–167].

Spinouts at the earliest stages are high-risk and high reward. It's very difficult to predict the success of a company at this point in its development and the majority of spinouts will fail, but some may become hugely successful. Lita Nelsen, who directed MIT's Technology Licensing Office for 25 years, noted that doing more deals increases a TTO's odds of sharing in one of these outsized successes [30]. Today's most successful tech transfer offices echo this philosophy, emphasizing that over-negotiating fewer deals risks missing the one breakout opportunity [164, 167]. Cheryl Cathey, from the Office of Technology Licensing at Stanford University, explains, "our goal is really to plant a lot of seeds. Get as many startups going as we can, because you never know whether they're going to be successful or not" [31]. Israeli tech transfer leaders take the same view. Benjamin Soffer, chairman of the Israeli Tech Transfer Network, compares it to a lottery business: "You never know which technology will actually make the difference, so you try to buy as many tickets as possible" [32].

2.2 Aligning with spinout success

The most successful tech transfer offices also aim to make the process smooth and straightforward for spinouts, and help them navigate a challenging path. As a director of biopharmaceutical licensing at UCLA's Technology Development Group put it, "Startups are like children - align with their success rather than [creating] adversarial relationships". This is in the university's own interest: its equity and royalties are worth nothing if the spinout fails. Most also try to backload financial terms, avoiding high upfront costs for cash-strapped young companies. If the TTO maintains good relationships with scientists and founders, this ends up benefiting

them in the longer term [164, 165, 167].

ETH Zürich takes a similar approach, noting that their goal is "to help make startups successful rather than taking too much of them" [163]. This approach is well received, as one survey found ETH Zürich to have by far the highest satisfaction among spinout founders of any major university in Europe [33]. In our own conversations with ETH spinout founders, they consistently described the TTO as supportive and spoke positively about the experience [168]. What's striking is that there is no real sacrifice involved: the institutions that consistently take low stakes tend to produce the most successful spinouts and, over the long run, generate the most revenue.

2.3 Portfolio returns accrue, but the feedback loop is long

In spite of spinouts being so high risk, the potential rewards can be very significant. Successful TTOs ultimately can benefit substantially from financial success of their spinouts, though it takes years to get there. These TTOs take a similar approach to venture capital firms, which also operate in a high-risk, high-reward environment by growing and diversifying their portfolios. VCs typically have a fund cycle of around 10 years, within which they aim to return money to their own investors [34]. Since TTOs are working with spinouts at the very earliest stages, it takes even longer — at least 10-15 years — to start seeing large returns from the portfolios they build. Institutions that are now seeing significant returns started building their portfolios in the 2000s [164, 165, 167]. As Benjamin Soffer (Israeli Tech Transfer Network) puts it, "we operate in a window that could easily be 10-11-12 years long... even 20" [32].

Lita Nelsen (MIT) advised, "Don't try to get rich from tech transfer. The statistics are against you; you might get lucky occasionally, but that's not the purpose" [30]. Yet paradoxically, this patient approach is exactly what produces large returns over time. MIT nowadays has been averaging \$64 million annually from 2019 to 2025 [35-40]. These returns come from decades of taking small stakes across many companies, as MIT was one of the earliest adopters of modern tech transfer practices. Stanford similarly generates tens of millions per year in revenue from equity and licensing, driven almost entirely by a handful of hits in a very large portfolio built over decades of prioritizing speed and volume of deals [41]. One of Stanford's biggest windfalls was Google (started in 1996, company founded in 1998): the university took a small amount of equity in the company, which was diluted to less than 1% at exit. Still, Stanford made \$336 million from selling this stake shortly after Google's IPO in 2004 [42].

Duke also takes low single-digit equity (and often low royalties) across many companies and today holds equity in roughly 70 companies, with 7-8 drugs on the market and decades of exits generating substantial returns [164]. As Duke's TTO notes, this success "takes time... we've been in the business since the 80s". In the short term, for any individual deal, the statistics are against the TTO making money from it. Over the long term, however, a large and diversified portfolio — the same logic that drives VC fund strategy — increases the likelihood of outsized returns. The challenge is that this requires patience. Experienced tech transfer officers note that university administrators increasingly see MIT, Penn, or Duke making tens of millions yearly and pressure their own TTOs to deliver similar results, without realizing this revenue comes from portfolio companies that spun out years ago and decades of portfolio building. As one experienced officer put it, "it's gotten worse because when I started in this business, only a handful of universities made more than a couple million a year. And now a good number of us are making wild numbers" [169].

Successful tech transfer requires resisting the temptation of seeking quick returns. New Zealand's Minister of Science, Innovation and Technology, Dr Shane Reti, notes, "in some cases, research organisations have sought to maximise their own short-term benefits to offset the cost of providing commercialisation support, rather than seeking to maximise the long-term benefits" [43]. At first glance, hard bargaining for large equity stakes and a focus on the most promising spinouts may look like the fastest way for TTOs to make money. However, this approach works against the two drivers of returns described earlier in this section: the size of the portfolio (see section 4.3.1) and each spinout's chance of success (see section 4.1). UK-based investors describe the result as "a dangerous recursive loop of short-termism that hamstring spinout entrepreneurship" [44]. As Duke's TTO puts it, "If you're so focused on the here and now, you may miss out on the future" [164].

3

How high-performing ecosystems structure terms.

3.1 International benchmarks for equity and other terms

What do these deals actually look like in practice? Despite differences in legal systems and institutional cultures, the terms offered by top-performing ecosystems mostly fall within a surprisingly narrow range. The clearest picture comes from the United States, where spinout deal terms are far more uniform than in Europe [45, 170].

3.1.1 United States

In the US, 1-5% equity is the typical range for university stakes in spinouts [45, 170, 46-48, 171]. At the top end, 5% is generally considered the maximum reasonable stake, even in cases involving substantial patent-protected IP such as therapeutics or medical devices [170, 47]. Equity stakes above 10% are rarely seen and would be considered far outside of the norm. Life science spinouts, which tend to involve the strongest IP protection, usually fall in the 3-5% range [164, 169, 170]. Software spinouts tend to have lower university equity stakes, often around 1-3%, and are more likely to involve equity-only deals with no royalties [164]. Low royalties are also common in US deals (though not always present), and are normally in the range of 0-5%.

Sometimes, US institutions include dilution protection in their deals. This clause (also called anti-dilution protection) keeps the university's percentage stake fixed until the company has raised a set amount or reached a set valuation. Claims of it being a near-universal practice in the US could not be proven by our research, and were also refuted by US-based experts we spoke with [165, 172]. When present, these protection caps are typically up to \$2M raised or \$10M post-money valuation (or somewhere within this range). In rare cases, dilution protection can extend up to \$20M post-money valuation or through Series A, but this represents the high end and is not the norm [170]. Even the higher dilution protection caps seen in US deals add only the equivalent of a few more percentage points of fully dilutable equity (see section 3.4.1).

Not all institutions are transparent about their terms, so exact numbers can be

Table 1: Summary of example spinout terms mentioned in the text. Row color indicates sector applicability: can include life sciences, deep tech (non-life-sci), software. “—” indicates that specific information was not available or not conclusive, and does not imply the presence or absence of a given term. Approximate fully dilutable equity equivalences are calculated using the test case in table 2.

