

UK Research Position Analysis

A Systematic Assessment of Vulnerability, Resilience, and Comparative Advantage

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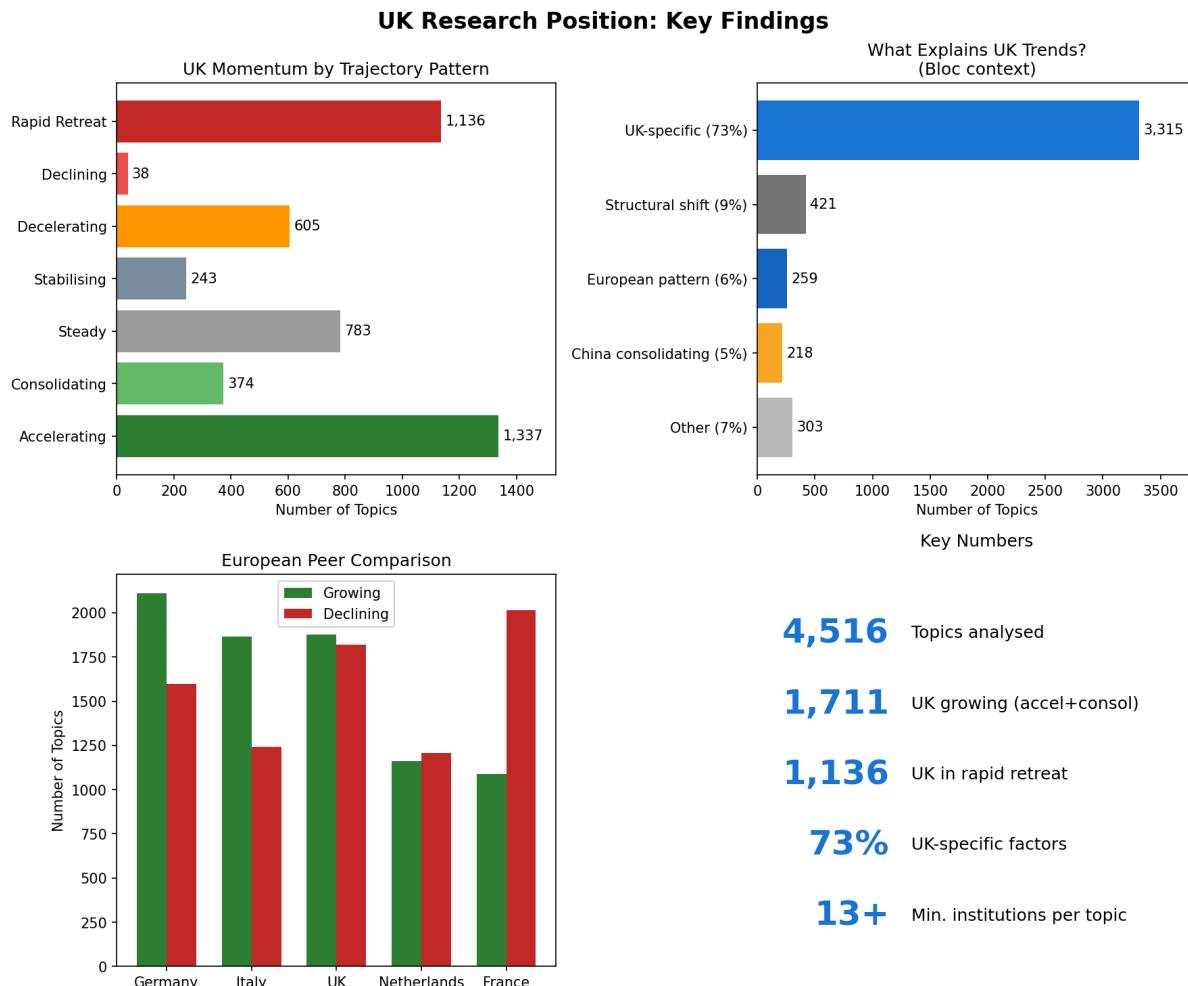
Executive Summary

We set out to identify vulnerabilities in the UK university research base – areas where institutional capacity is so concentrated that the loss of a single university could eliminate UK capability in that field. Instead, we found a system that is structurally resilient, with genuine areas of strength, but with specific areas requiring urgent attention.

Key Findings

1. **No single points of failure exist.** Every research topic with meaningful UK activity (≥ 50 papers published over five years) has capacity distributed across at least 13 universities. At least in terms of continued participation in global research at the *topic level*, the UK higher education system is structurally resilient.
2. **The UK has genuine areas of momentum.** We identified 1,711 topics where the UK's share of all research output is showing positive momentum – 1,337 accelerating (growing faster recently than historically) plus 374 consolidating (sustained growth since 2010). These include advanced materials, clinical research, global health, and AI applications.
3. **Some strategically important areas are in rapid retreat.** We identified 1,136 topics where the UK's share was stable or growing historically but is now actively declining. These include neural network applications, quantum information, and multiple areas of genetics research – areas of explicit UK strategic interest.
4. **Context matters: most UK patterns are UK-specific.** We compared UK trends against the three major science blocs (Europe, USA, China). In 73% of topics, UK trends do not follow broader bloc patterns – these are areas where UK-specific factors are driving outcomes. Only 9% reflect structural shifts where multiple blocs are declining together.
5. **China is consolidating its lead in specific areas, not everywhere.** In just 5% of topics, China is growing while other blocs decline. The narrative of China "taking over" science may be overstated: global research expansion is genuinely distributed across many countries.

6. **Within Europe, France is the cautionary tale.** Among major European research nations, France shows the most concerning trajectory – losing momentum in nearly twice as many topics as it's gaining (momentum score: -925). Germany and Italy are thriving (+513 and +623 respectively). The UK (+56) is barely net positive and should study what France is doing wrong and Germany doing right.



Full data explorer is available here: <https://ukswot-rj7xymfkzkwh7pk6ivygoa.streamlit.app/>

1) Approach and data

Research question

We sought to examine the UK university research base for structural vulnerabilities – specifically, research areas where institutional capacity is so concentrated that the loss of a single institution could eliminate UK capability entirely.

Data source

We used OpenAlex, an open catalogue of global scholarly publications covering approximately 300 million works. OpenAlex assigns each publication to one of 4,516 research topics organised in a four-level hierarchy:

Level	Count	Examples
Domain	4	Physical Sciences, Life Sciences, Health Sciences, Social Sciences
Field	26	Computer Science, Medicine, Physics and Astronomy
Subfield	252	Artificial Intelligence, Oncology, Quantum Physics
Topic	4,516	Computational Drug Discovery Methods, Environmental Sustainability in Business, Medieval Literature and History. The unit of analysis for this study.

