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The Defence Industry and its Economic Geographies

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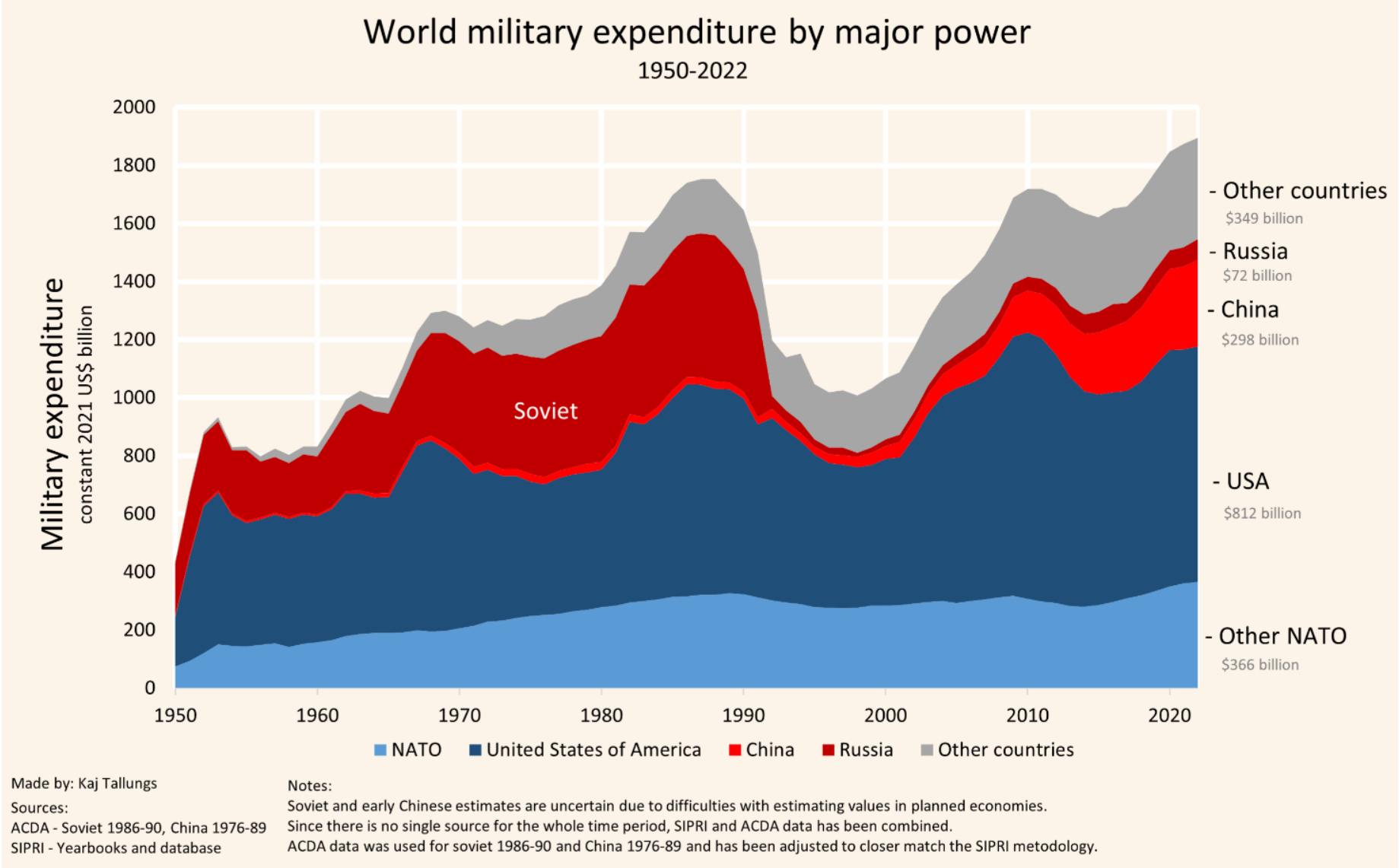


Source: Tallungs 2023

Why studying the defence industry as economic geographer? Why studying industries in general as economic geographer?

