Europe Economics

Estimating the impact on investment of a commercial TDM exception

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Executive Summary

This report, commissioned by the Computer & Communications Industry Association, provides a quantified estimate of the impact of a commercial Text and Data Mining (TDM) exception on investment in the UK in AI and non-AI TDM-intensive sectors over a 12-month period (2025). The analysis follows a structured methodology to distinguish between the following two scenarios:

- Scenario A (With Commercial TDM Exception): The UK maintains its historical share of global AI investment across all sectors, including TDM-intensive activities. Non-AI TDM-intensive sectors continue to attract investment growth in line with global trends.
- Scenario B (Without Commercial TDM Exception): UK investment in TDM-intensive activities stagnates or declines, reflecting a loss of competitiveness due to the absence of a TDM exception. Non-TDM AI investments continue to grow, but TDM-exposed AI investments remain flat or drop and non-AI investments remain flat.

The updated analysis, incorporating revised estimates for sectoral growth and TDM intensity, shows that the absence of a commercial TDM exception would result in a significant shortfall in UK investment across key sectors. By comparing Scenario A (with a commercial TDM exception) and Scenario B (without a commercial TDM exception), we estimate that:

- AI-Related TDM Investment would be $4.3bn in 2025 under Scenario A, compared to $1.9bn-$3.2bn under Scenario B, a difference of $1.1bn-$2.4bn (£0.8bn-£1.8bn).[1] In Scenario A UK AI investment overall would be $6.4bn (2 per cent of $320bn; of this $6.4bn, $4.3bn would be TDM-sensitive). So our model suggests that the UK could lose 17-38 per cent of its total forthcoming AI investment for 2025.
- For non-AI-related TDM investment the breakdown is as follows:
  - Scientific & Academic Research investment would grow to $6.691bn in 2025 under Scenario A, versus $6.496bn under Scenario B, leading to a shortfall of $195m (£150m).
  - Legal & Financial Analysis investment would increase to $1.545bn under Scenario A but remain at $1.5bn under Scenario B, representing a gap of $45m (£35m).
  - Healthcare & Pharmaceuticals investment would rise to $654m under Scenario A, compared to $623m under Scenario B, leaving a $31m shortfall (£25m).

A narrow TDM exception would restrict the ability of firms, researchers, and financial institutions to leverage large-scale data processing, hindering innovation and competitiveness in key industries. Without an exception, the UK risks falling behind, not only in core AI investments but also in scientific research, legal & financial analysis, and pharmaceutical innovation—sectors that are increasingly reliant on large-scale data processing and AI-driven insights.

Implementing a commercial TDM exception would enable UK-based organisations to remain on par with international competitors, particularly in AI-driven sectors and data-intensive research fields. The absence of

[1] We use an exchange rate of £1 = $1.33.

such a TDM exception risks stagnation or decline in UK investment across key TDM-intensive sectors. If that should happen, we estimate that, absent a commercial TDM exception, UK investment in these sectors would be lower by approximately $1.4bn to $2.7bn (£1.0bn-£2.0bn) in 2025 than if a commercial TDM exception were implemented.

1 Introduction

This report, commissioned by the Computer & Communications Industry Association, provides a quantified estimate of the impact of a commercial Text and Data Mining (TDM) exception on investment in the UK in AI and non-AI TDM-intensive sectors over a 12-month period (2025). The analysis follows a structured methodology to distinguish between the following two scenarios:

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The report presents a quantitative estimate of how much UK investment would be lost or gained depending on whether a commercial TDM exception is implemented.[2]

1.1 Scope of Activities Affected by the Absence of a Commercial TDM Exception

Without a commercial TDM exception, businesses operating in the UK would continue to face a legal barrier to creating new services based on systematically analysing large volumes of text, data, and media content. This risk would significantly limit activities that rely on automated extraction, aggregation, and interpretation of information at scale. Specifically, the commercial use of outputs from the following activities would continue to be curtailed:

- Automated Extraction of Insights from Large-Scale Text and Data Collections: Identifying patterns, relationships, and trends across vast datasets (e.g., research papers, financial filings, legal documents, customer feedback, historical records).
- Comparative and Longitudinal Analysis of Textual or Structured Data: Tracking changes in regulatory frameworks, legal interpretations, or market trends over time.
- Processing of Unstructured or Semi-Structured Data for Synthesis: Extracting structured insights from news articles, government filings, patents, and proprietary reports.

[2] The task here is distinct from that pursued in other recent discussions of the TDM exception currently under consideration in the UK Parliament, such as the UK Day One study (https://britishprogress.org/uk-day-one/copyright-ai-the-case-for-a-pro-growth-approach), which focuses upon comparing the effects of an opt-out and different options for the UK rule. We do not offer a view on the efficacy or otherwise of specific provisions of current proposals. We proceed on the assumption that it is possible to design and implement an effective commercial TDM exception in the UK, and we estimate what difference such an effective exception might make relative to a counterfactual scenario in which there is no exception.