Topics are specific enough to represent distinct research communities while broad enough to contain meaningful publication volumes. They provide enough granularity for targeted action by policymakers and funders to respond to variations and trends *within* broad disciplinary areas.

Scope

Parameter	Value	Rationale
Time windows	2020-2024 (primary), 2010-2024 (trajectories)	Balances currency with stability
UK institutions	Higher education only	Matches original research question
Activity threshold	≥50 UK papers per topic	Filters noise, ensures sustained activity, reasonably conservative view of criticality
Comparison countries	46 (all OECD + selected others)	Enables peer benchmarking

Analytical phases

The analysis proceeded in four phases:

1. **Concentration analysis** – For each topic, how many UK institutions contribute? Is capacity concentrated or distributed?
2. **Trajectory analysis** – Over 15 years, is each topic growing or declining globally? Is the UK's share increasing or decreasing?
3. **Country decomposition** – Who is driving global changes? Is the UK's trajectory shared with peers or unique?
4. **Comparative advantage** – Where is the UK gaining ground, not just keeping pace?

2) Resilience findings

Single points of failure

We examined all 4,516 topics for institutional concentration using the Herfindahl-Hirschman Index (HHI), a standard measure of market concentration.

Key Finding: At every meaningful activity level, UK research capacity is distributed across multiple institutions.

Activity Level	Minimum UK Institutions	Interpretation
≥50 papers	13	Well distributed
≥100 papers	19	Highly distributed
≥500 papers	42	Extremely distributed

No topic with at least 50 UK papers over five years has fewer than 13 contributing institutions. The feared "single point of failure" – a topic where one institution's withdrawal would eliminate UK capability – does not exist at any meaningful scale.

What about small topics?

Below the 50-paper threshold, we do find topics with fewer UK institutions. There are 186 topics with 3 or fewer UK institutions, and 117 with 2 or fewer. However, these are almost all very low-activity topics – only one topic has both ≤5 institutions and ≥10 UK papers ("Nursing care and research" with 4 institutions and 11 papers). This reinforces the resilience finding: where meaningful UK activity exists, institutional capacity is distributed.

Capability gaps

We identified 206 topics where the UK has minimal presence (<5 papers) despite significant global activity (>500 papers globally). On inspection, most fall into two categories:

- **Regional/country-specific studies** – Turkish literature and culture, Ukrainian legal studies, Brazilian education history. UK absence is appropriate; these are not gaps requiring action.
- **Classification artefacts** – Vague umbrella categories ("Diverse Perspectives in Modern Studies", "Multidisciplinary Research Papers Compilation") that reflect taxonomy issues rather than genuine research communities.

A smaller subset (approximately 47 topics) covers technical areas in engineering and computer science where UK absence is less obviously explained: IoT-based control systems, construction management and sustainability, polymer science applications, and advanced signal processing. Whether these represent strategic gaps or appropriate specialisation is a policy judgement – but they may warrant closer examination than the regional studies.

3) UK strengths

Beyond resilience, we identified areas where the UK is building momentum – where UK research share is growing faster now than in the past.

UK momentum: trajectory patterns

By comparing UK share trends in recent years (2016-2024) against historical trends (2010-2017), we classified topics by momentum:

Pattern	Topics	Definition
Accelerating	1,337	UK share growing faster recently than historically
Consolidating	374	Sustained positive growth (across early and recent periods)
Recovering	0	Was declining historically, now growing
Steady	783	Flat trajectory across both periods
Stabilising	243	Was declining, now flat (bleeding stopped)
Decelerating	605	UK share growth slowing
Declining	38	Sustained negative growth (across early and recent periods)
Rapid Retreat	1,136	UK share was stable/growing, now actively declining

The 1,711 topics showing positive momentum (Accelerating + Consolidating) represent areas where UK research is gaining ground – these are strengths worth nurturing. A further 243 topics have "Stabilised" after earlier decline.

Top accelerating topics

Topic	Field	UK Papers
Mycorrhizal Fungi and Plant Interactions	Agricultural Sciences	7,296
Microbial Natural Products and Biosynthesis	Biochemistry	3,362
Species Distribution and Climate Change	Environmental Science	3,305
Malaria Research and Control	Medicine	3,204
Antibiotic Use and Resistance	Medicine	3,421
Global Maternal and Child Health	Medicine	2,519
Historical and Cultural Archaeology	Arts & Humanities	2,891

Patterns in accelerating topics:

- Global health (malaria, TB, HIV, maternal health, antimicrobial resistance)
- Heritage and archaeology
- Data science applications
- Clinical and translational medicine

Competitive context: UK accelerating while blocs retreat

Of the 1,337 accelerating UK topics, we examined what the three major science blocs are doing:

Bloc Context	Topics	Interpretation
China stable	917	UK gaining while China holds position
China growing	410	Active competitive race – both gaining
China declining	10	UK capturing share China is leaving

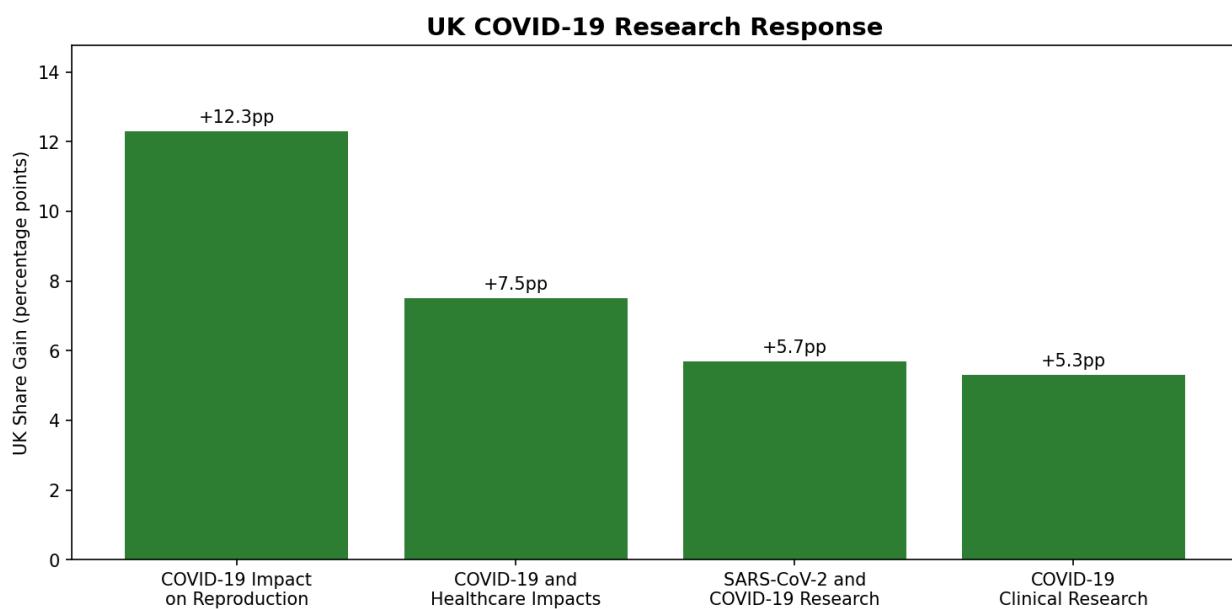
The 410 topics where both UK and China are accelerating represent active competitive spaces – areas of strategic importance where investment is paying off for multiple nations.