Reacting to changing societal needs and challenges

Economic geography's research objects (Schamp 2005):
The firm
The region
The industry

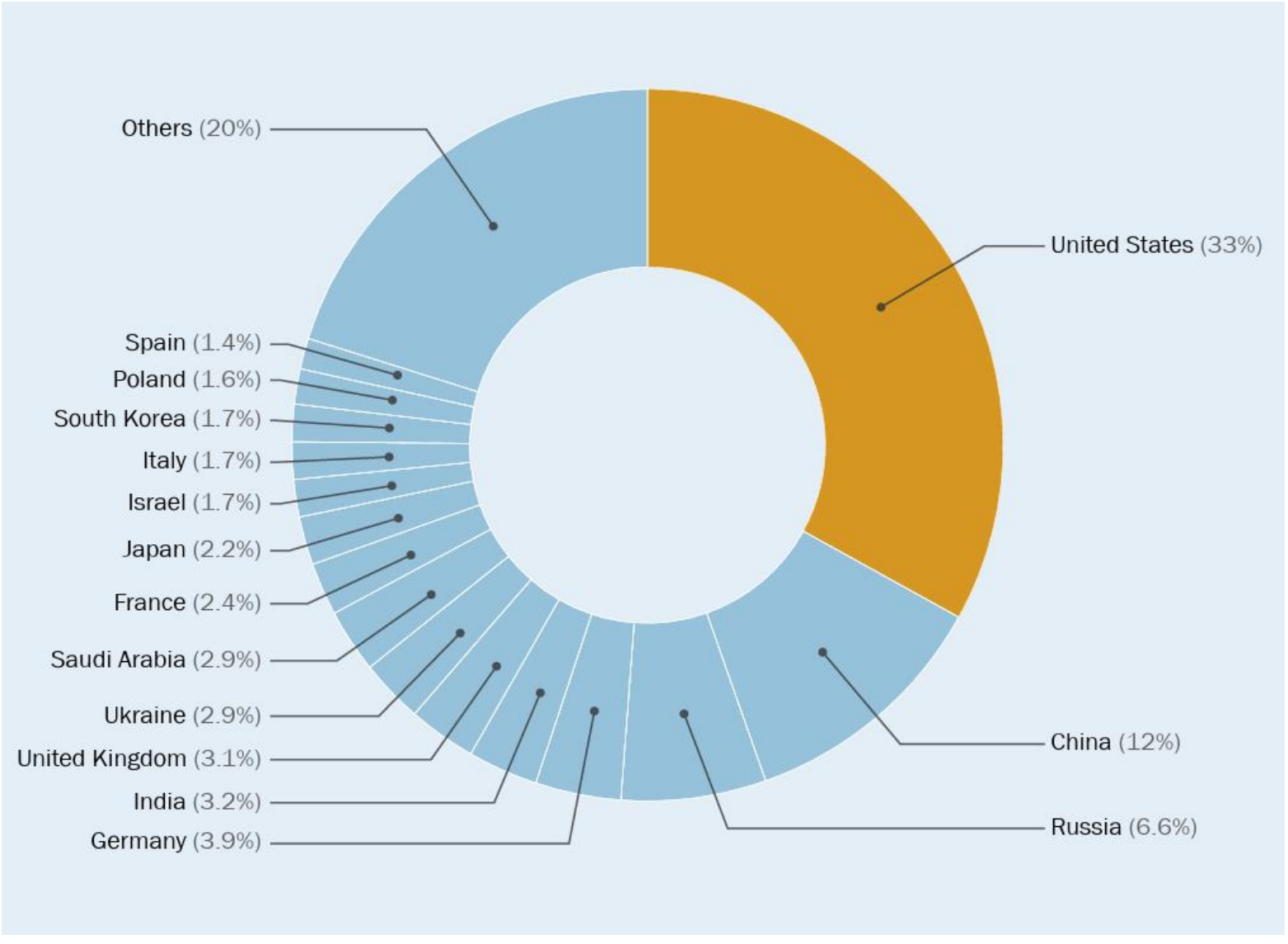
Why does it make sense to study industries, in general (Dicken 2017)?