- Automated Content Categorisation, Classification, and Summarization: Grouping and tagging massive volumes of text based on semantic meaning.
- Entity Recognition, Relationship Mapping, and Knowledge Graph Construction: Identifying entities (people, places, organisations) across datasets and linking them meaningfully.
- Machine-Learning-Based Information Extraction and Enrichment: Pre-processing and curating training data for AI applications that require high-quality structured input.
- Bulk Access, Processing, and Transformation of Digital Archives: Analysing historical texts, documents, and media at scale for research, journalism, or policy assessment.
- Cross-Language and Cross-Market Analysis of Information: Mining, translating, and comparing information from different jurisdictions or sources.

The UK does have a non-commercial TDM exception already in place. The lack of a commercial equivalent (of the sort that exists in the EU, Japan and Singapore) not only limits the work of businesses, it also undermines the commercialisation of work by non-commercial research institutions and complicates the partnerships that often bring together commercial and non-commercial capabilities for important projects.

If non-expressive use of open publicly-available web content is not allowed, any organisations wishing to conduct such activities as the basis for new digital services would need permission from every copyright holder for the often vast amounts of data needed. This would make conducting large-scale text and data analysis such as training leading AI models, and performing an assortment of other machine learning tasks, outright infeasible.

1.2 Clarifying the Scope of TDM-Impacted Activities

As an Expert Group study from the European Commission puts it: "*Text and data mining (TDM) is an important technique for analysing and extracting new insights and knowledge from the exponentially increasing store of digital data ('Big Data').*"[3] TDM plays a crucial role across multiple domains, facilitating the automated processing of vast amounts of text, data, and multimedia to extract meaningful insights. In AI development, TDM is instrumental in training machine learning models, enabling natural language processing applications, and refining large-scale data analysis systems. Similarly, in scientific research, it underpins systematic literature reviews, meta-analyses, and the automated extraction of key findings from thousands of academic papers, allowing researchers to synthesise knowledge efficiently.

In the legal and financial sectors, TDM is used extensively to analyze case law, track regulatory changes, and process financial filings. Compliance departments and financial analysts rely on these techniques to detect trends, assess risks, and ensure regulatory adherence across multiple jurisdictions. The healthcare and pharmaceutical industries also depend heavily on TDM, particularly in drug discovery, pharmacovigilance, and the automated review of clinical trials and medical literature, accelerating research and improving patient safety. As that same Expert Group report puts it: "*TDM is useful to researchers of all kinds, from historians to medical experts, and its methods are relevant to organisations throughout the public and private sectors. Because TDM research technology is not prohibitively expensive, it is readily available to lone entrepreneurs,*

[3] https://op.europa.eu/en/publication-detail/-/publication/d12e3edd-0960-46d1-a7ea-bda1b9cec42d/language-en

individual post-graduate students, start-ups and small firms. It is also amenable to playful and highly speculative uses, enabling research connections between previously unconnected fields."[4]

Without a TDM exception, organisations in these domains and others would face legal uncertainty in accessing and mining copyrighted material, leading to higher costs, longer processing times, and potential barriers to innovation. Even if all the material they needed to access and analyse were not protected by copyright, the need to go through the process of establishing that the material is not protected by copyright at scale would be a prohibitive expense. The lack of an exception would particularly affect areas where real-time data analysis is critical, forcing businesses, research institutions and scholars to seek costly individual agreements or limit the scope of their analytical work.

The potential economic value of the use of TDM is recognized as being significant. As the Expert Group report puts it "*On conservative assumptions (a narrow definition of the scope for TDM), a GDP gain in Europe 'of the order of magnitude of tens of billions of Euros' appears feasible.*"

Our report is focused on one specific metric: **investment in TDM-intensive activities**. This will have wider economic impacts including:

- Jobs and GDP associated with those investments themselves.
- Making the UK more attractive as a destination for complementary AI-related investments across the UK's £227bn digital economy.[5]
- Increasing access to sophisticated AI tools for UK businesses of all kinds,[6] with domestic developers better able to engage with the needs of UK users.

1.3 Approach

The approach follows these steps:

- Quantify Global Investment Trends: Establish baseline figures for AI and non-AI TDM-intensive sectors using publicly available reports. For AI, we use sector-specific investment figures reported in the Stanford AI Index (2022) and other relevant sources. For non-AI sectors, we draw on data from OECD, McKinsey, LexisNexis, and others.
- Clarify the Scope of TDM-Impacted Activities: Identify the specific activities within AI and non-AI sectors that are dependent on text and data mining (TDM), such as model training, compliance analysis, scientific literature reviews, and pharmaceutical research.
- Segment Global AI and Non-AI Investment into TDM-Intensive and Non-TDM Areas: For AI, we apply the percentages of expected TDM-sensitivity obtained in an expert survey. For non-AI sectors (such as scientific research and compliance), we use estimated TDM-dependence ranges (5–10 per cent) drawn from the sectoral analyses set out in Section 2.3 below.