INSTITUTION	EQUITY	DILUTION PROTECTION	APPROX. EQUIV. FULLY DILUTABLE EQUITY	ROYALTIES
Stanford	≤5%	Negotiated case-by-case	—	—
MIT	≤5%	Sometimes	—	—
UCLA	≤5%	None	≤5%	~≤3%
Duke	2–5%	—	—	—
UCSD	≤5%	None	≤5%	None (standard; sometimes optional)
Northeastern	3%	—	—	2%
Harvard (software)	2%	None	2%	None
Cornell (life sci)	4%	\$4M	~5.5%	Yes
Cornell (hardware/deep tech)	4%	\$2M	~4.5%	Yes
Cornell (software)	4%	\$2M	~4.5%	None
Carnegie Mellon (patent)	5–6%	\$2M	~5.5–7%	2%
Carnegie Mellon (non-patent/software)	3%	\$2M	~3.5%	None
Yale (software)	3%	None	3%	None
Yale (other, non-life-sci)	5%	None	5%	1–2%
Wisconsin-Madison (WARF)	5%	\$2M	~5.5–6%	2%
Washington State (option 1)	0%	N/A	0%	5%
Washington State (option 2)	3%	\$3M	~4–4.5%	2%
Washington State (option 3)	5%	\$3M	~7%	1%
Columbia	5%	Through Series A (highest US dilution protection seen)	~9–9.5%	—
Univ. of British Columbia	5%	2M CAD (≈1.25M EUR)	~5.5%	1–2%
Univ. of Waterloo	None	None	None	None
ETH Zürich (express license)	2–4%	None	2–4%	0–2%
EPFL	≤10%	None	≤10%	≤5%
TUM (Fast Track)	≤7% (virtual shares)	None	≤7%	Can be included
Denmark Model A (royalties only)	0%	N/A	0%	1–6% (scorecard-based)
Denmark Model B (equity + royalties)	≤5% (capped by law)	~€2.5M	~≤7%	Half of Model A rates

Table 2: Dilution test case used for equity equivalence calculations in table 1. Intended as a reasonable standard example of a deep tech spinout, informed by various sources [49–51]; values in EUR or USD.

Round	Pre - money	Raised	Post - money	Dilution
Pre - seed	4.0M	0.5M	4.5M	11.1%
Seed	8.0M	2.0M	10.0M	20.0%
Series A	30.0M	10.0M	40.0M	25.0%
Series B	75.0M	20.0M	95.0M	21.1%
Series C	160.0M	40.0M	200.0M	20.0%
Series D	350.0M	55.0M	405.0M	13.6%

hard to come by for some universities. However, available data from a range of top US institutions paints a consistent picture (see table 1 for an overview). **Stanford** takes "typically no more than 5%" equity [52], with dilution protection negotiated case-by-case (and not always present) [173]. Sources indicate **MIT** similarly caps equity at around 5% [53, 54], sometimes including dilution protection, but not always [172]. **UCLA** takes up to 5% equity in spinouts, generally 3–5% for therapeutics, with approximately 3% royalties and no dilution protection [165]. **UCSD** takes up to 5% with no dilution protection, and no royalties as standard, though royalties can optionally be part of some agreements [55, 56]. **Duke** takes 2–5% equity for life sciences [164], and an investor who worked closely with the **Northeastern University** TTO on life science deals indicated that Northeastern's express license was 3% equity with 2% royalties [174]. **Harvard's** published software license template includes 2% equity with no dilution protection and no royalties [57]. **Cornell's** fast-track license takes 4% equity across all categories, with dilution protection capped at \$4M raised for life sciences and \$2M for other technologies; royalties apply for life sciences and hardware but not for software [58–60]. **Carnegie Mellon** takes 6% equity for exclusive licenses on patent-intensive technologies (5% for non-exclusive), with dilution protection up to \$2M raised and 2% royalties, dropping to 3% equity and no royalties for non-patent IP including software [61]. **Yale** offers 3% equity with no dilution protection and no royalties for software, and 5% equity with no dilution protection and royalties of 2% for patented IP or 1% for non-patented IP for other non-life-science technologies; they do not publish a standard license for life sciences [62]. **Wisconsin-Madison's** WARF Startup Advantage license takes 5% equity with dilution protection up to \$2M raised and 2% royalties [63]. **Washington State** offers a menu of three options that trade off equity against royalties: no equity with 5% royalties, 3% equity with 2% royalties, or 5% equity with 1% royalties; the equity options include dilution protection up to \$3M raised [64]. **Columbia** takes

5% equity with dilution protection that some sources indicate can extend through Series A — notably one of the highest protection caps of any US university, making the effective stake roughly equivalent to 9–9.5% fully dilutable equity [31, 65]. The examples mentioned here are summarized in table 1.

3.1.2 Canada

Canadian universities take a range of approaches to IP ownership, but many share a common feature: giving inventors the choice of whether to retain ownership of their IP or allow the university to take ownership. When inventors opt for university ownership, the institution provides more support, such as covering patent costs, and they may still found a spinout and license the IP if they wish. Institutions with this policy include the University of Alberta [66], University of Toronto [67] and Queen's University [68], among others. Most Canadian universities don't publish their explicit spinout terms, but where terms are available, they tend to be in line with US norms. The University of British Columbia, for example, offers spinout terms of 5% equity, dilution protection up to 2M CAD raised (~1.25M EUR), and 1–2% royalties [69].

Perhaps the most well-known example of Canadian licensing policies is the University of Waterloo, which is famous for “Policy 73”. Under this policy, all inventions are owned by their creator and thus the university takes no equity in spinouts [70]. This policy has helped attract entrepreneurial researchers and given rise to a thriving startup ecosystem; notable Waterloo-affiliated companies include BlackBerry, Open-Text, Databricks, Instacart, and 1Password, among many others [71, 72]. Founders from the University of Waterloo raised more than \$14 billion USD in 2024 alone, and Waterloo ranks as the 18th top university in the world for producing founders according to PitchBook [73]. The university's Velocity Incubator claims to have helped the founders of more than 500 startups achieve a collective enterprise value of \$40 billion [74].

Waterloo's approach to IP has also inspired others internationally. In an effort to increase translation of scientific research, New Zealand recently implemented a policy which they described as “based on the model used by Canada's Waterloo University” [75]. Under this policy, inventors can choose to own the IP themselves or to allow the university to take ownership [43]. When the university does own the initial invention, founders may still spin it out, and from July 2026, university equity stakes in spinouts are “capped at around 5 to 10 percent” [43].

3.1.3 Europe

The European landscape is harder to characterize. Reliable aggregate data on European spinout terms is scarce, particularly for Germany. Some sources suggest that the average equity stake taken by continental European universities is around 7.3% [76], and some indicate that German universities typically take 5–10% when there is strongly protected IP (such as patents in life sciences) and 2–5% or less when IP protection is weaker, such as for software [45]. However, terms can vary widely within continental Europe, with some institutions still taking double-digit equity stakes in spinouts [15, 16]. Over the past few years, the clear trend – in Germany, elsewhere in Europe, and worldwide – has been toward lower university equity in spinouts, closer to the ranges long used in the US [17, 24, 26, 43, 45].

Interestingly, Sweden is the only European country that still operates under a nationwide "professor's privilege" model, meaning inventors own their own IP. This approach is most similar to that taken by the University of Waterloo, though it applies by law to the entire country. Other European nations (Norway, Finland, Germany, etc) moved away from the professor's privilege model in the 2000s (see section 4.2). Swedish academics notably file more patents per researcher in higher education than any other European country [77].

The clearest European success stories come from institutions that take equity stakes in a range similar to those seen in the US. ETH Zürich is by many measures the most successful university in Europe for spinouts and startups: alumni and researchers from ETH have created over 615 companies, more than any other European university [78, 79]. ETH has historically taken low single-digit equity stakes [78], with some sources citing up to 8% at the high end [44]. The university implemented a new policy in 2025, with an express license codifying even more founder-friendly terms. The new express license has three options for founders to choose between: 2% equity and 2% royalties, 3% equity and 1% royalties, or 4% equity and 0.5% royalties (all equity without dilution protection) [26]. Spinout times at ETH are also notably fast — surveys have found an average of around two months from initiation to completion [16], which is consistent with our own conversations with ETH spinout founders and TTO staff. The new express license aims to speed up the process to less than a month [26]. This reputation for being fast and founder-friendly helps attract significant investment activity to ETH spinouts [78, 80]. Neighboring EPFL is another Swiss success story in spinout activity, coming in second (after ETH Zürich) in continental Europe in terms of spinout value created [80]. EPFL takes fully dilutable equity of up to a maximum of 10% and royalties of up to 5% [81], with relatively fast spinout times by European standards — surveys have found an

average of around five months [16].

In Germany, TU Munich (TUM) is the clear standout, with 103 new startups and spinouts founded in 2024 alone [82]. Munich attracted €2.7 Billion in VC funding in 2025, largely driven by deep tech and spinouts and led by TUM [83]. TUM's published "fast track" spinout terms also set an equity ceiling in line with most of the other ecosystems so far mentioned: fully dilutable equity up to 7% taken in the form of virtual shares [27]. Royalties can also be a part of spinout deals, but ranges are not published – though TUM notes that royalties are generally "at the lower range of industry specific royalty rates" [84].