UK's notably strong COVID-19 response

UK dramatically increased its share in pandemic-related research:

Topic	UK Share Gain
COVID-19 Impact on Reproduction	+12.3pp
COVID-19 and Healthcare Impacts	+7.5pp
SARS-CoV-2 and COVID-19 Research	+5.7pp
COVID-19 Clinical Research	+5.3pp

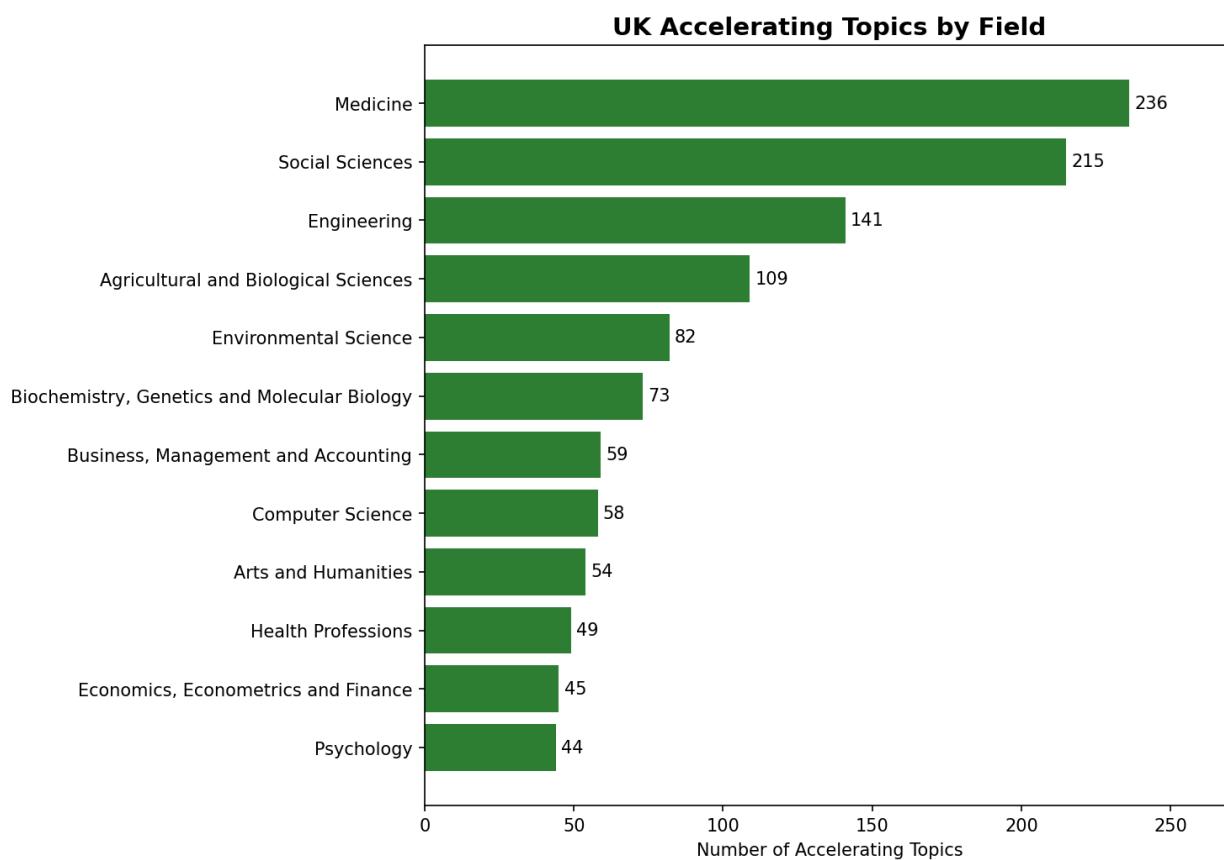
This likely reflects the UK's solid life sciences infrastructure, rapid ethical approval processes, health systems research capability, and timely state investment. These advantages are likely transferable to future health challenges.



Accelerating topics by field

Field	Accelerating Topics	Interpretation
Medicine	267	Strongest UK momentum
Engineering	156	Broad-based growth
Social Sciences	142	Traditional UK strength building
Environmental Science	98	Climate/sustainability focus
Computer Science	89	AI applications especially

UK momentum is strongest in medicine (particularly global health and clinical research), followed by engineering and social sciences.



4) Areas requiring attention

Rapid retreat: where the UK was strong but is now declining

The most urgent finding is not where the UK is weak, but where it was strong and is now losing ground. By comparing the **long-term trend** (2010-2017) against the **short-term trend** (2016-2024), we identified topics where UK momentum has reversed.

Topic	Field	Long-term	Short-term	Peak → Current	UK Papers
Galaxies: Formation, Evolution	Physics	+0.9pp	-2.4pp	15.5% → 6.5%	24,951
Particle Physics	Physics	+0.03pp	-0.6pp	4.7% → 2.3%	15,446
Genetic Associations and Epidemiology	Biochemistry	+0.6pp	-0.6pp	11.5% → 8.8%	11,674
Visual Perception and Processing	Neuroscience	-0.06pp	-0.5pp	8.9% → 6.3%	9,160

Topic	Field	Long-term	Short-term	Peak → Current	UK Papers
Cystic Fibrosis Research	Medicine	+0.2pp	-0.3pp	8.3% → 6.6%	7,860
Quantum Information and Cryptography	Computer Science	+0.06pp	-0.8pp	5.0% → 2.3%	7,347
Graphene Research and Applications	Materials Science	-0.02pp	-0.2pp	4.6% → 3.5%	7,461
Memory and Neural Mechanisms	Neuroscience	+0.2pp	-0.5pp	7.9% → 5.7%	6,274
Methane Hydrates	Environmental Science	+0.05pp	-0.5pp	9.7% → 1.8%	4,357
Algebraic Structures and Combinatorics	Mathematics	+0.3pp	-1.1pp	8.9% → 2.8%	3,704

These are not areas where the UK was always weak. They are areas where the UK had strong or stable positions that are now eroding. Several – Particle Physics, Quantum Information, Graphene – are areas of explicit UK strategic interest and government investment.