[4] *ibid.*

[5] See: https://ccianet.org/research/reports/uk-digital-economy/

[6] See: https://ccianet.org/research/reports/tools-to-compete/

- Estimate UK Investment Shares for Each Scenario: We calculate the UK's share of global TDM-intensive investment under two scenarios:
  - Scenario A (With commercial TDM Exemption): The UK maintains its historical share of global investment in TDM-intensive activities.
  - Scenario B (Without commercial TDM Exemption): UK investment stagnates or declines in TDM-intensive activities, depending on sector dynamics and the absence of a TDM exemption.
- Calculate the Investment Gap: We quantify the difference in total UK investment between the two scenarios, providing an estimate of the potential loss of investment attributable to the absence of a TDM exemption.

1.3.1 Expert Survey

On behalf of CCIA, JL Partners conducted a survey of 500 developers, investors, and others working in the UK AI ecosystem.[7] This asked these experts a range of questions, including several specifically related to the analysis in this report. In particular they were asked their estimates of

- the proportion of the tasks associated with new or current AI investment that are reliant on using publicly available data that may be protected by copyright; and
- the proportion of current UK AI-related activities that would continue without the introduction of a commercial TDM exception.

Results included the following:

- 99 per cent of respondents indicated that AI development is to some extent reliant on text and data mining using publicly-available data, with 58 per cent considering it "very reliant."
- 94 per cent of respondents reported that their own work was very or somewhat reliant on models built using such techniques, with a 54 per cent considering it "very reliant."
- 76 per cent thought that if the United Kingdom chose not to introduce an equivalent protection for text and data mining to those in the EU, US and Japan, it would be an important signal and the sector would likely reconsider whether the UK is a competitive environment for AI investments.
- 64 per cent responded that if the UK does not introduce such a protection, then the Government's wider commitment to AI will seem a lot less credible.
- 83 per cent of respondents indicated that implementing a transparency requirement — whereby developers must disclose the sources of data used and explain how these sources contribute to the training of AI models — would be likely to result in delays to the deployment of AI services or features in the UK. Within this group, 36 per cent believed that such delays would affect "many" services and features.
- Thinking about the work they and their business do in the UK, if other jurisdictions implement protections for text and data mining and the UK does not, 66 per cent reported that projects would have to take

[7] See: https://ccianet.org/news/2025/05/uk-ai-ecosystem-poll-shows-the-importance-of-copyright-and-ai-regulation-for-the-governments-objectives-of-promoting-uk-innovation-and-economic-growth/

place in other countries, with 25 per cent indicating their view that "many" projects would have to do so.

1.4 Two Scenarios for What Would Happen to UK Investment in AI Absent a Commercial TDM Exception

Let us consider the potential impact of the absence of a commercial TDM exception on UK investment in AI and other TDM-intensive activities in terms of two potential broad outcomes: a stagnation-to-decline scenario, where investment in these areas ceases to grow but does not immediately decline, and a decline scenario, where investment falls as a result of the negative legal and regulatory environment.

We provide a bottom-up impact of a commercial TDM exception on future investment. However, it is also possible that the lack of a commercial TDM exception has contributed to the UK not attracting the same growth in AI investment as it might have relative to its European peers in recent years.

By focusing only on future investment, we are abstracting from what the total impact of a commercial TDM exception would be if the UK's lack of such an exception has already harmed investment materially and any past such impact could be reversed by a broader TDM exception being introduced now. So whilst in what follows we shall be assuming that the UK's lack of a commercial TDM exception has not yet harmed investment materially or that if there has been past harm, that cannot be reversed by a commercial TDM exception being introduced now, we note that that assumption may be conservative — it is possible that the EU's TDM provisions were one contributory factor to the increase in the gap already experienced over the past few years and unwinding this would lead to a short- to medium-term increase in investment additional to the impact estimated here.

1.4.1 Scenario 1: Stagnation of UK Investment in TDM-Intensive Activities

Under this scenario, UK investment in TDM-intensive activities would stagnate in the absence of a broader TDM exception — that is, investment levels would remain broadly flat in nominal terms over time, rather than growing in line with global or sector-specific trends.

The reasoning behind this scenario proceeds on the basis that even without a commercial TDM exception, the UK has continued to attract some investment in AI and data-intensive sectors to date, despite the lack of explicit legal certainty. This has occurred in part because the current legal environment is ambiguous: while technically there is no comprehensive TDM exception for commercial uses, the implications of this and the potential for developers to rely on other copyright exceptions has not been fully explored in the courts or confirmed by affirmative public policy change. In practice, this may have allowed firms to proceed with investments under the assumption that they would either not be targeted or that eventual government action would clarify or resolve the issue in a favourable direction.

From this perspective, a decision not to introduce a commercial TDM exception might be viewed as a missed opportunity rather than an active deterrent. In this view, although new investments might be less likely to flow to the UK relative to other jurisdictions (such as the US, Japan, or EU countries implementing the DSM Directive), existing levels of AI sector activity and investment would continue, but without future growth.