Denmark offers a particularly instructive example of the trend toward codifying low, standardized terms at a national level. Following a government-commissioned taskforce review involving universities, industry, foundations, and government, a broad political agreement was signed and implemented in January 2026 making Denmark the first country in Europe to mandate a single set of spinout IP terms across its entire university system [24, 85]. The framework offers founders a choice between two models: Model A, a royalty-only fast track with no university equity, where royalty rates of 1–6% are determined by a published scorecard (interestingly, royalties are capped specifically for life sciences spinouts at just 3% here); and Model B, which combines a university equity stake capped by law at 5% (non-dilutable up to approximately €2.5M raised) with royalties at roughly half the Model A rates. The same terms apply identically regardless of which Danish university the founder is spinning out from [25].

Across these different legal systems and institutions, the most successful ecosystems thus land in a similar range: mostly single-digit university equity, often with low or no royalties.

3.2 The function of equity: why these ranges converge where they do

On a startup's cap table, equity is forward-looking: it needs to incentivize the people who will build the company and to enable its growth, not to reward past contributions [46, 86]. Young companies rarely have the cash to pay competitive salaries, so equity serves as that compensation instead. To attract and keep founders and early employees, it has to outweigh two costs: the salary and prospects of other jobs open to them, and the risk that a failed venture disrupts their career. Both costs are usually higher in scientific spinouts. Their founders are often highly trained researchers with strong options in academia or industry, and development can take many years before any return materializes. Equity is a limited resource, and investors commit their capital on the same basis. As one investor told us, equity should be

allocated "not only on the basis of past involvement but also as an incentive for future support".

Equity held by parties who are not driving the company forward does little to serve a company's future growth. Investors describe such holdings as "dead equity": ownership that does not help build the company and therefore does not earn its place on the cap table [87]. This does not mean that universities should take zero equity in spinouts, but rather that the amount needs to be carefully balanced. Universities and academic co-founders often see their stakes as payment for past research and support. A young spinout has little cash and few assets beyond its IP, so it can only pay them through a share of its future value; that value exists only if the company grows. Up-front costs can take cash the company cannot spare, and too little equity left for founders and employees weakens their incentive to build it.

3.2.1 Academic co-founder equity

The same principle extends to academic co-founders who remain in their university positions rather than joining the spinout full-time. A researcher who keeps their salary, tenure, and institutional security is not bearing the forward risk that equity is meant to compensate, so by the same logic their personal stake should be limited. In Germany, a professor named as an inventor already receives statutory compensation under §42 ArbNErfG — a 30% share of the licensing revenue the university earns from the invention [88]. Personal equity in the spinout therefore sits on top of a separate financial return.

In practice, this points to a standard range of up to around 5% founding equity for non-full-time academic co-founders, with up to 10% reserved for genuinely exceptional cases — those where the co-founder's continued association is itself a competitive asset, such as an internationally recognized scientist whose name materially helps the company raise capital, recruit, or reach markets. Being a named inventor or research group lead does not by itself justify more [46, 86]. ETH Zürich similarly advises that professors hold around 5% [78], and Harvard's conflict-of-interest policy treats a stake above 5% as a "significant financial interest" that triggers formal review, which may imply that up to 5% is the normal range for its faculty [89]. Where an academic co-founder continues to contribute occasionally through advice or scientific guidance, that contribution is better compensated through a paid advisory agreement than through additional equity.

Crucially, the principle applies to the cap table as a whole, not to each party in isolation. What matters for investability is the combined stake held by parties who are not building the company forward—the university together with any non-full-time

academic co-founders. This is why investors assess the two together rather than separately.

3.3 What do VCs accept?

The terms described in section 3.1 upon which top ecosystems have converged reflect what the venture capital market will actually fund. For scientific and deep tech spinouts, VC investment is usually essential, because development is too capital-intensive to proceed without it; this makes VC investability a practical constraint. Across published surveys, our own research, and direct conversations with investors, one threshold appears with striking consistency: university equity above 10% makes a spinout difficult or impossible to fund, even in IP-heavy fields like life sciences. This threshold follows from the principle described in section 3.2. A founding team's stake shrinks with every funding round, so it has to start large enough to keep founders and employees committed through several rounds of dilution [90]. Early investors also need later investors to follow, and cap table problems caused by high university stakes can continue to create difficulty at later rounds [91]. It is therefore also in an academic institution's interest not to exceed this equity ownership threshold: its stake is worth nothing if the spinout cannot raise its next round (see section 2).

In the US, where university equity stakes typically fall between 1–5% (sometimes up to 7%, and almost never above 10%), tech transfer terms have largely converged into a range that investors consider unremarkable. US investors rarely even discuss upper limits on university equity, as the issue simply doesn't arise. As one experienced US tech transfer officer put it, the university's share of the value chain is small enough that it almost never affects a spinout's ability to fundraise [167]. US-based funds (Y Combinator, Fifty Years) that work with international founders do sometimes explicitly note that university equity above 10% "will cause problems" [86] and "can make raising from investors difficult" [46].

Unlike in the US, European spinouts regularly fail to raise funding specifically because of their IP transfer terms. As Luka Nicin, investor at Pace Ventures, told us, "in Europe, including Germany, we too often see either the university or the Professor taking too much equity which makes the startup uninvestable for institutional investors." In Germany, the Hightech-Gründerfonds (HTGF) has reported that by its own estimates, "two-thirds of knowledge-based spin-offs are hardly financeable for itself and other institutional investors simply because of the contractual conditions found" [15]. HTGF reportedly only invests in startups where the university holds no more than 10% – a position that an investor from the fund has also reiterated in direct conversations with us [15]. This is also reflected in our broader experience: we have

spoken with many spinout founders in Germany struggling to raise funding due to university equity stakes above 10%. A survey by the Royal Academy of Engineering found the same pattern, noting that many investors, VCs in particular, stated that they would "absolutely refuse" to invest in any spinout where the university holds more than 10% [92].

The same threshold appears consistently across published investor statements [93]. Extantia Capital states that universities should not hold more than 10% equity, that if royalties are also being paid then the equity portion should drop below 5% or even to zero [87]. Anna Vildaus, from the deep tech fund Wilbe, says the firm has a "clear principle" that no company in their portfolio should have more than 10% university equity [94]. Michael Jackson, also of Wilbe, says: "5% to 10% tops. It's hard to see a valid argument of why a university should ever exceed a single digit percentage of ownership in a spinout" [95]. Jamie Macfarlane, founder of Creator Fund, notes that "quality funds don't want to go into businesses where the university is on 10 plus per cent equity. They want the founders to be motivated." He adds that Creator Fund simply "walks away" if the university stake is too high [96]. Zero Carbon Capital has similarly stated that universities should own 10% or less equity [97]. PitchBook has noted that giving away 10–25% of equity to universities from the beginning means founders are rapidly diluted even in early funding stages, leaving them inadequately incentivized [90].

These findings are consistent with our own research: in conversations we had with venture capital investors, we found near-universal convergence on the same threshold. Matt Wichrowski, Partner at Fly Ventures, described anything over 10% as "a huge red flag." Others noted that university ownership "should be single-digit, comparable to an incubator (7–8%)." Nearly all of the investors of the more than 25 VC funds we spoke with identified 10% or single-digit equity as the absolute limit for what they consider investable. Only two mentioned that up to 15% could be acceptable: one noted that they would tolerate this initially because they could later restructure the cap table (see section 4.3.4), and the other said that up to 10% is best and they would only accept up to 15% in rare cases. Notably, more of the investors we spoke with cited 5% or 7% as their upper limit than those who said 15%. A SPRIND survey of investors, which asked about virtual shares, also found that a majority identified 10% as the upper limit for university equity participation (with approximately a quarter noting that they could accept up to 15%) [98].