1. Introduction
2. The Defence Industry and its Specific Characteristics; Towards New Defence?
3. Economic Geography and the Defence Industry
4. Economic Geography and Recent Potentially Relevant Theorizing
5. Conclusions

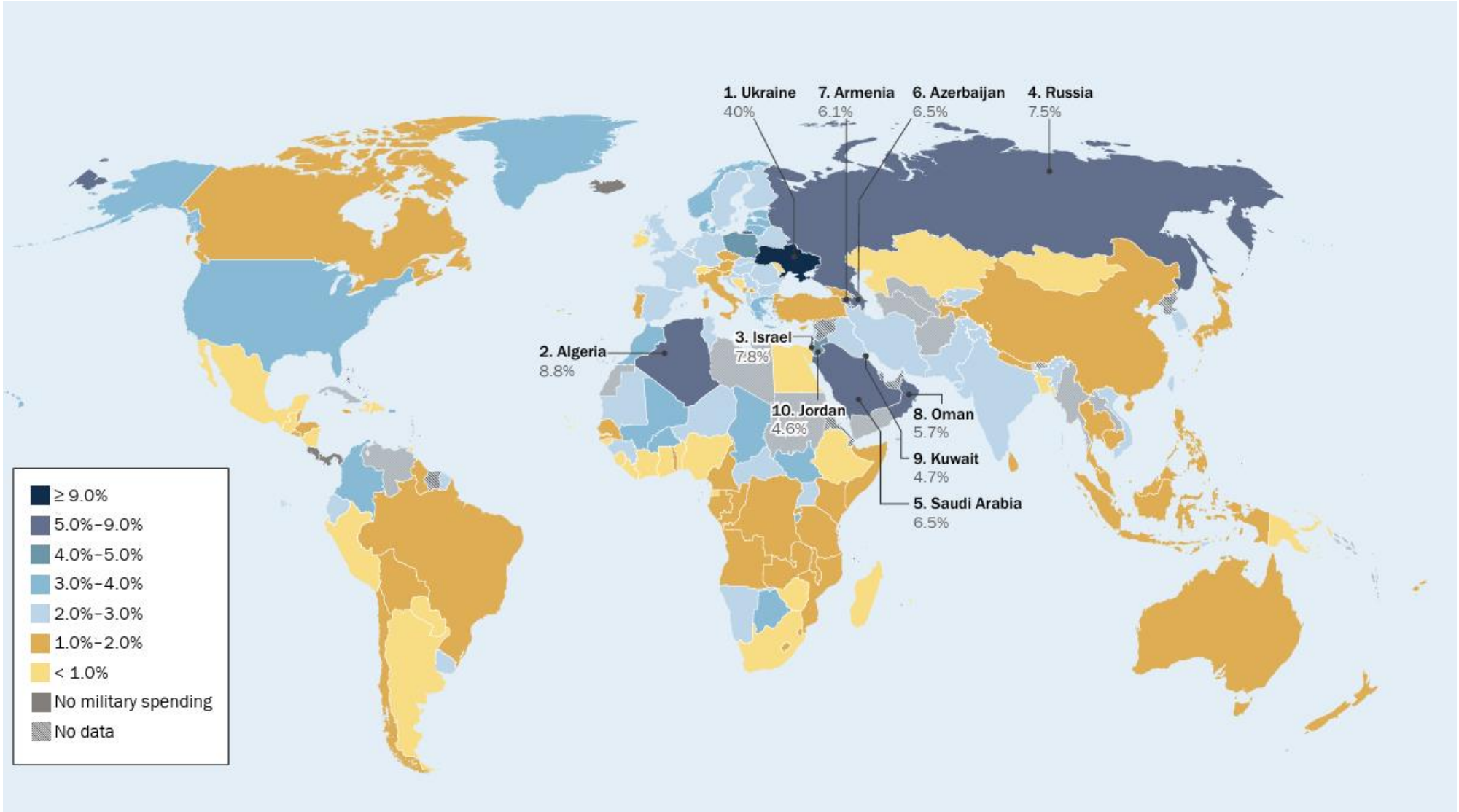
2. The Defence Industry and its Specific Characteristics; Towards New Defence?