The absence of that broader TDM exception would thus lock the UK out of the global growth trajectory for TDM-intensive sectors, but not cause an immediate decline from current levels. UK-based firms might continue to seek workarounds (e.g. locating some activity in other jurisdictions), albeit potentially raising costs or inhibiting a part of their UK investment, and foreign investors might hold back on scaling up operations but not actively withdraw.

Thus, this stagnation scenario assumes that, in the absence of legal certainty, the UK's AI and TDM-intensive sectors would "hold position" but not benefit from the ongoing global expansion in AI-related and data-driven investments. In this scenario, the opportunity cost would be significant, as other countries gain relative to the UK, but the nominal value of UK investment would remain broadly constant.

1.4.2 Scenario 2: Decline in UK Investment in TDM-Intensive Activities

An alternative scenario is that UK investment in TDM-intensive activities would decline absent a commercial TDM exception. This reflects the possibility that a decision not to introduce a commercial TDM exception would not merely leave the UK "as is" but would actively discourage investment, for several interrelated reasons.

First, it is important to recognise that, as alluded to above, the current level of investment may be underpinned by expectations that a commercial TDM exception will eventually be introduced. At present, the legal situation is restrictive. Many firms may have proceeded on the assumption that, in line with international best practices and technological needs, the UK would in due course implement a broader TDM exception similar to those in other advanced economies. If a formal policy decision is made against a commercial TDM exception, this could reset market expectations in a way that signals the UK will remain a high-risk jurisdiction for TDM-reliant investments. In that case, some of the investment that is currently here on an "expectation basis" may well be withdrawn or shifted elsewhere.

Second, a decision not to introduce a commercial TDM exception would not be a neutral act — it would constitute a clear negative signal to investors and firms, particularly when set against the direction of policy travel in other markets. Jurisdictions such as Japan, Singapore, and the US (via the Copyright Act's flexible fair use doctrine) have clear frameworks permitting TDM, and the EU's DSM Directive includes specific TDM provisions. Against this backdrop, a UK decision to only offer a non-commercial TDM exception would mark it out as an outlier, likely influencing global AI companies and investors to reallocate funds and operations to more favorable environments.

Third, it is important to consider the dynamics of early-stage technology investment. In the initial, exploratory phases of a technology's development — as we have seen in AI — investment tends to be scatter-gun and geographically spread, with firms testing opportunities in multiple jurisdictions (reflecting, for example, where early stage capital is most available and academic researchers are based). However, as a sector matures and begins to consolidate, investment becomes more focused in jurisdictions seen as legally and commercially supportive of the relevant technologies. Thus, while the UK may have benefited from being part of the early "scatter" of TDM-related investment, as the sector consolidates, investment flows would increasingly shift toward countries that offer legal certainty and lower compliance risk for TDM. A refusal to introduce a commercial TDM exception could therefore accelerate the UK's exclusion from the global hubs of AI and data-driven innovation.

Fourth, a formal decision not to create a commercial TDM exception may embolden rights holders to take legal action against firms engaged in TDM-based activities. While, to date, ambiguity may have led rights holders to avoid confrontation, an explicit governmental stance against a commercial TDM exception could be interpreted as an invitation to enforce rights. The resulting increase in legal risk and uncertainty would likely deter both existing and potential investors, particularly in fields such as AI model training, legal and financial analysis, pharmaceuticals, and scientific research — all of which rely heavily on TDM. Firms might conclude that the costs of operating in the UK, given the legal risks and compliance barriers, are no longer justifiable.

Fifth, the international investment environment is highly responsive to regulatory signals. Investors, particularly those in emerging technologies like AI, are sensitive not only to current law but also to the direction of regulatory travel. An explicit UK decision not to introduce a commercial TDM exception would be interpreted as a strong and lasting signal that TDM-intensive activities are unwelcome. This could lead to a reallocation of investment to countries that are seen as long-term homes for AI and data science.

Finally, as TDM-intensive industries grow and consolidate globally, the UK risks being left behind in the next wave of investment. Jurisdictions with favorable TDM rules could capture both the next phase of large-scale AI training investments and downstream innovation in sectors such as healthcare, finance, and law. If firms shift their AI operations abroad, related investments, jobs, and technological development would likely follow, amplifying the initial effect. (This could also mean that if the UK does not introduce a commercial TDM exception now and misses out on this wave, there could be even more negative consequences in future waves, even if a commercial TDM exception were introduced by that point, because of the tendency for future investment to follow past investment.)

Taken together, these considerations suggest that a decline in UK investment is a credible outcome of refusing to introduce a commercial TDM exception. The contraction would reflect both immediate investor responses to negative signalling and longer-term structural shifts as AI and data-driven firms consolidate operations in more supportive jurisdictions.

The estimate of the participants in the JL Partners Expert Survey was sought via the following question:

- *Thinking further about the Tech and AI development sector. In a situation where there are no legal protections for text and data mining, then Tech and AI development firms will be unable to train on publicly-available data without a risk that they might breach copyright law. Under these conditions, what proportion of the tasks associated with an AI investment in this sector do you think will still be conducted in the UK?*

Their mean response was 59.6 per cent and their median 60 per cent. In other words, they estimate that 40 per cent of tasks associated with current AI investment would cease to be conducted in the UK, a 40 per cent drop.