Unlike in the US, where some universities include dilution protection in their deals, dilution protection is not the norm in Europe. The SPRIND investor survey identified anti-dilution clauses for universities as one of two clear "showstoppers"

for investors, alongside excessive equity stakes [22]. Other European investors reiterate this. Extantia Capital, for example, states that university equity "should always be subject to normal dilution in future financing rounds", no matter what the percentage is [87]. We also found when speaking with VCs that a majority of European investors do not accept dilution protection for university stakes.

Investors also scrutinize the equity held by academic co-founders who remain in their university positions rather than joining the company full-time. This is distinct from the university's institutional stake: it concerns the personal equity held by professors or researchers who stay in academia while retaining a founding share. Extantia Capital advises that "a dormant founder shouldn't have more than 5%" [87], and Zero Carbon Capital recommends no more than 10% equity for academic founders staying on as advisors [97]. One investor wrote to us that for academic co-founders, "above 5% is already difficult, and above 10% is a major red flag, often close to non-investable." Multiple VCs told us that the total amount of equity owned by the university plus non-full-time academic co-founders should not exceed 10% [175, 176].

When discussing other terms, investors consistently told us that royalties should be 5% or less, with 5% functioning as the threshold at which royalties become a dealbreaker. Many noted that 4% or even 3% should be the maximum. This is corroborated by published sources [46, 48, 86]. Investors also frequently noted (both in our conversations and in published sources) that universities should avoid taking high equity and royalties together [87].

Beyond financial terms, investors also mention long timelines to spin out as a source of problems. Jamie Macfarlane of Creator Fund has described the length of time it can take to spin out a company, which he says can be up to a year, as "completely unattractive" to VCs [96]. Investors have told us that they associate university involvement with slow processes. As one said, "the fewer formal/contractual ties to the university, the better."

3.4 The UK: an international outlier

Interestingly, though top universities in the United Kingdom do have relative success with spinouts (see section 4.4), the country stands out as a clear international outlier among top ecosystems in university spinout terms. UK universities historically took up to 50% equity in spinouts [44, 99]. The average dropped to 16% in 2024, down from 22% in 2023 [100], but this still remains roughly three times the US average and far above every other international benchmark described above. Sources note that UK university equity stakes over the past few years have been 2.5-2.7 times higher

than typical European university equity stakes and 3-4 times larger than typical US university equity stakes [16, 33]. Surveys have also found that spinning out from UK universities can take longer than in other regions, with UK universities described as noticeably slower than their US and European counterparts [16]. Unsurprisingly (given the investor preferences described in section 3.3), these terms can create difficulties for UK spinouts. Their effects on spinout outcomes are examined in detail in section 4.

3.4.1 The anti-dilution equivalence claim does not hold

A frequent but unsupported claim in UK spinout debates is that equity stakes of 15–20%, typical at UK universities, are comparable to US stakes once dilution protection is accounted for [31, 101–105]. Many UK universities specifically claim to be targeting similar effective ranges as top US universities once full dilution occurs. A central premise of this argument is that all or most US university equity stakes come with dilution protection through Series A, or that this is the default [104]. As is clearly visible from the international benchmarks presented in section 3.1, this is not the case; dilution protection through Series A is rare among US universities. Even granting the premise, the numbers do not yield equivalent stakes. Using the typical deep tech test case described in table 2, a 5% stake with dilution protection all the way through Series A — the most generous dilution protection cap we have seen — is equivalent to approximately 9.38% fully dilutable equity, not 15–20%. Under more realistic assumptions, a 5% stake with dilution protection up to €10 million post-money valuation is equivalent to roughly 7% equity without dilution protection (see fig. 1). To actually reach equivalence with a 15% fully dilutable stake, dilution protection would need to extend past €100 million raised; this is many times higher than the highest protection caps found in any US deal. This is because equivalence requires the cap to hold until founding shares have been diluted by two-thirds: only then has a 5% protected stake been shielded enough to match 15% fully dilutable equity. Reaching a two-thirds dilution by the close of Series A would require founders to have surrendered the majority of their company across only the seed and Series A rounds; an extreme and rare outcome that signals a distressed or broken cap table rather than a healthy, well-funded venture. A rougher illustration of this can be seen with the [interactive dilution equivalence calculator](#).

Oxford's own professors have also challenged this claim of equivalence publicly. As one told the Telegraph: "You can sit down and do the numbers, it's very simple arithmetic and you can figure out what it's equivalent to... This was quite shocking to me because the policy is very unreasonable. They're trying to hoodwink you with

these arguments that are very clearly wrong. We're all Oxford academics, we know how to do arithmetic, it's kind of insulting they think we won't see through that" [99].

3.4.2 Rapid correction in progress

While UK universities still take equity stakes well above international norms, a rapid correction is underway. In April 2023, TenU — a consortium of ten leading university technology transfer offices — published the University Spin-out Investment Terms (USIT) Guide, which recommended a pre-investment equity "landing zone" of 10–25% for life science and deep tech spinouts, alongside standardized positions on royalties, sub-licensing, board seats, and other deal terms [106]. A follow-up guide in May 2024 recommended 5–10% equity for software spinouts [107]. These ranges represented a significant step down from historical UK practice, though they sit well above the equity stakes taken by the most successful ecosystems internationally; even the software recommendation is at the upper end of what leading US universities take for patent-intensive technologies like therapeutics. The USIT Guide, combined with growing pressure from founders, investors, and the broader evidence base on the burden of high equity stakes, contributed to a sharp decrease in university equity in spinouts. As one report notes, there have been multiple significant changes in policies over the past decade, with many universities adopting lower equity positions than previously; the change has been so abrupt that "university spinout equity approaches from more than approximately 5 years ago...are likely to be out-of-date" [105]. In 2024, the average university equity stake reached 16%, down from 22% the previous year — a decade low — and the median equity stake dropped even further to 11% in 2025 [100, 108]. Many of the top ten UK universities have now been doing deals at 5–15% equity for the past several years [109].

Some individual institutions have led this shift. Imperial College London now offers an option for pharmaceutical spinouts that is more similar to terms found in the US, albeit with a higher non-dilution clause than most US universities would ask for: 5% equity with non-dilution protection up to £20 million cumulative investment [110]. For a typical spinout (using the same test case described in table 2), this stake is approximately equivalent to 9–9.5% dilutable equity. Sources indicate that Cambridge now takes a median equity stake of 8.8% [96], while another survey found Cambridge's average stake to be around 5% [16].

It is notable that this rapid change in typical spinout terms is specific to the UK and some similar smaller European ecosystems, while US terms have been much more consistent over years and decades. This suggests that the UK's movement is not the result of a generally dynamic global ecosystem but rather the specific