Some key characteristics

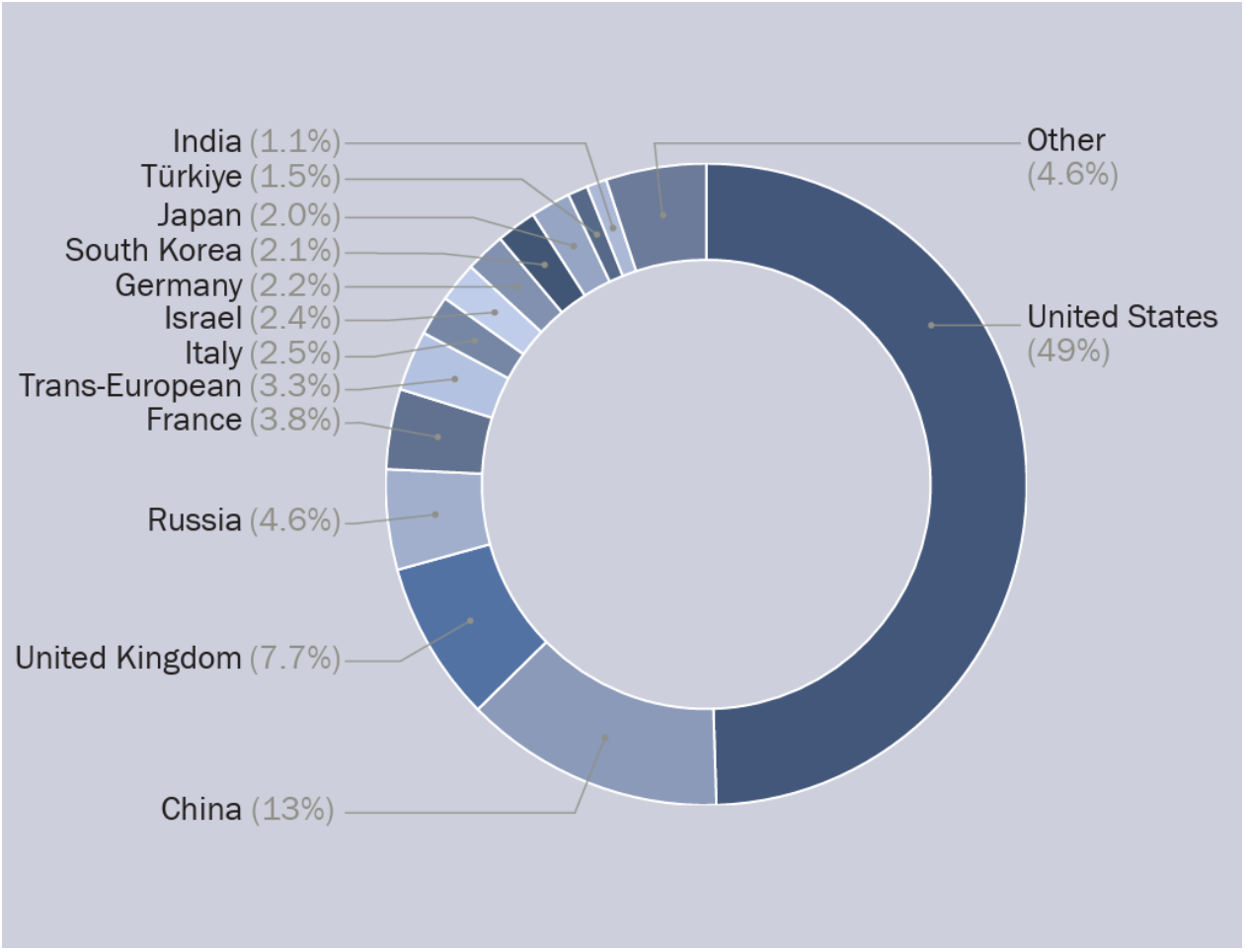
- Heterogeneous products
- Strong concentration
- Specific market
- Strict procurement regulations
- High entry barriers
- Cost plus
- Technological spin-offs