1.5 Assumptions for Non-AI TDM-Intensive Investment in the Absence of a Commercial TDM Exception

For non-AI sectors that rely on TDM — including scientific and academic research, legal and financial analysis, and healthcare and pharmaceutical R&D — we assume that, in the absence of a broader TDM exception, UK

investment would stagnate in nominal terms. That is, investment in TDM-intensive activities would remain flat rather than growing over time, but would not experience a substantial decline. This assumption reflects the fact that many non-AI applications of TDM are linked to sectors where the UK-specific nature of data, regulatory obligations, and market needs make relocating activities less straightforward than in AI.

Furthermore, while the absence of a commercial TDM exception would create frictions, higher costs, and legal uncertainty, firms in these non-AI sectors are often embedded within the UK's research, regulatory, and healthcare systems, and thus would have fewer opportunities to shift investments abroad. In contrast to AI development, where investment decisions are highly sensitive to regulatory environments and globally mobile, non-AI sectors are likely to maintain their existing UK operations, but without expanding them as they might have done in a more permissive TDM regime.

Finally, given that our estimates of the share of investment in these sectors that is TDM-intensive are based on indicative assessments rather than detailed data, applying a modest decline to these already approximate figures would risk introducing a false sense of precision. For this reason, we adopt a stagnation assumption (i.e. that investment remains at the same level) as a reasonable and cautious estimate of the likely outcome for non-AI TDM-intensive investment in the absence of a commercial TDM exception.

2 Global Investment Trends in TDM-Related Activities

2.1 Subsectors of TDM-Related Activities

As explained above, TDM-related activities span multiple economic sectors that rely on the ability to extract, categorise, and synthesise vast amounts of textual and structured data. The areas we shall focus on in this report include:

- AI Development: This encompasses AI-driven applications such as Natural Language Processing (NLP), generative AI, recommendation systems, and automated data analysis. The OECD breaks down VC-related investment volumes in this area as follows:

Table 2-1: Global AI and Data-Related Investment by Industry, 2024 ($m)[8]

Category	2024 Estimated Investment ($m)
Mobility and autonomous vehicles	14,157
IT infrastructure and hosting	48,559
Healthcare, drugs and biotechnology	12,961
Media, social platforms, marketing	15,536
Financial and insurance services	6,720
Business processes and support services	9,973
Robots, sensors, IT hardware	11,743
Digital security	1,627
Logistics, wholesale and retail	2,000
Total	123,276

- Scientific & Academic Research: Systematic reviews, literature mining, and large-scale text analysis of research publications.
- Legal & Financial Analysis: Processing legal documents, case law, regulatory filings, and financial disclosures for compliance, risk assessment, and competitive intelligence.
- Healthcare & Pharmaceuticals: Text mining in drug discovery, pharmacovigilance, clinical trial reviews, and biomedical literature analysis.

2.2 TDM intensities/sensitivities in AI Investment

We obtain our estimate of the share of AI investment that is sensitive to the presence or absence of a commercial TDM exception from our Expert Survey. The experts were asked: "*Thinking about the Tech and*

[8] Source:https://oecd.ai/en/data?selectedArea=investments-in-ai-and-data&selectedVisualization=vc-investments-in-ai-by-industry

AI development sector — What proportion of the tasks associated with new or current AI investment are reliant on using publicly available data that may be protected by copyright?" The mean response was 67.5 per cent (median: 70 per cent). Given that global AI investment in 2025 is expected to be $320bn[9], that implies that $216bn of AI investment would be expected to be potentially sensitive to the presence or absence of a commercial TDM exception.[10]

2.3 Investment Levels and TDM intensities in non-AI TDM-Related Categories

- Scientific & Academic Research:
  - Global R&D expenditure reached $2.5 trillion in 2024 (OECD, 2024).
  - TDM intensity:
    - In scientific & academic research, TDM is increasingly used for systematic reviews, meta-analyses, and large-scale mining of academic literature, but much research activity (e.g., lab experiments, fieldwork) remains non-TDM-based.
    - While TDM is essential in some fields like life sciences, economics, and data-heavy disciplines, scientific and academic research covers a very broad range of activity and TDM that potentially impinges upon copyright is not relevant to many research areas — for example, TDM potentially impinging upon copyright is unlikely to have wide applicability in theoretical physics or in archaeology. Scientific and academic research is also more likely to benefit from the existing non-commercial TDM exception. We therefore deploy a modest 5 to 10 per cent range.
- Legal & Financial Analysis:
  - Compliance-related technology investments amount to approximately $500bn annually (LexisNexis, 2024).
  - TDM intensity:
    - Compliance, risk analysis, and legal research frequently involve mining regulatory filings, case law, and market disclosures, but a large proportion of sector investment remains focused on advisory, transaction-based, or purely internal functions.
    - TDM is growing in importance for automated contract review, regulatory monitoring, and fraud detection.
    - The data we shall use as our baseline is for regulatory technology (RegTech) spend. Not all RegTech is TDM-based. For example, monitoring tools, workflow automation, KYC systems, and risk scoring often do not involve large-scale TDM. However, regulatory text analysis, legal document review, contract parsing, real-time compliance checks based on new regulation, and

9 https://www.ft.com/content/634b7ec5-10c3-44d3-ae49-2a5b9ad566fa

10 320 x 0.675 = 216

cross-border regulatory research do rely heavily on TDM. Accordingly, we assume about 25 per cent of RegTech spend is TDM-sensitive.