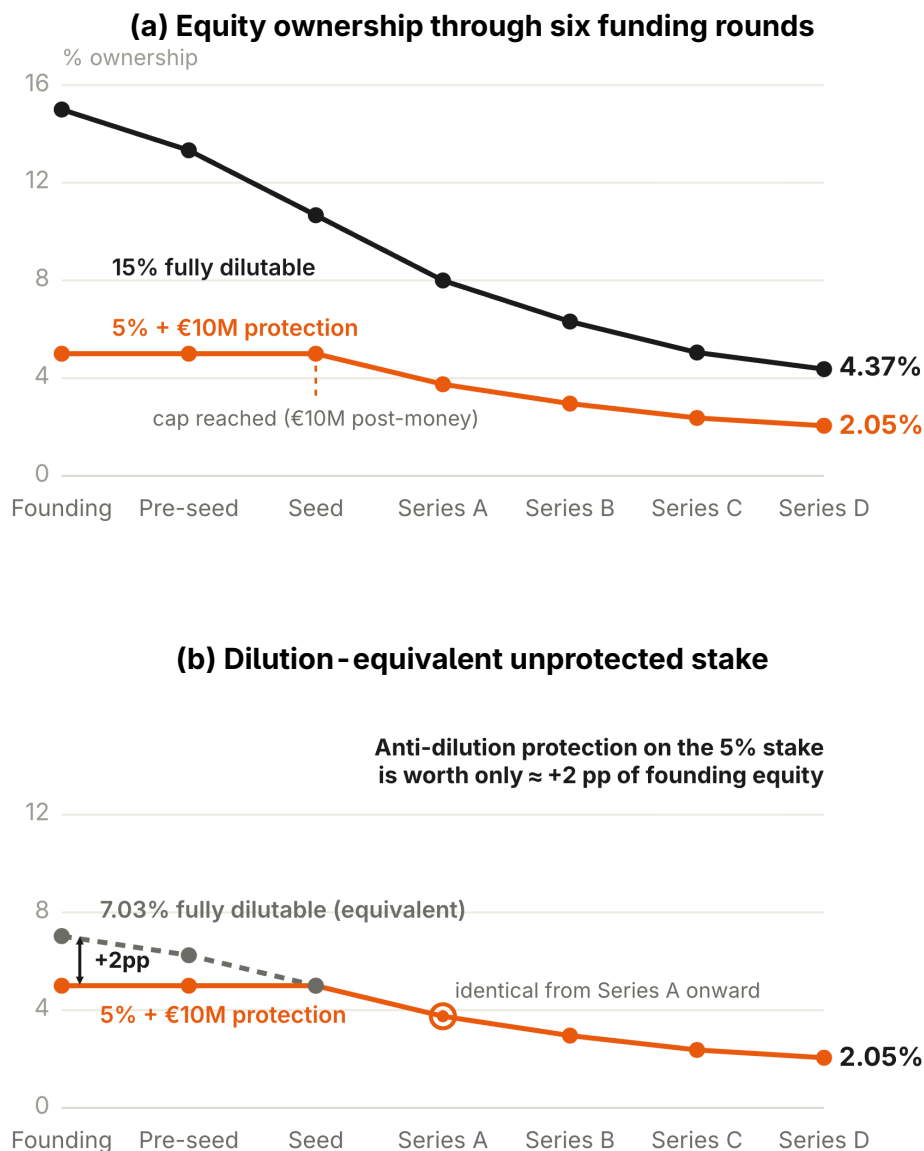


Figure 1: Dilution of university equity stakes through six funding rounds, using the test case in table 2. **(a)** A 15% fully dilutable stake compared with a 5% stake protected up to €10M post-money valuation. The dilutable stake ends at 4.37%, more than double the protected stake's 2.05%, and contradicting the claim that the two terms are roughly equivalent; the two never converge. **(b)** A 5% stake with €10M protection compared with its dilution-equivalent unprotected stake of 7.03%. The €10M protection cap is worth approximately 2 percentage points of additional founding equity.

convergence of outlier terms toward international best practices that other leading ecosystems established long ago.

4

The empirical record behind the convergence.

The convergence of high-performing ecosystems around low university equity stakes, described in the preceding sections, is grounded in a growing body of empirical evidence showing that too-high university equity stakes are associated with worse outcomes for spinouts and, ultimately, for universities themselves.

4.1 What does the quantitative evidence show?

The most direct evidence comes from studies of UK spinout data, where historically high equity stakes and transparent company registration records (via Companies House) make it possible to study the relationship between university ownership and company outcomes at scale.

An analysis by the Royal Academy of Engineering and Beahurst from 2023 found that spinouts that did not survive had a higher median university equity stake (15%) than those that were still active or had successfully exited, where the median was 10%. As the authors note, "this suggests that higher university stakes are associated with negative outcomes for spinouts" [111].

An econometric study by Hellmann, et al. found that a 10-percentage-point decrease in university equity stake increases the probability of a spinout raising venture capital by 8-10 percentage points per year. Within just the first year after founding, the probability of raising VC funding decreases by approximately 1.8 percentage points for every additional 1% of university equity. The authors conclude that they "find evidence that university stakes are a barrier to academic entrepreneurship, consistent with weakened founder incentives to raise venture capital" [112]. VCs themselves confirm this directly: as discussed in section 3.3, investors consistently report that high university equity makes spinouts uninvestable. In an article published by the venture capital fund Giant, they note that due to high university equity stakes, "sadly many UK startups become difficult for VCs to fund, before they even get started" [113]. Founders whose spinouts carry high university equity frequently report the same experience, struggling or failing to raise funding specifically because of those terms [33]. Our own conversations with founders in Germany confirm this pattern.

Compelling evidence also comes from natural experiments at specific institu-

tions. In 2017, Imperial College London changed its spinout policy and introduced “Founders Choice”, which gives founders the option of a much smaller university stake [114]. This cut Imperial’s average stake by more than half and immediately led to a significant increase in the likelihood that its spinouts raised VC funding [112]. In 2019, Cambridge and Oxford followed suit with similar reforms. Their spinouts also saw immediate and significant jumps in VC fundraising likelihood; in Cambridge’s case, the probability of raising VC rose from roughly 50% to roughly 70% [112].

The Oxford-Cambridge comparison over a longer time period is particularly instructive. Between 2011 and 2021, Oxford created 193 spinouts; Cambridge created 137. Yet Cambridge achieved 36% more spinout exits than Oxford, as well as a larger proportion of bigger and later-stage companies. During this period, Cambridge took an average equity stake of approximately 12.6%, while Oxford took approximately 24.3% [45, 101]. VCs have stated that Oxford’s more extractive terms made their spinouts less attractive to later-stage investors [101].

These institution-level findings are now visible at market scale: as the average UK university equity stake fell to 16% in 2024 (down from 22% in 2023) VC funding for UK university spinouts grew by 38%, even while the wider equity market for high-growth companies declined 19% over the same period [100].

Much of the quantitative research on this topic originates from the UK, owing to the combination of historically high equity stakes and transparent data availability. However, the underlying finding is widely accepted internationally: high university stakes can hurt spinout success — in the US, Europe, and beyond [12, 44–47]. New Zealand’s Minister of Science, Innovation and Technology, Dr Shane Reti, recently articulated this view explicitly, stating that universities “may seek too much equity in spinout companies, leaving little incentive for researchers to participate in the startup company and undermining the ability to attract further venture capital.” In response, in order to promote innovation, New Zealand has capped university equity stakes in spinouts at between 5% and 10%, effective from July 2026 [43].

4.2 Natural experiments on inventor ownership

A separate but related line of evidence comes from countries that changed the ownership of university inventions at the national level. These “natural experiments” provide insight into how inventor incentives affect innovation output.

The most dramatic case is Norway. In 2003, the Norwegian government eliminated the “professor’s privilege,” transferring ownership of university inventions from researchers to their institutions. This resulted in an approximate 50% drop in the rate of startups by university researchers, accompanied by a decline in the

quality of both startups and patents. The reform, as the authors note, "appeared to have the opposite effect as intended" [115].

Germany saw a similar effect when the 2002 reform of § 42 ArbNErfG transferred invention ownership from individual professors to their universities. After the reform, patenting by professors fell by about 19% relative to comparable researchers at non-university institutes, whose ownership rules did not change [116]. At the time, only a few German universities had professionally managed tech transfer offices (see section 1.3) [116]. Finland experienced a comparable shift when it eliminated inventor ownership in 2007, with patents dropping by 29–46%, depending on the measurement period [115, 117].

The general finding across these natural experiments is consistent: reducing the ownership stake that inventors hold in their own intellectual property tends to decrease both patent filings and the number of startups emerging from universities. The incentive structure matters greatly, and concentrating too much ownership or control with the institution, at the expense of the inventor's stake, dampens the very innovation that the system is designed to promote.

The University of Waterloo provides a striking counterexample. As discussed in section 3.1.2, Waterloo's Policy 73 grants inventors full ownership of their IP. This approach has helped produce an impressive entrepreneurial ecosystem: Waterloo founders raised more than \$14 billion USD in 2024 alone, and PitchBook ranks Waterloo as the 18th top university in the world for producing founders [73]. The university's economic impact report estimates that it drives billions in GDP in Ontario [118].

However, none of this suggests that universities should have no involvement at all. The German evidence reveals an important nuance: while overall patenting fell after the 2002 reform, professors who lacked prior industry connections actually saw their patenting increase, because the institutional support infrastructure established alongside the reform lowered commercialization barriers they had previously been unable to overcome on their own [116]. Founders, especially those without previous industry connections or commercialization experience, can benefit enormously from the support and networks that universities provide. And notably, most of the world's top-performing spinout ecosystems (MIT, Stanford, etc) are not "professor's privilege" systems; these universities do share in the success of their spinouts by taking small equity stakes that preserve the incentives and cap table structures needed to fuel innovation.