Source: SIPRI 2026



Source: SIPRI 2026



Source: SIPRI 2025

Rank[a]		Company[b]	Country[c]	Arms revenues, 2024	Arms revenues, 2023[d]	Change in arms revenues, 2023–24 (%)	Total revenues, 2024	Arms revenues as a % of total revenues, 2024
2024	2023							
1	1	Lockheed Martin Corp.	United States	64 650	62 630	*3.2*	71 040	*91*
2	2	RTX	United States	43 600	41 870	*4.1*	80 740	*54*
3	3	Northrop Grumman Corp.	United States	37 850	36 630	*3.3*	41 030	*92*
4	6	BAE Systems[e]	United Kingdom	33 790	31 600	*6.9*	35 400	*95*
5	5	General Dynamics Corp.	United States	33 630	31 100	*8.1*	47 720	*70*
6	4	Boeing	United States	30 550	32 030	*–4.6*	66 520	*46*
7	7	Rostec[f]	Russia	27 120	21 450	*26*	38 890	*70*
8	9	AVIC[g]	China	20 320	20 590	*–1.3*	81 290	*25*
9	8	CETC	China	18 920	21 110	*–10*	55 230	*34*
10	11	L3Harris Technologies	United States	16 210	15 200	*6.6*	21 330	*76*
11	10	NORINCO	China	13 970	20 310	*–31*	61 580	*23*
12	13	Leonardo	Italy	13 830	12 560	*10*	19 210	*72*
13	12	Airbus	Trans-European[h]	13 370	13 210	*1.2*	74 890	*18*
14	15	CSSC[g]	China	12 330	11 340	*8.7*	49 630	*25*
15	16	Thales	France	11 800	10 600	*11*	22 260	*53*
16	17	HII	United States	10 280	10 610	*–3.1*	11 540	*89*
17	14	CASC[g]	China	10 230	12 200	*–16*	34 100	*30*
18	19	Leidos	United States	9 370	8 990	*4.2*	16 660	*56*
19	23	Amentum[i]	United States	8 330	8 200	*1.6*	13 860	*60*
20	26	Rheinmetall	Germany	8 240	5 620	*47*	10 550	*78*