- Healthcare & Pharmaceuticals:
  - Global pharmaceutical R&D spending was $251bn in 2022, with projected 5 per cent CAGR growth (Mckinsey, 2025).
  - TDM intensity:
    - TDM plays a role in drug discovery, pharmacovigilance, and automated review of medical literature, but the majority of pharmaceutical R&D focuses on lab-based work (e.g., clinical trials, molecule development) not dependent on TDM.
    - Given that literature mining and data analysis are critical but not dominant across total R&D spending, a 5 to 10 per cent TDM-intensity range reflects a balanced approximation.

2.4 Applying TDM-Intensity Estimates to Investment Figures

We now set out the total investment that is directly TDM-intensive within each category:

- AI Development: 67.5 per cent of $320bn in 2025 = $216bn globally.
- Non-AI:
  - Scientific & Academic Research: 5 to 10 per cent of $2.5 trillion = $125 to $250bn globally.
  - Legal & Financial Analysis: 25 per cent of $200bn = $50bn globally.
  - Healthcare & Pharmaceuticals: 5 to 10 per cent of $251bn = $12.6 to $25.1bn globally.

3 Estimated TDM Investment Impacts

The analysis of TDM-intensive investments spans AI-related and non-AI-related sectors. As we set out in Section 2.2, approximately 67.5 per cent of forthcoming AI development investment is expected to be TDM-intensive, while roughly 5-10 per cent of investment in Scientific & Academic Research, 25 per cent of Legal & Financial Analysis, and 5-10 per cent of Healthcare & Pharmaceuticals is also driven by TDM applications. In this section, we apply these proportions to estimate the level of investment in the UK under different scenarios.

3.1 AI-Related TDM Investment

Given that according to the Stanford AI Index (2022) global AI investment was $93.5bn in 2021[11] and it is projected to be $320bn in 2025[12], that implies a 36.0 per cent CAGR. We infer an estimate of $235bn for global AI investment in 2024. If 67.5 per cent of that is TDM-intensive, this results in $159bn in global TDM-exposed AI investment. The UK's 2 per cent share of this figure gives an estimated $3.2bn in UK TDM-intensive AI investment for 2024.

As we explained in Section 1.4, under Scenario B (Without Commercial TDM Exception), UK investment in TDM-intensive AI lies somewhere in the range between stagnation at its previous dollar level (here implying it remains at $3.2bn) and dropping by 40 per cent (here implying a fall to $1.9bn). By contrast, under Scenario A (With Commercial TDM Exception) in 2025 the UK would maintain its 2 per cent share of global investment in TDM-intensive AI, which as we saw in Section 2.4 is expected to be $216bn in 2025. That means the UK would secure $4.3bn of TDM-sensitive investment under Scenario A (With Commercial TDM Exception) —$1.1bn-$2.4bn more than under Scenario B.

3.2 Non-AI TDM Investment

The investment levels in non-AI TDM-intensive sectors have been estimated based on the proportion of sectoral investment that relies on TDM, as outlined in Section 2.3.

Scientific & Academic Research

Based on OECD data, global R&D expenditure reached $2.75 trillion in 2023[13], with an expected 5 per cent Compound Annual Growth Rate (CAGR).[14] Applying the 5 per cent CAGR, the R&D expenditure would be approximately $2.88 trillion in 2024. With 7.5 per cent of this investment (the mid-point of our 5 to 10 per cent range) assumed to be TDM-intensive, global TDM-related R&D spending is estimated at $216.6 bn. The

[11] https://hai-production.s3.amazonaws.com/files/2022-ai-index-report_master.pdf

[12] https://www.ft.com/content/634b7ec5-10c3-44d3-ae49-2a5b9ad566fa

[13] https://www.wipo.int/web/global-innovation-index/w/blogs/2024/end-of-year-edition

[14] https://www.wipo.int/web-publications/global-innovation-index-2024/en/global-innovation-tracker.html

UK accounts for approximately 3 per cent of global R&D, leading to a 2024 UK TDM-intensive investment estimate of $6.496bn under Scenario B (No Commercial TDM Exception).

For Scenario A (With Commercial TDM Exception), we apply a 3 per cent global real GDP growth rate to estimate a projected 2025 TDM-sensitive investment of $6.691bn, out of a total UK share of $89.0bn.