4.3 Qualitative evidence

Beyond the quantitative data, a consistent picture emerges from founder and investor accounts, TTO practitioner experience, researcher testimony, and reporting across multiple countries. When terms are too burdensome for spinouts and processes are slow or difficult, the consequences extend across the ecosystem in ways that are often invisible to the institutions themselves. Most TTO professionals are dedicated to supporting founders and helping research reach the market; the problems described here mostly stem from the constraints under which they work (see section 1.3).

4.3.1 Reduced pipeline of innovation

Burdensome terms have a hidden negative effect: they reduce the pipeline of innovation before it ever reaches the tech transfer office. Some founders and researchers avoid working with TTOs or even conceal inventions from their own institutions. As a top US TTO noted in our conversations, excessive equity requirements incentivize founders to hide inventions rather than engage with the formal process [169]. Duke shows that this can be turned around: its TTO was revamped 10–15 years ago, after valuable IP had started leaving the institution because the office was difficult to work with [164].

The phenomenon of researchers deliberately circumventing their own university's tech transfer process is well documented in the UK as well, where universities are known for taking high equity stakes. Researchers and investors describe it as common for entrepreneurial scientists and PhD students to hide discoveries from TTOs and leave to found companies outside of academia [177, 178]; these are described as "sneak-outs" as opposed to spinouts [44].

For others, the spinout process is "considered sufficiently painful and unfair that it deters would-be founders from pursuing their entrepreneurial ambitions altogether" [44]. The case of Nando de Freitas is one such example. De Freitas founded Dark Blue Labs in 2014 to commercialize his neural network research at Oxford. However, due to Oxford's equity demands, he ultimately abandoned the spinout, resigned his professorship, and joined DeepMind instead. Academic studies on university spinout terms describe his experience as emblematic of a broader tension in academic entrepreneurship, not an isolated anecdote [112].

Founders and researchers in Berlin have described similar tendencies to us: scientists who shy away from pursuing spinouts altogether, or who attempt to "cherry-pick" among partnering institutions on joint projects, preferring to work with those that have leaner processes or have established more trust with founders.

Experienced tech transfer professionals emphasize that this is a compounding

problem. As a representative at a top US TTO puts it: a faculty's first invention disclosure might not be valuable, but if they have a poor experience working with the TTO, "they may not send you the next two or three, and the next two or three may be the multimillion dollar ones" [169].

4.3.2 Reputational effects

The cumulative effect of slow processes and misaligned terms extends beyond individual deals and shapes how an entire ecosystem is perceived by the international investment and research community. When the experience of working with a region's institutions is consistently described as slow, opaque, or extractive, this reputation becomes self-reinforcing: investors deprioritize the region, entrepreneurial researchers choose to work elsewhere, and the institutions themselves lose access to the very pipeline they are trying to support.

This dynamic is visible internationally. In the UK, where universities have historically taken high equity stakes, Oxford has been repeatedly singled out by founders, investors, and even its own faculty as one of the most difficult universities to spin out from [101]. As one Oxford professor told the Telegraph, "As far as I can tell, Oxford is the worst university in the world for commercialisation" [99]. A professor at the University of Toronto who advises VCs in the US and UK offered a similar external perspective, describing UK institutions as appearing to be "very rapacious in terms of what they want from their start-ups" [119]. These assessments are not a reflection on the quality of research, staff, or the many other ways these institutions support innovation, and even the harshest critics tend to acknowledge how strong these institutions are in research and IP generation. IP terms and transfer processes, however, are central to the spinout experience. When they are out of step with international norms, they can weigh heavily on an ecosystem's reputation among founders and investors.

Beyond the UK, those who work across borders describe a broader perception gap between US and European tech transfer. Professionals with experience negotiating joint-invention agreements between US and European institutions report that even straightforward agreements can take eight to ten months to complete [169]. Experienced tech transfer officers have described cases in continental Europe where negotiations stretched over years — in at least one case, long enough for the underlying patents to expire before a deal was reached [174]. The assessment from practitioners who know both systems well is that European research quality and institutional support are genuinely strong, but that the terms and processes surrounding IP transfer remain a significant source of friction.

These perceptions matter economically, since investors and founders make location and partnership decisions based on expected friction. Ecosystems known for difficult tech transfer processes thus lose spinouts, founders, and investment without ever knowing it. Even when these difficulties stem from constraints outside the offices' control, the external perception is what shapes behavior: a reputation for being difficult to work with becomes a structural barrier to a region's competitiveness, compounding over time as the most mobile researchers and investors simply go elsewhere.

4.3.3 Founder dissatisfaction

Founders who spin out of universities that take high equity stakes report significant dissatisfaction with the process. In surveys from 2022 and 2023, Oxford had the lowest satisfaction among its spinout founders of any European or UK university, alongside UCL and Imperial, whereas ETH Zürich had by far the highest satisfaction, with Cambridge in second. [16, 33]. As noted in sections 3.1.3 and 4.1, ETH has long taken low single-digit stakes, and in the years preceding these surveys Cambridge typically took about half the equity stake that Oxford did. The 2023 survey specifically found that universities with the highest equity take rates had the highest levels of founder dissatisfaction [16].

The SPRIND/Fraunhofer ISI survey points the same way for Germany (see section 1.3) [14]. In our own conversations in Berlin, founders who spun out under high equity terms are not only dissatisfied themselves but also advise other scientists against working with those institutions; this compounds the pipeline effects described above.

4.3.4 Retroactive cap table restructuring

Even when spinouts carrying high university equity stakes do succeed in raising investment, the cap table is often retroactively restructured to bring university and founder ownership back in line with international norms [91, 101]. This practice, sometimes called "ESOP-as-a-fix", involves creating large employee share option pools after the investment round to restore founder incentives that were eroded by the university's initial equity take. Founders and investors note that this is a common workaround in places where universities offer spinout terms with equity percentages well above international best practices [101, 178, 179].

The case of Quantum Motion, an Oxford spinout, is a concrete example. When the company raised a £42 million Series B in 2023, it emerged that the founders owned less than 5% equity between them — less than a third of what Oxford held.

This prompted significant criticism from investors and commentators who argued that the cap table structure was deeply unattractive to founders, potential employees, and future investors. The founders responded by pointing to a large ESOP designed to keep them motivated, which was effectively a retroactive correction to a poorly structured cap table [101, 120]. The episode underscores that the high initial university equity terms were not sustainable: VCs effectively forced terms back toward investable levels. The original terms therefore added complexity and drew criticism, without securing the stake they were meant to.

The consequences can also extend further. The venture capital firm Giant has noted that when investors do fund companies where high university equity has left founders with unusually small stakes, VCs view the misaligned cap table as a risk and are likely to demand higher ownership for themselves to compensate. This further dilutes both the university's and the founders' stakes and reduces the company's likelihood of success, ultimately leading to worse outcomes for the university as well [113].

4.4 Why do some UK universities still find spinout success?

As previously discussed in section 3.4, although UK spinout terms are rapidly changing and approaching international best practices, they remain an outlier. Much of the research demonstrating the adverse effects of high equity stakes on spinout outcomes was carried out in the UK itself. Nonetheless, the UK's leading universities produce a meaningful number of spinouts. From 2011 to January 2025, Oxford created 225 spinouts and Cambridge created 175 [121]. Calculated from Oxford's own reports, from the 2017-18 through the 2024-25 academic year, Oxford created an average of ~16 spinouts per year [122–129]. These are respectable numbers, especially as compared to many European institutions, though not the most impressive in Europe. For comparison, ETH Zürich, which is roughly the same size as Oxford [128, 130], created 384 spinouts from 2011 to 2024, averaging about 30 per year from 2018 onward, and had 530 active spinouts out of 615 total tracked as of 2024 [79]. MIT, which has less than half the student population of Oxford or ETH Zürich [131], averaged about 28 spinouts per year over the same period [35–40, 132, 133].