We identified 1,136 topics showing this "rapid retreat" pattern across all fields.

The slow bleed: stable UK share in rapidly growing fields

Beyond rapid retreat, 825 topics show a more subtle pattern: UK share stable while the global field grows rapidly. Nothing is "declining" – but the cumulative effect compounds over time.

Field	Topics	Average Global Growth
Computer Science	76	+206%
Materials Science	18	+202%
Business/Management	25	+180%
Engineering	66	+166%

Computer Science at 206% global growth with flat UK share means the UK's relative position is shrinking rapidly. If global output triples while UK output stays constant, the UK's share falls from (say) 5% to under 2%. Compounded over a decade, this is how countries go from "leading" to "participating." These topics don't trigger alarms because nothing is actively declining – but they may represent the larger strategic challenge.

Case study: AI & Machine Learning

AI Area	UK Trajectory
Core AI/ML, Neural Networks	Flat or declining share
Healthcare AI	Gaining share
Cancer Detection AI	Gaining share

Possible interpretation: UK AI research is increasingly application-focused rather than foundational. Whether this reflects comparative advantage (translation expertise) or concerning dependency (core advances come from elsewhere) is a policy judgement.

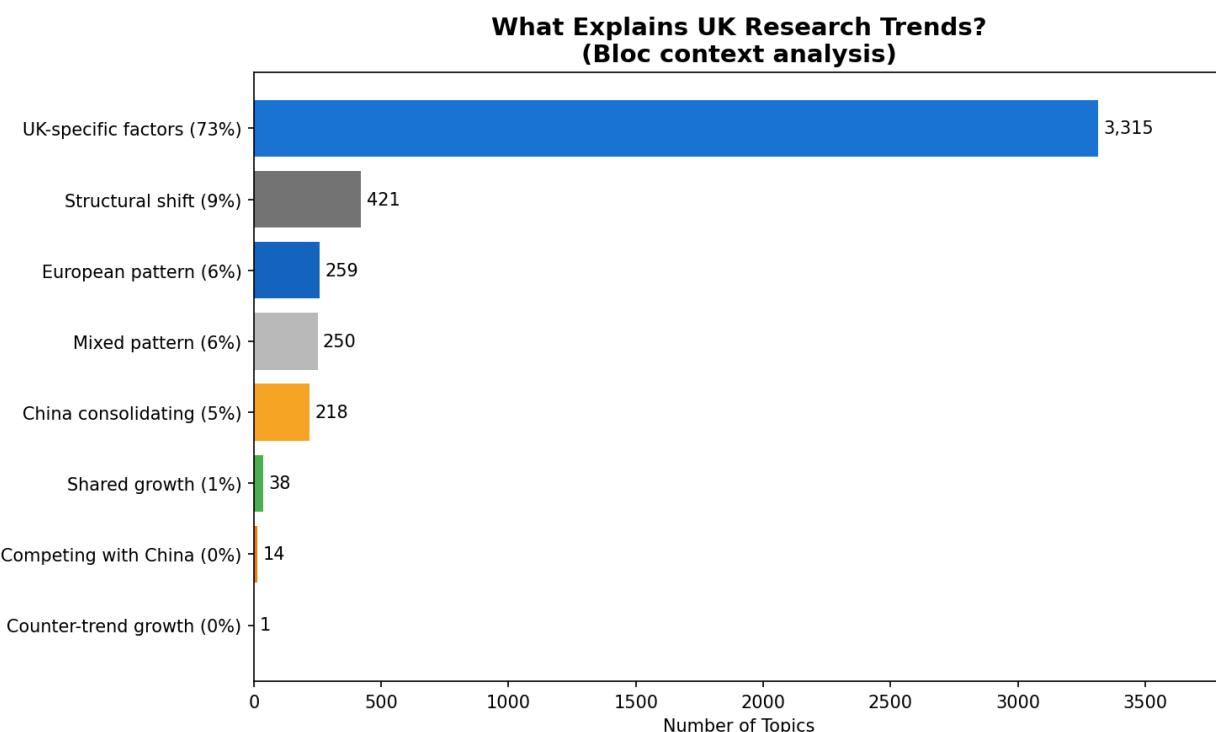
Bloc context: what's driving these retreats?

To understand whether UK retreats are UK-specific or part of broader patterns, we compared UK trends against the three major science blocs: **Europe** (EU27 + EFTA + Israel), **USA**, and **China**.

Interpretation	Topics	%	Meaning
UK-specific decline	3,315	73%	UK pattern not matched by blocs
Structural shift	421	9%	Multiple blocs declining together
European pattern	259	6%	UK follows broader European trend
China consolidating	218	5%	China growing while others decline
Mixed/other	303	7%	Complex patterns

73% of UK patterns are UK-specific – not explained by broader bloc-level shifts. This is important: it means UK-specific factors (funding, policy, talent) are driving most outcomes, not unstoppable global forces.

The 9% showing **structural shifts** (multiple blocs declining) may represent fields genuinely contracting or consolidating. The 5% where **China is consolidating** deserve attention but are far fewer than commonly assumed.