Source: SIPRI 2025

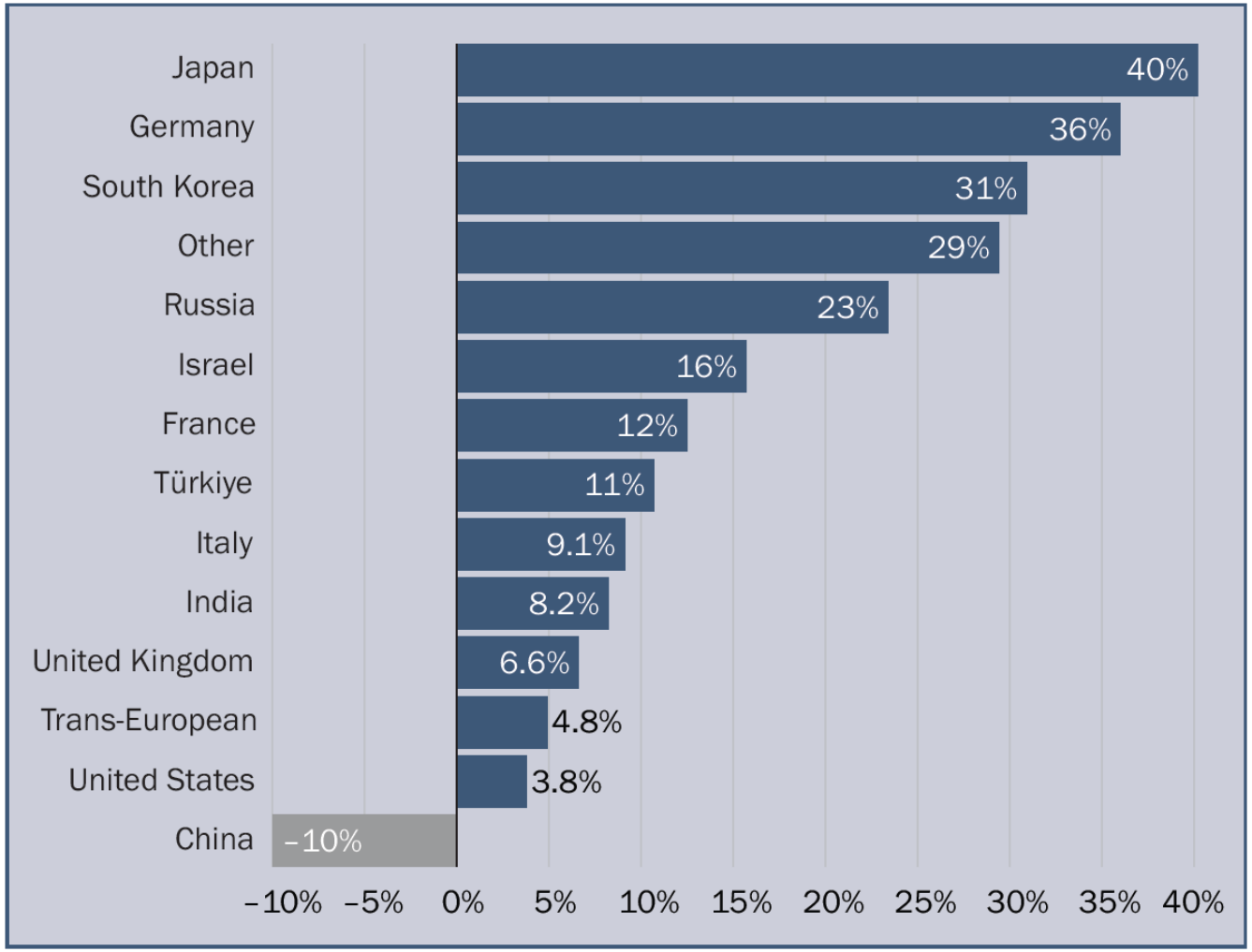


Figure 2. Percentage change in the arms revenues of companies in the SIPRI Top 100, by country, 2023–24

Source: SIPRI 2025

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New technology and the U.S. military industrial complex

J Paul Dunne and Elisabeth Sköns

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Defense & Security Analysis

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"New Defence": enter the GCC states?

Ash Rossiter & Martin Novella

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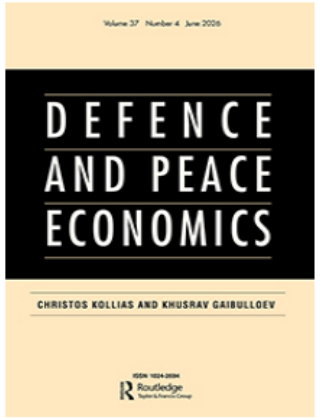
To link to this article: https://doi.org/10.1080/14751798.2025.2558384

Key characteristics (Rossiter & Novella 2025)