Top UK universities achieve relative spinout success in spite of—not because of—their tech transfer terms, due to a combination of compensating factors. The UK's leading universities benefit from world-class academic research and powerful institutional brands. Universities like Cambridge, Oxford, Imperial College London, and UCL are consistently ranked among the best in the world [134, 135]; this reflects not only the quality of their research but also showcases their ability to attract top

international talent. Cambridge alone has produced 126 Nobel laureates [136]. These institutions also invest heavily in support for startups and innovation, offering extensive incubator and entrepreneurship programs. Oxford, for example, runs multiple offerings including the EnSpire entrepreneurship hub, a startup incubator, the Oxford Edge Centre for Entrepreneurship and Innovation, the Student Entrepreneurs' Programme (StEP), and the OX1 Incubator [137–141]. Cambridge similarly provides substantial support for aspiring and early-stage entrepreneurs through programs such as EnterpriseTECH, Accelerate Cambridge, and the Cambridge Founders program [142–144].

4.4.1 University-affiliated venture vehicles

UK top universities are also unique globally in having built large, dedicated, university-affiliated venture vehicles to invest in spinouts [91, 145]. Oxford Science Enterprises (OSE), which is partially owned by Oxford, receives an automatic equity stake (generally around 10%, representing half of the university's founding equity) in Oxford spinouts even if it does not invest [146]. Parkwalk Advisors is owned by IP Group [147], and both hold contractual arrangements with multiple universities giving them preferential access to spinout deals [148]. Parkwalk also operates university-branded funds that are partially managed by university TTOs and university endowments, again with preferential access to deal flow [149]. Cambridge Innovation Capital (CIC) has Cambridge as a founding shareholder and limited partner, and gets first access to Cambridge's deal flow with pre-emption rights [150, 151]. The UCL Technology Fund is managed in collaboration with UCL's TTO, with UCL itself serving as a limited partner [152].

These university-affiliated funds are a major source of early-stage capital for UK spinouts, often providing the first financing rounds. Of the top investors in UK spinouts by number of deals, four of the top seven are university-affiliated funds. Between 2015 and 2024, just these four (Parkwalk Advisors, Cambridge Enterprise, OSE, and IP Group) invested in a combined 689 spinouts, a significant share of all UK spinouts created during this period (the same report notes 2,064 total UK spinouts from 2011 to 2025, a slightly longer time window) [121]. The impact on volume is visible at the institutional level: before Oxford established OSE, the university produced 5–10 spinouts per year; since establishing the fund, it claims to have produced roughly 15–20 per year [91, 153].

However, these funds can also create structural problems. They routinely invest in spinouts where the university holds 15% or more equity — stakes at which independent VCs say they would simply walk away [96]. Because these funds are

partly invested in and managed by the universities themselves, they create a conflict of interest that reduces both the funds' and the universities' incentives to push for spinout terms competitive with international best practices [44]. As one analysis puts it: when a venture fund has the university as a limited partner, the TTO as part of its management, and a remit to invest in university-produced spinouts, there is no incentive for the university or TTO to rethink its terms [44]. The dynamic is particularly pronounced at Oxford, where OSE's automatic equity stake gives it an incentive to fund spinouts whose cap tables would deter independent investors, since OSE itself is part of what makes those cap tables unattractive. The result is that the number of Oxford spinouts receiving initial funding is inflated, but the underlying cap table problem is not resolved. In effect, captive funding from university-affiliated funds pushes the cap table issue downstream rather than solving it. The UK government-backed Independent Review of University Spin-out Companies found that cap table problems caused by too-high university stakes create the most significant difficulties at later rounds of investment [91], precisely the stage at which university-affiliated funds can no longer provide most of the financing. Sam Gyimah, venture partner at Lakestar and former UK minister for universities and innovation, similarly notes that the imposition of unfavorable terms by universities (which can include high equity plus royalties) causes problems at later stages; it "often means that by Series C many spinout founders have to pack in their idea, or step aside and bring in external leadership to take the business forward" [76].

In contrast, US spinouts more often rely on private capital for early financing rounds, and university-affiliated VC funds are less common [145]. US universities also tend to have strong conflict-of-interest policies that constrain how the university can invest in its own spinouts. Stanford's policy, for example, states that the university generally does not invest in companies where Stanford personnel have management responsibilities; when Stanford personnel hold equity or advisory roles in startups (as would be the case in almost all spinouts), the university cannot act as a lead investor or syndicating agent and cannot acquire an equity holding greater than 10% of the company [154].

4.4.2 The deeper capital context

Beyond institutional policy, the depth of the US private capital market makes dedicated university funds largely unnecessary: in 2024, US venture capital deployment totaled approximately \$209 billion [155, 156]. In contrast, all of Europe (the UK and continental Europe) had a VC deal value of only ~\$62 billion in 2024 [156]. VC investment as a share of GDP stands at roughly 0.6% in the US, 0.35% in the UK,

and just 0.17% in continental Europe [157]. The university-affiliated funds in the UK were largely built as a response to this capital gap as compared to the US [158], and clearly they have been successful in boosting numbers of spinouts in the UK and the amount of funding they are able to raise, especially at early rounds.

Though the UK lags behind the US in funding, it still commands far more venture capital than any other country in Europe. In 2025, the UK saw \$14.4B invested into startups – more than Germany (\$7.4B) and France (\$6.1B) combined [157]. The UK's university-affiliated venture vehicles add a further layer of early-stage capital with no equivalent at comparable scale on the continent: OSE has invested over ~\$1.2B in spinouts [159], CIC manages ~\$800M [160], and Parkwalk manages over \$641M [161]. These funds are substantially enabled by the UK's Enterprise Investment Scheme (EIS), a generous tax relief with no direct analogue in most continental jurisdictions [2]. This capital advantage is a key factor in the UK's relative spinout success compared to continental Europe, and one that cannot be replicated by adopting UK-style deal terms. Indeed, the absence of captive university funds on the continent makes the quality of deal terms more consequential, not less: UK spinouts with unfavorable cap tables can still secure initial funding from university-affiliated vehicles willing to invest on those terms, deferring the problem to later rounds; continental European spinouts are more reliant on independent investors from early rounds onward, making investable spinout terms more important. As the preceding sections show, there is evidence that the UK's historically high equity stakes have constrained rather than enabled spinout success. For continental European institutions without comparable capital infrastructure to compensate, adopting such terms would risk making outcomes worse, not better.

5

Lessons learned from other ecosystems.

5.1 Terms too burdensome for spinouts lead to worse outcomes for all

The evidence presented in the preceding sections makes the first lesson clear: when universities impose equity stakes, royalties, or combined financial terms that are too burdensome, spinouts are less likely to raise venture capital, less likely to succeed, and ultimately generate lower long-term returns for the institutions themselves. This dynamic has been documented quantitatively in the UK, confirmed by investor statements across Europe and the US, and is visible in Berlin through the experiences of founders we have spoken with. The key takeaway is that the institutions which consistently take low stakes while prioritizing the speed and volume of spinout deals tend to produce the most successful portfolios of spinouts and, over the long run, generate the most revenue for themselves.

5.2 Too much left to negotiation: slow and painful

Even when financial terms fall within ranges in line with international best practices, the process of spinning out from a university can be derailed by the sheer amount of negotiation required to reach a signed agreement. In Germany, the SPRIND/Fraunhofer ISI survey found that the average time from first conversation to signed IP contract is 18.4 months, with outliers reaching 54 months. Roughly 40% of founders reported waiting more than a year just to reach a term sheet [14]. Both TTOs and founders indicate that these long timelines are often attributable to the absence of standardized processes, terms, and frameworks: over 70% of founders enter IP negotiations without any process guidelines to follow [14]. This challenge is not only seen in Germany: an EU-level analysis found that European spinoff deal closures take an average of 10.8 months, compared to 8.9 months for international spinoffs, and attributed the gap to the lack of standardized and transparent processes [12]. Practitioners who work across borders describe similar patterns: even straightforward joint-invention agreements between US and European institutions can take eight to ten months to complete [169], and experienced tech transfer professionals have described cases in continental Europe where negotiations stretched over years — in at least one case, long enough for the underlying patents to expire before a

deal was reached [174].