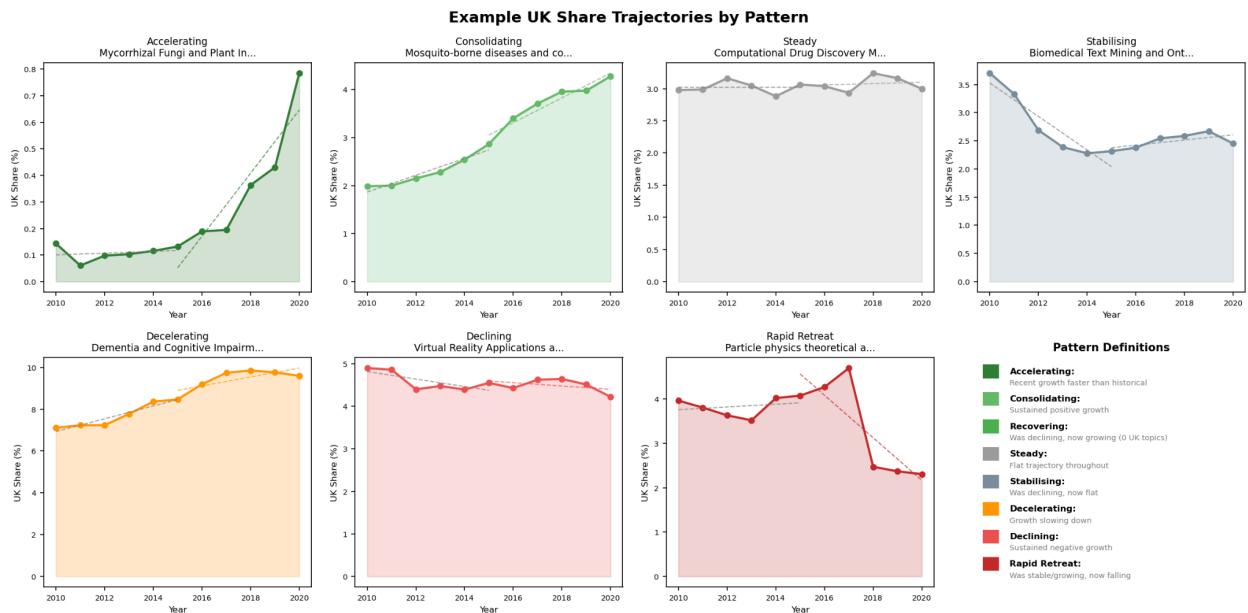
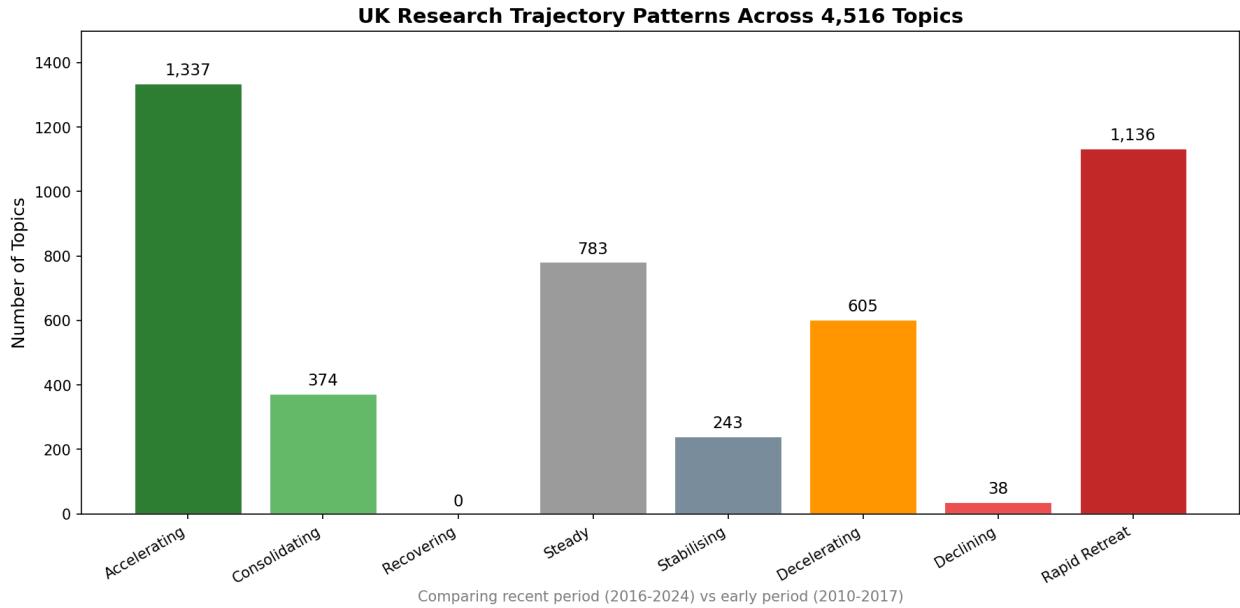


Trajectory patterns for prioritisation

Not all concerns are equally urgent. We classified topics into eight momentum patterns:

Pattern	Topics	Definition	Policy Relevance
Rapid Retreat	1,136	Had peak share historically, now declining	Urgent – was strong, now falling
Declining	38	Sustained negative growth across both periods	Chronic concern – long-term erosion
Decelerating	605	Recent trend less positive than historical	Watch closely – momentum fading
Stabilising	243	Was declining, now flat	Cautious optimism – bleeding stopped
Steady	783	Flat trajectory across both periods	Evaluate strategically
Consolidating	374	Sustained positive growth across both periods	Nurture – consistent strength
Accelerating	1,337	Recent trend more positive than historical	Celebrate – emerging strength

Why this matters: A topic in *rapid retreat* (UK share was stable for years but is now actively declining) requires urgent investigation. A topic that is *accelerating* (UK share rising faster than ever) is a success story in progress. The *stabilising* category identifies 243 topics where earlier decline has halted – potential turnaround candidates. Trajectory patterns reveal where attention is most needed.



5) Competitive context

Understanding whether UK trends are UK-specific or part of broader patterns is essential for policy. We analysed UK positioning against two complementary frames: the **three major science blocs** (Europe, USA, China) and **individual European peers**.

The three blocs

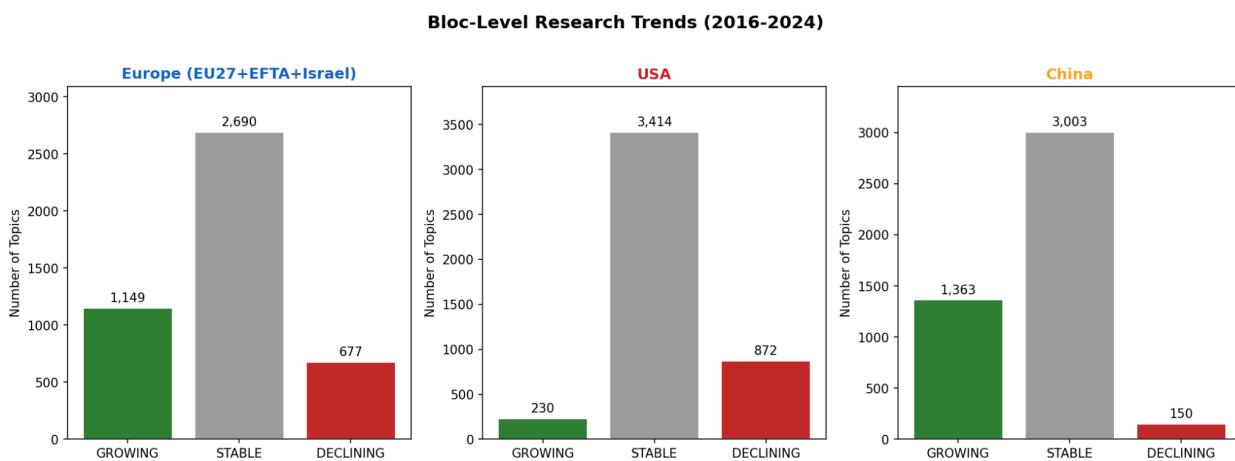
Following Paul Nurse's framing of global science as increasingly organised around three major blocs, we compared UK trends against:

- **Europe:** EU27 + EFTA + Israel (31 countries)
- **USA:** United States
- **China:** People's Republic of China

For each topic, we classified the competitive context:

Bloc Trend Pattern	Topics	Interpretation
Europe stable, USA stable, China stable	1,847	Steady state – no major shifts
Europe stable, USA stable, China growing	917	China expanding into stable space
Europe growing, others mixed	1,149	European expansion
Multiple blocs declining	421	Structural contraction
China growing, others declining	218	China consolidating

Key insight: Only 5% of topics show China consolidating while others retreat. The narrative of China "taking over" science is overstated. More common is stability (41%) or distributed growth.



China in perspective

China is the world's second-largest research producer (3.0 million papers in 2020-2024). Its growth has been substantial. However:

- **Growth is distributed, not China-dominated.** Of 1,758 high-growth topics, only 30 have more than half their growth attributable to China.
- **Other countries are growing faster.** India (+213%), Saudi Arabia (+431%), Turkey (+219%), and Brazil (+113%) all show higher growth rates than China (+48%).

- **China consolidation is real but limited.** In 218 topics (5%), China is genuinely gaining share while established blocs decline. These warrant strategic attention.

The more important question is not "is China growing?" (yes, as is everyone) but "where is China consolidating while the UK retreats?" These specific intersections deserve focused policy attention.

European peer comparison

Bloc-level analysis provides strategic context, but country-level comparison within Europe reveals competitive positioning among natural peers.

We compared trajectory patterns across 46 countries. Among major European research nations:

Country	Growing*	Declining**	Momentum Score
Italy	1,864	1,241	+623
Germany	2,112	1,599	+513
UK	1,877	1,821	+56
Netherlands	1,161	1,209	-48
France	1,089	2,014	-925

*Growing = Accelerating + Consolidating + Recovering **Declining = Decelerating + Declining + Rapid Retreat

Momentum score = growing topics minus declining topics. A positive score indicates a country gaining momentum in more areas than it's losing.

- **Italy and Germany are thriving** – gaining momentum in 500+ more topics than they're losing.
- **France is struggling** – declining in nearly twice as many topics as it's growing.
- **The UK is barely net positive** – the margin between growing and declining is slim (+56), far smaller than Germany's (+513).

France as cautionary tale

France's trajectory deserves attention. Among major European research nations, France is uniquely losing momentum across the board. This is not explained by bloc-level shifts – Germany, operating in the same European context, is thriving.

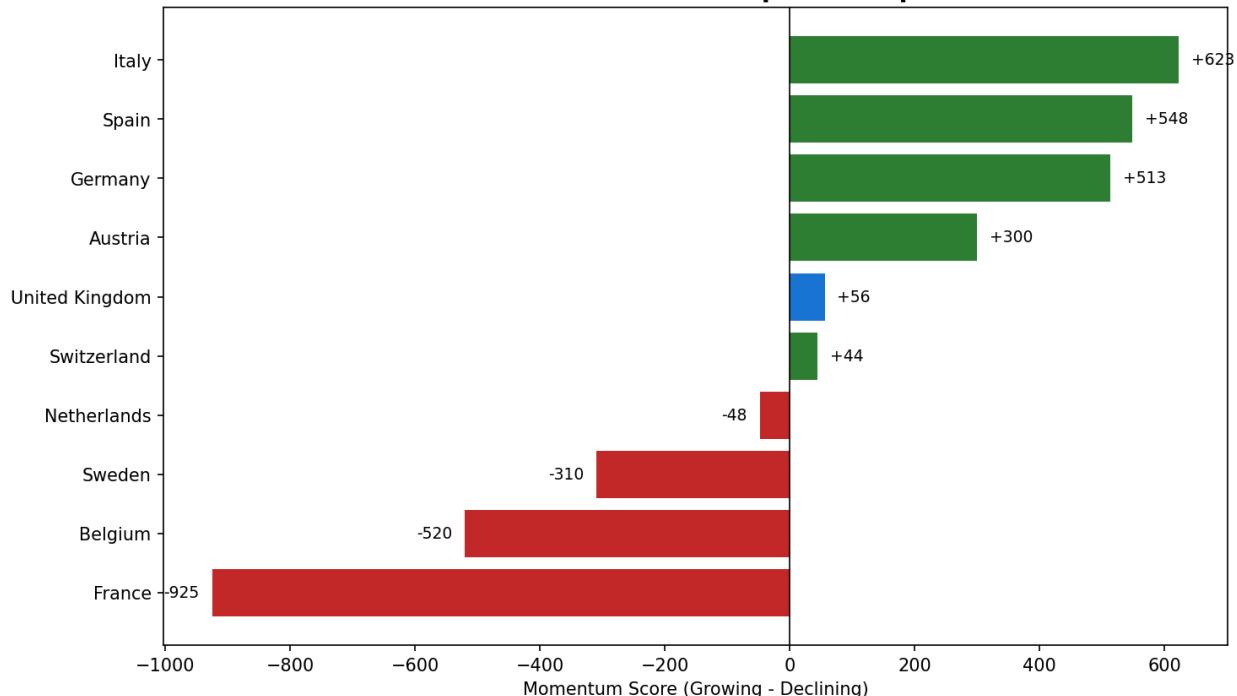
Potential factors worth investigating:

- Research funding structures and allocation mechanisms

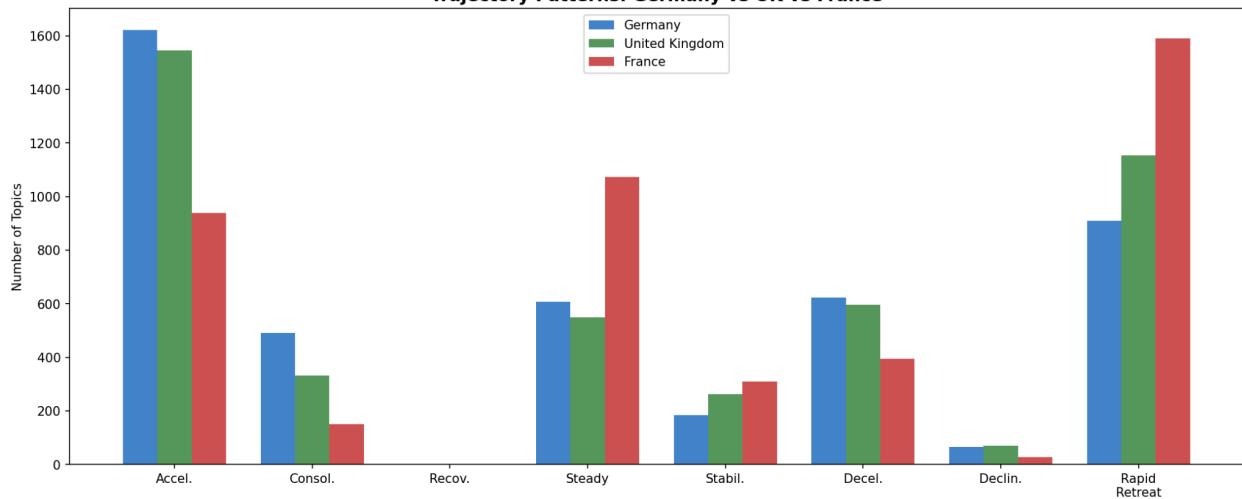
- University governance and autonomy
- Talent attraction and retention
- International collaboration patterns

The UK should study what France is doing wrong and Germany doing right. China's growth affects everyone equally; France's decline suggests country-specific factors the UK should seek to avoid.

Research Momentum: European Comparison



Trajectory Patterns: Germany vs UK vs France



6) International Context

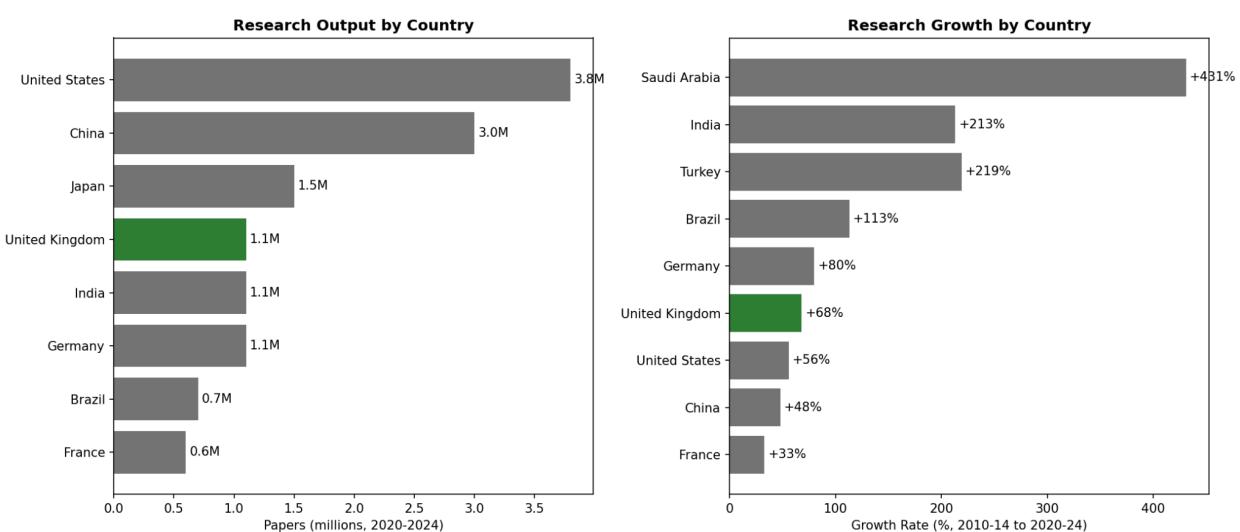
Research power rankings

The top research nations by output (2020-2024):

Rank	Country	Papers	Growth (2010-14 to 2020-24)
1	United States	3.8M	+56%
2	China	3.0M	+48%
3	Japan	1.5M	+194%*
4	United Kingdom	1.1M	+68%
5	India	1.1M	+213%
6	Germany	1.1M	+80%
7	Brazil	0.7M	+113%
8	France	0.6M	+33%

*Japan's figure very likely reflects improved database coverage rather than actual research growth.

Growth rates vary enormously. The established research powers (US, China, UK, Germany, France) grew 33-80% over the decade. Emerging powers (India, Brazil, Turkey, Saudi Arabia) grew 100-400%+. This context matters for interpreting "dilution" – when global research doubles or triples, maintaining historical share requires matching that growth.



Special Cases

Saudi Arabia (+431% growth): Massive research investment translating into broad presence. Now gaining share in 893 topics while losing in just 7. The risk is breadth without depth.

Singapore (+70% growth): More selective growth strategy. Quality over quantity, focused on strategic areas (materials, computer science, engineering).

India (+213% growth): Rapid expansion across virtually all fields. Gaining share in 2,722 topics, losing in only 115.

Brazil (+113% growth): Strong regional growth, particularly in tropical medicine, agriculture, and environmental science.

7) Policy implications

1. The UK system is resilient

The UK higher education system is structurally resilient. Capacity is distributed, single points of failure don't exist at meaningful scale, and the feared scenario of one institution's closure eliminating UK capability in a field is not a realistic concern.

This is a positive finding that deserves communication.

2. Build on momentum

The 1,711 topics showing positive momentum (1,337 accelerating + 374 consolidating) represent real strength worth nurturing:

- **Global health** – Malaria, TB, HIV, maternal health, antimicrobial resistance
- **Clinical research** – Demonstrated in COVID-19 response
- **Advanced materials** – Thermoelectrics, MXenes, polymers
- **Environmental science** – Climate, conservation, ecology
- **Heritage and archaeology** – Traditional UK strength

These are areas where UK-specific factors are driving positive outcomes. Understanding what's working in these fields could inform strategy elsewhere.