Legal & Financial Analysis

Regulatory and compliance technology spend is projected to be over $200bn by 2026.[15] Applying our figure of 25 per cent of regulatory and compliance technology spend being TDM-sensitive, we arrive at a figure of about $50bn for the TDM-exposed investment in this area.

The UK's share (3 per cent) of this global investment equates to $1.5bn in 2024 (Scenario B).

Applying the 3 per cent global real GDP growth rate, we estimate that under Scenario A, UK investment in TDM-intensive legal and financial analysis will rise to $1.545bn in 2025, out of a total UK share of $6bn.

Healthcare & Pharmaceuticals

Global pharmaceutical R&D spending was $251bn in 2022, with an expected 5 per cent CAGR.[16] Applying the 5 per cent CAGR, the investment would be approximately $276.7bn in 2024. Given a 7.5 per cent TDM-intensity assumption (the mid-point of our 5 to 10 per cent range), this results in $20.8bn in TDM-intensive investment worldwide. The UK's 3 per cent share of this investment is $623m under Scenario B.

Assuming the sector's 5 per cent growth rate continues, the UK's TDM-intensive investment would increase to approximately $654m in 2025.

3.3 Summary of results

Table 3-1: Estimating UK Investment Under Each Scenario

Sector	Scenario A (Commercial TDM Exception), TDM-sensitive (Total)	Scenario B (No Commercial TDM Exception), TDM-sensitive
AI-Related TDM Investment	$4.3bn ($6.4bn)	$1.9bn-$3.2bn
Scientific & Academic Research	$6.691bn ($89bn)	$6.496bn
Legal & Financial Analysis	$1.545bn ($6bn)	$1.5bn
Healthcare & Pharmaceuticals	$654m ($8.3bn)	$623m

[15] https://www.computer.org/csdl/magazine/co/2022/12/09963750/1Iz0RD7n7s4

[16] https://www.mckinsey.com/featured-insights/sustainable-inclusive-growth/charts/pharmas-rx-for-r-and-d

4 Conclusion: The Investment Gap

The updated analysis, incorporating revised estimates for sectoral growth and TDM intensity, shows that the absence of a broader TDM exception would result in a significant shortfall in UK investment across key sectors. By comparing Scenario A (with a commercial TDM exception) and Scenario B (without a commercial TDM exception), we estimate that:

- AI-Related TDM Investment would be $4.3bn in 2025 under Scenario A, compared to $1.9bn-$3.2bn under Scenario B, a difference of $1.1bn-$2.4bn (£0.8bn-£1.8bn)[17]. In Scenario A UK AI investment overall would be $6.4bn (2% of $320bn; of this $6.4bn, $4.3bn would be TDM-sensitive). So **our model suggests that the UK could lose 17-38 per cent of its total forthcoming AI investment for 2025**.
- For non-AI-related TDM investment the breakdown is as follows:
  - Scientific & Academic Research investment would grow to $6.691bn in 2025 under Scenario A, versus $6.496bn under Scenario B, leading to a shortfall of $195m (£150m).
  - Legal & Financial Analysis investment would increase to $1.545bn under Scenario A but remain at $1.5bn under Scenario B, representing a gap of $45m (£35m).
  - Healthcare & Pharmaceuticals investment would rise to $654m under Scenario A, compared to $623m under Scenario B, leaving a $31m shortfall (£25m).

Overall Investment Gap

A narrow TDM exception would restrict the ability of firms, researchers, and financial institutions to leverage large-scale data processing, hindering innovation and competitiveness in key industries. Without a commercial exception, the UK risks falling behind, not only in core AI investments but also in scientific research, legal & financial analysis, and pharmaceutical innovation—sectors that are increasingly reliant on large-scale data processing and AI-driven insights.

Implementing a commercial TDM exception would enable UK-based organisations to remain on par with international competitors, particularly in AI-driven sectors and data-intensive research fields. The absence of a commercial TDM exception risks stagnation or decline in UK investment across key TDM-intensive sectors. If that should happen, we estimate that, absent a commercial TDM exception, **UK investment in these sectors would be lower by approximately $1.4bn to $2.7bn (£1.0bn-£2.0bn) in 2025 than if a commercial TDM exception were implemented**.

[17] We use an exchange rate of £1 = $1.33.

5 Data Sources Used

- JL Partners UK AI Ecosystem Poll (2025)
- Stanford AI Index (2022)
- UK AI Sector Study (2024)
- OECD R&D Expenditure (2024)
- OECD.AI Policy Observatory (2024 data)
- Statista AI Market Forecasts (2024)
- LexisNexis Compliance Reports (2024)
- IMF Global Economic Outlook (2025)
- McKinsey (2025) — Pharmaceutical R&D Spending Data
- Analysis Group (2011) — Study on the Impact of US Fair Use Ruling on Cloud Investment
- Computer & Communications Industry Association (CCIA) (2014) — Study on Copyright Rulings and Cloud Investment in France and Germany

6 Appendix: Sense-Checking our Results

6.1 Sense-Checking Our Results via the Case Studies of the Impact of Copyright Changes on Venture Capital Investment and R&D

In this Appendix, to validate the plausibility of our estimated investment impact from a commercial TDM exception, we compare our results against two empirical studies examining how copyright policy changes affected venture capital (VC) investment in cloud computing. These studies allow us to estimate comparable investment impacts in the UK based on economic scaling, time adjustments, and sector growth trends.