Top tech transfer experts internationally emphasize that over-negotiation is one of the most significant sources of friction in university spinout processes [28, 164, 167]. Specific friction points that absorb disproportionate negotiation time relative to their ultimate importance include sublicensing terms, field-of-use definitions, and milestone payment structures [166]. Of these, milestones can be a particularly difficult source of delay, because they are linked to development events that differ by technology and resist standardization. As a result, every milestone clause becomes a bespoke negotiation, consuming time and legal resources on terms that may never be triggered and that, in the view of many investors, should not exist in the first place [164, 166]. In conversations we had, VCs consistently flagged milestones imposed by universities as a source of concern and noted that milestone clauses can introduce unnecessary complexity and risk into deals that should be kept simple.

However, implementing "fast-track" terms alone does not solve the problem if too much is still left to case-by-case negotiation. TU Munich (TUM), widely recognized as Germany's most successful university in terms of spinouts, offers an instructive example of these challenges. TUM has had multiple fast-track frameworks, the first implemented in 2022 [84] and the most recent in 2025 [27], designed with the explicit intention of standardizing and streamlining processes within a fixed timeframe of twelve weeks. Yet founders who have spun out from TUM, as well as management at TUM's own venture labs, indicate that, to their knowledge, the spinout process has never actually been completed within this timeframe and generally takes far longer [180, 181]. They attribute this to the fact that the fast-track framework does not simplify the process enough and leaves too many elements open to negotiation. Although equity ranges are defined — ensuring that spinouts do not end up with deals that preclude VC investment — the exact placement within those ranges is still negotiated case by case. Other terms, including royalties and milestones, are also left undefined. TUM's model additionally requires two paired contracts per spinout (one for virtual shares and one for other licensing conditions) and contains multiple compensation mechanisms that must be tailored for each case. The result is that what was designed as a streamlined process still involves substantial negotiation on nearly every significant term [180, 181]. The experience at TUM echoes a broader pattern: fast-track terms only deliver speed if enough of the process is standardized and negotiation is reduced to a narrow set of remaining decisions. As experienced tech transfer practitioners note, the goal should be to reduce negotiation to the minimum number of areas where case-specific judgment is actually needed, and to resolve everything else through published standard terms [164, 167].

5.3 Too standardized: doesn't work for all cases

On the other hand, fully standardized terms create a different problem. Express licenses work well in some cases, but spinout frameworks that are too one-size-fits-all struggle to accommodate the diversity of technologies that research-intensive universities produce.

These tradeoffs are visible even at ETH Zürich, one of the most successful spinout ecosystems in Europe. As discussed in section 3.1.3, the university implemented a highly standardized express license in July 2025, replacing a previously more flexible system of guidelines [26]. While the express license has increased the speed of deals, and works well for many spinouts, the TTO's own early assessment is that it is too standardized for many cases [163]. The fundamental issue is proportionality: a software spinout with no university patents and a therapeutics spinout built on multiple university-held patents represent fundamentally different levels of university contribution. A single fixed equity stake cannot be fair to both; it risks overcharging one and undercharging the other. A tech transfer officer at ETH Zürich suggested that different tracks or more options within the express license could help the system better fit a wider range of cases [163].

Practitioners elsewhere have reached similar conclusions. Duke, which handles technologies ranging from therapeutics and medical devices to quantum computing and software, does not use a one-size-fits-all express license. An officer at the TTO noted that a license with completely fixed terms "only solves the problem if you've got an institution that is very narrow in its research focus". Standardization is important, but it must be balanced with the ability to adapt to vastly different cases.

6

The design problem.

The ecosystems that produce the most successful spinouts have competitive terms — single-digit equity, held below the level at which investors walk away — and build their portfolios by doing many deals quickly rather than extracting as much as possible from any single one. Their largest returns come over a decade or more, from the breadth of a portfolio rather than from any individual deal. This pattern recurs across different legal systems and startup environments.

Getting the terms right is necessary but not enough. Spinouts also stall on process: when too much is left to negotiate, the months lost to it deter founders and investors as surely as unfavorable terms do. At the same time, the best fix is not complete standardization, because a single fixed deal cannot be fair across technologies that differ enormously in institutional contribution.

This is the challenge: a spinout framework has to keep terms competitive, move quickly, and stay proportionate across very different cases. It also has to be workable for the situations in which TTOs find themselves — many of them understaffed, handling spinouts too seldom to build deep expertise, and unsure of their footing on unresolved legal questions. Some of these requirements are in tension, especially speed and proportionality; a framework that is sound in theory but unworkable for a resource-strapped TTO does not help institutions or founders. The principles below are guidelines for designing a framework that can meet this challenge and enable successful IP transfer.

6.1 Principles

Transparency. Standard terms and ranges, as well as the process, should be published clearly; this allows founders, investors, and TTOs to know what to expect before the first conversation. This increases fairness by reducing information asymmetries, and allows founders to enter negotiations better prepared, which makes the jobs of tech transfer officers easier. It also avoids the problems that arise from terms that vary unpredictably from one institution to the next. Furthermore, transparent and fair terms can help organizations attract and keep entrepreneurial researchers. This can start a self-reinforcing cycle, because each new spinout makes its institution

more appealing to top talent.

Speed. The path from first meeting to signed agreement should stay short, ideally 3 months or less. Over-negotiation is a common source of delay, and predefining the common variables removes most of it. Negotiation should be reduced as much as possible.

Simplicity. Fewer moving parts make for faster deals and fewer things to disagree over. Compensation should be kept to as few mechanisms as possible, and combining them — equity and royalties together, for example — should be discouraged when possible.

Evidence-basis. The terms should be set where the international record says spinouts are most likely to raise capital and grow; this is also, over time, where universities earn the most returns. In practice, this means equity stakes that fall below the roughly ten-percent ceiling above which most independent investors stop funding. Equity going to non-full-time academic co-founders should also be limited. Up-front costs for startups should be avoided whenever possible. TTOs should follow the strategy that has consistently produced the most success across ecosystems: taking modest stakes across many spinouts, since the largest returns arrive slowly and from a few companies in a wide portfolio.

Institutional flexibility. A framework should ideally be able to accommodate very different technologies, and the differing legal and organizational realities of different institutions, without falling back on case-by-case negotiation to do it. A software spinout with no university patents and a therapeutic with a patent portfolio should not be forced onto identical terms; proportionality of this kind is what a single fixed express license, however well built, cannot provide. The way to keep that flexibility from reopening open-ended bargaining is to structure it, defining the points of variation in advance rather than negotiating them from scratch each time.

Together, these principles help offices get more out of the staff and budgets they already have. Predefined terms and a standard process reduce the time and legal work that each deal needs, so the same team can support more spinouts. When several institutions use the same standard, their offices can also share tools and learn from each other's cases.

6.2 The Berlin Model

There is no single approach that follows from these principles, as multiple frameworks may satisfy them; **The Berlin Model** is one such framework. It was developed by

JUNI with backing from the Berlin Senate and input from a working group of tech transfer offices in the German capital region. It builds directly on the research in this report, and its design follows the principles above.

The process starts with an IP Audit, completed jointly by the spinout and TTO, to establish what IP exists, who owns it, and what IP the spinout will need. An IP Scorecard (adapted from the SPRIND approach [98]) then assesses the importance and value of the IP to the spinout, placing it in a corridor. Each corridor has a narrow, predefined range of terms per transfer track, so negotiation is limited. This allows terms to reflect differences in the IP without negotiating each deal from scratch.

Institutions choose which of five transfer tracks to offer: virtual or real shares (A and B), shares plus royalties (C), royalties only (D), or fixed compensation (E); founders choose from the available transfer tracks at their institution. The term ranges are calibrated to the benchmarks and investor thresholds in sections 3.1 and 3.3: university equity stays below 10% and is fully dilutable, and royalties are at most 5%. These ranges are also similar to those in other published models: the SPRIND model for Tracks A and B [98], and Denmark's national standard for Tracks C and D (see section 3.1.3).

All of **The Berlin Model's** terms and steps are published, and the process is designed to reach a signed agreement within 13 weeks.

Ten Berlin institutions have signed a memorandum of understanding with the Berlin Senate to begin adopting the model in a three-year trial. Full details are in a separate document. See www.berlinmodel.eu for more information.

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