3. Investigate rapid retreat urgently

The 1,136 topics showing rapid retreat – where UK share was stable or growing but is now actively declining – require investigation. Several are strategically important:

Priority Area	Pattern	Policy Question
Particle Physics	Was flat, now declining	STFC funding implications?
Quantum Information	Was stable, now declining	Alignment with NQCC strategy?
Graphene	Was flat, now declining	Return on Manchester investment?
Genetic Epidemiology	Was growing, now declining	Genomics England coordination?

These are not abstract concerns – they involve substantial UK investment and strategic positioning.

4. Use competitive context for prioritisation

Not all retreats are equal. Bloc-level context distinguishes:

Context	Policy Response
UK-specific decline (73%)	Investigate UK factors – funding, talent, policy
Structural shift (9%)	Accept field contraction; reallocate resources
China consolidating (5%)	Strategic decision: compete or concede
European pattern (6%)	Coordinate with European partners

A UK-specific decline in a strategically important area warrants urgent attention. A structural shift affecting all blocs may call for graceful exit rather than futile investment.

5. Trajectory patterns guide urgency

Pattern	Policy approach
Rapid Retreat	Investigate urgently – was strong, now falling
Declining	Assess strategically – long-term erosion, decide whether to reverse or exit
Decelerating	Watch closely – momentum fading, early warning
Stabilising	Cautious optimism – bleeding stopped, potential turnaround candidate
Steady	Evaluate strategically – consistent trajectory
Consolidating	Maintain support – sustained strength worth protecting

Pattern	Policy approach
Accelerating	Nurture – momentum is building

A topic in "Rapid Retreat" requires different attention than one that is "Accelerating". The new "Stabilising" category (243 topics) identifies areas where earlier decline has halted – these may be turnaround candidates worth targeted investment. This distinction prevents misallocation of policy attention.

6. Learn from Germany, not just fear China

Among European peers, **Germany and Italy are thriving** (net momentum scores of +513 and +623 respectively) while **France is struggling** (momentum score of -925). The UK sits uncomfortably close to neutral (+56) – far from Germany's healthy position.

China's growth affects everyone equally – it's not a UK-specific challenge. France's decline, in the same European context where Germany thrives, suggests country-specific factors matter enormously. The UK should study:

- What is Germany doing right?
- What is France doing wrong?
- Which of the UK's current policies align with which trajectory?

8) Limitations and caveats

Data limitations

- **Coverage expansion:** OpenAlex coverage improved over time, potentially inflating apparent growth in some regions. We used share-based metrics to control for this, but artefacts may remain.
- **Topic classification:** Some topics may be artefacts of the classification system rather than genuine research communities.
- **Language bias:** English-language publications may be over-represented, affecting apparent positions of non-Anglophone countries.

Analytical limitations

- **Full counting:** We count papers by affiliation, not fractional contribution. A paper with UK and Chinese authors counts fully for both countries.
- **Quality vs quantity:** This analysis measures publication volume, not research quality or impact.
- **Lag effects:** Recent policy changes may not yet be visible in publication data.

Interpretation cautions

- **"Advantage" is not the same as "excellence":** Gaining share relative to peers doesn't mean the UK leads globally; it means the UK is improving relative to similar countries. This analysis does not control for academic impact (e.g. via citation-counting within fields)
- **Absence may be strategic:** Gaps in UK capability may reflect appropriate specialisation rather than problematic absence.
- **Short-term vs long-term:** A 15-year window may miss longer cycles of field evolution.

Appendix A: Methodology Summary

Phase 1: Concentration Analysis

- Extracted all UK-affiliated works (2020-2024) with topic assignments
- Filtered to higher education institutions
- Calculated per-topic: UK paper count, institution count, HHI, top institution share
- Applied vulnerability flags based on concentration thresholds

Phase 2: Trajectory Analysis

- Built 11 rolling 5-year windows (2010-2014 through 2020-2024)
- Calculated share-based metrics to control for coverage expansion
- Fitted linear regression to derive trajectory slopes
- Classified topics by lifecycle (growing/declining/stable) and UK position

Country-Level Trajectories

- Calculated trajectory patterns for 46 comparator countries
- Compared early period (windows 0-5, 2010-2017) against recent period (windows 6-10, 2016-2024)
- Classified momentum into 8 patterns: Accelerating, Consolidating, Recovering, Steady, Stabilising, Decelerating, Declining, Rapid Retreat

Bloc Trend Analysis

- Defined three major science blocs following Paul Nurse framing:
 - **Europe:** EU27 + EFTA + Israel (31 countries)
 - **USA:** United States
 - **China:** People's Republic of China
- Calculated bloc-level share trends for each topic using recent 5-window period (2016-2024)
- Classified bloc trends as GROWING ($>0.5\text{pp/window}$), DECLINING ($<-0.5\text{pp/window}$), or STABLE
- Generated interpretation categories: UK-specific decline, structural shift, European pattern, China consolidating, etc.

Phase 3: Country Comparison

- Compared UK trajectories to 46 comparator countries
- Calculated momentum scores (accelerating - rapid retreat) for each country
- Identified France as cautionary tale, Germany as positive example
- Calculated comparative advantage metrics
- Built country profiles showing aggregate share dynamics

Appendix B: Key definitions

Term	Definition
Three blocs	Europe (EU27+EFTA+Israel), USA, and China – the major science powers
UK-specific decline	UK trend not explained by bloc-level patterns (73% of topics)
Structural shift	Multiple blocs declining together; field contracting globally
China consolidating	China growing while other blocs decline (5% of topics)
European pattern	UK following broader European trend (6% of topics)
HHI	Herfindahl-Hirschman Index; sum of squared market shares; measure of concentration
Rolling window	5-year period used for calculating share; 11 windows from 2010-14 to 2020-24
Early period	Windows 0-5 (roughly 2010-2017)
Recent period	Windows 6-10 (roughly 2016-2024)
Accelerating	Recent trend more positive than early trend (UK share rising faster now than historically)
Consolidating	Sustained positive growth – both early and recent trends are positive
Recovering	Early trend was negative but recent trend is positive (turnaround)
Steady	Flat trajectory across both early and recent periods
Stabilising	Early trend was negative but recent trend is flat (bleeding stopped)
Decelerating	Recent trend less positive than early trend (momentum fading)
Declining	Sustained negative growth – both early and recent trends are negative
Rapid Retreat	UK share peaked historically and recent trend is now negative (was strong, now falling)
Momentum score	Growing topics (Accelerating + Consolidating + Recovering) minus Declining topics (Decelerating + Declining + Rapid Retreat)
Momentum score	Topics accelerating minus topics in rapid retreat; positive = net gaining momentum