- **US-Based Comparison — The Impact of a Fair Use Ruling on Cloud Computing Investment:** A study by the Analysis Group examined how a favorable Fair Use ruling in the US (2008) impacted VC investment in cloud computing.[18] The study estimated that the ruling increased VC investment by $728m–$1.3B over the following 2.5 years to 2011. To compare that figure with the $1.1bn-$2.4bn we identify here for AI investment, we need to apply a number of adjustments, as follows.

1. Annualizing the Estimate: Since the study covered 2.5 years, we calculate the annualised equivalent:

728/2.5 = 291

1300/2.5 = 520

So the annualised equivalent range is $290m-$520m

2. Scaling to the UK Economy: The UK economy was $3.411 trillion in 2024 versus $28.487 trillion for the US economy.[19] So the UK economy is 12.0 per cent of the size of the US'. Multiplying our range by 12 per cent converts it to £35m-$62m.
3. Next we note that the range above is for an impact in 2011. We want to compare to an impact in 2024. So we need to adjust for how much larger investment is in 2024 than in 2011. The ratio of total activity in the cloud computing sector for 2024 relative to 2011 (about a seventeen-fold increase) is likely to materially overstate the ratio of VC investment, because VC investment in the early phases of a sector's development will be a much higher percentage of output than when the sector is more mature. From 2023 to 2032 cloud computing is expected to grow at around 18 per cent per annum.[20] Additionally, the compound annual growth rate of investment in venture capital overall (across all sectors, not just cloud) is estimated at 17.56 per cent. We use this as our figure for converting 2011 impacts into 2024 impacts, implying a ratio of 8.2. Multiplying our range by 8.2 gives us $287m-$508m.
4. Next we adjust for the fact that the estimate in question concerns solely VC impact in cloud. We want the total investment in cloud. We assume VC investment is 20 per cent of total investment. That gives us a total UK cloud investment impact in 2024 of $1.4bn-$2.5bn per year.

18 https://www.analysisgroup.com/globalassets/content/insights/publishing/impact-copyright-policy-changes-venture-capital-investment-cloud-computing-companies.pdf

19 See https://www.worldeconomics.com/GDP/United%20Kingdom.aspx and

20 https://www.globalgrowthinsights.com/market-reports/cloud-computing-market-103249

- **France-Germany-Based Comparison — The Impact of Restrictive Copyright Rulings on Cloud Computing Investment:** A study by the Computer & Communications Industry Association (CCIA) examined how restrictive copyright rulings in France and Germany (2006–2010) reduced VC investment in cloud computing.[21] The study estimated an $87M total reduction in VC investment over multiple years. To compare that figure with the $1.1bn-$2.4bn we identify here for AI investment, we need to apply a number of adjustments, as follows.

1. Annualising the Estimate: Since the impact was spread across multiple years (4.5 years for Germany and 2 years for France), we calculate a weighted annualised impact:

87/((4.5+2)/2) = 27

So our annualised equivalent impact for France and Germany is $27m per year.

2. The sum of French and German GDP in 2024 is $7.602 trillion.[22] So the UK economy at $3.411 trillion is 45 per cent of their combined size. 27 x 0.45 = $12m.
3. The France-Germany figure is for 2010. At a 17.56 per cent CAGR that implies a 2024 equivalent figure will be 9.6 times as large as a 2010 figure. So our $12m for 2010 becomes $115m for 2024.
4. Assuming VC investment is 20 per cent of total investment, our $115m of VC investment becomes $575m of total investment.

Thus, we have considered two comparators to our $1.1bn-$2.4bn figure for the TDM impact on AI investment. One, focused on the impacts of fair use rules in the US on cloud computing investment would be equivalent to a $1.4bn to $2.5bn annual investment impact in the UK. Another, focused on the impacts of copyright rulings in France and Germany would be equivalent to $575m annual investment impact in the UK.

Our comparison methodology is rough in a number of places; we would not expect the TDM impact to be identical to either of these other impacts; and we would not expect impacts for any given measure in the UK to be identical to those in the US or in France and Germany. Furthermore, it is plausible that impacts of even the same restriction in the same place in 2011 and 2024 would not be proportionately the same.

These caveats noted, we consider the very rough similarity in our estimated impacts to the estimates provided in these other studies to suggest that our estimate here is likely to be of the right order of magnitude.

21 https://ccianet.org/wp-content/uploads/library/eu%20cloud%20computing%20white%20paper.pdf

22 See https://www.worldeconomics.com/GDP/france.aspx and https://www.worldeconomics.com/GDP/Germany.aspx