- Use of civil technologies applied to defence (spin-ins)
- Software-defined engineering
- Financing model based on private funds
- Pressure for reforming defence acquisition/procurement systems



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Defence and Peace Economics

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Redefining the defense industry: an empirical analysis of new defense firms in Europe

Josselin Droff, Lucie Béraud Sudreau, Julien Malizard & Eva Szego

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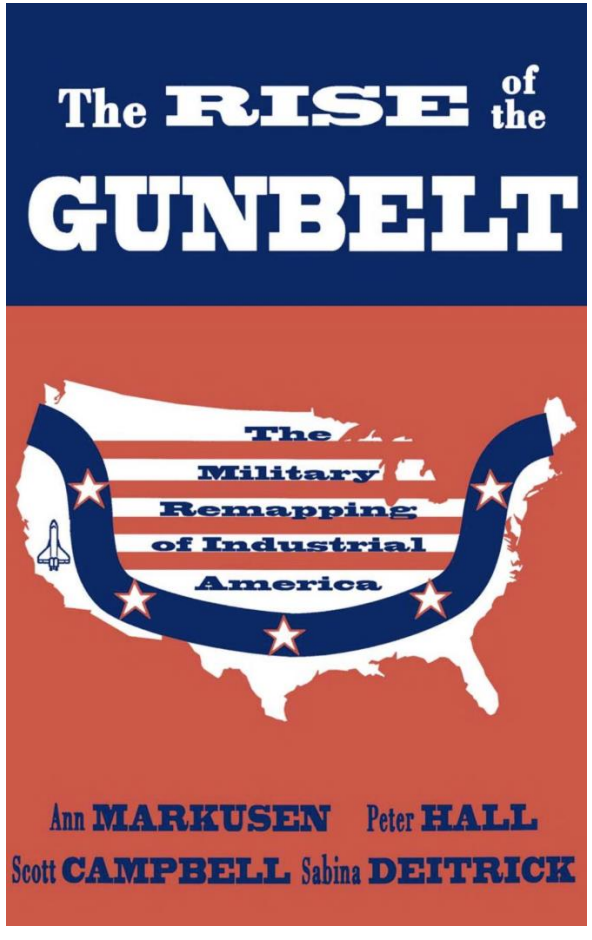
To link to this article: https://doi.org/10.1080/10242694.2026.2692713

Table 1. New defense: examples of domains, capabilities, products and firms.

Domain	Capabilities (examples)	Products	Challengers New entrant firms	Challenged Historical Defense firms
Air	Air strikes, cyber warfare, ISR, scouting, . . .	UAV (Large drones)	Destinus (Netherlands, formerly Switzerland) Delair (France) Tekever (Portugal)	Airbus (Europe) Dassault aviation (France) BAE (UK) Safran (France)
Air	ISR	HAPS, Airships	Kelluu (Finland) A-NSE (France) Stratosyst (Czech Republic)	Airbus (European) Thales Alenia Space (France – Italy)
Sea	Mine warfare, seabed warfare, ISR Surveillance (sea, ports, seabed)	USV, UUV ROV	Marine Instrument (Spain) Hydro Surv (UK) Seaber (France)	Naval Group (France) BAE (UK) Kongsberg (Norway)
Land	Transport, ground combat, mining, ISR	UGV	Milrem (Estonia)	KNDS (France – Germany) Rheinmetall (Germany) John Cockerill (Belgium)
Space	Space war, ISR, communication	Small satellites, mini or reusable launchers	Unseenlabs (France) EnduroSat (Bulgaria) Exolaunch (Germany)	Airbus Defense and Space (European) OHB (Germany) Ariane Group (France – Germany)

Source: Droff et al. 2026

3. Economic Geography and the Defence Industry



Pergamon

Geoforum, Vol. 27, No. 2, pp. 205–223, 1996

0016–7185/96 $15.00 + 0.00

S0016–7185(96)00007–3

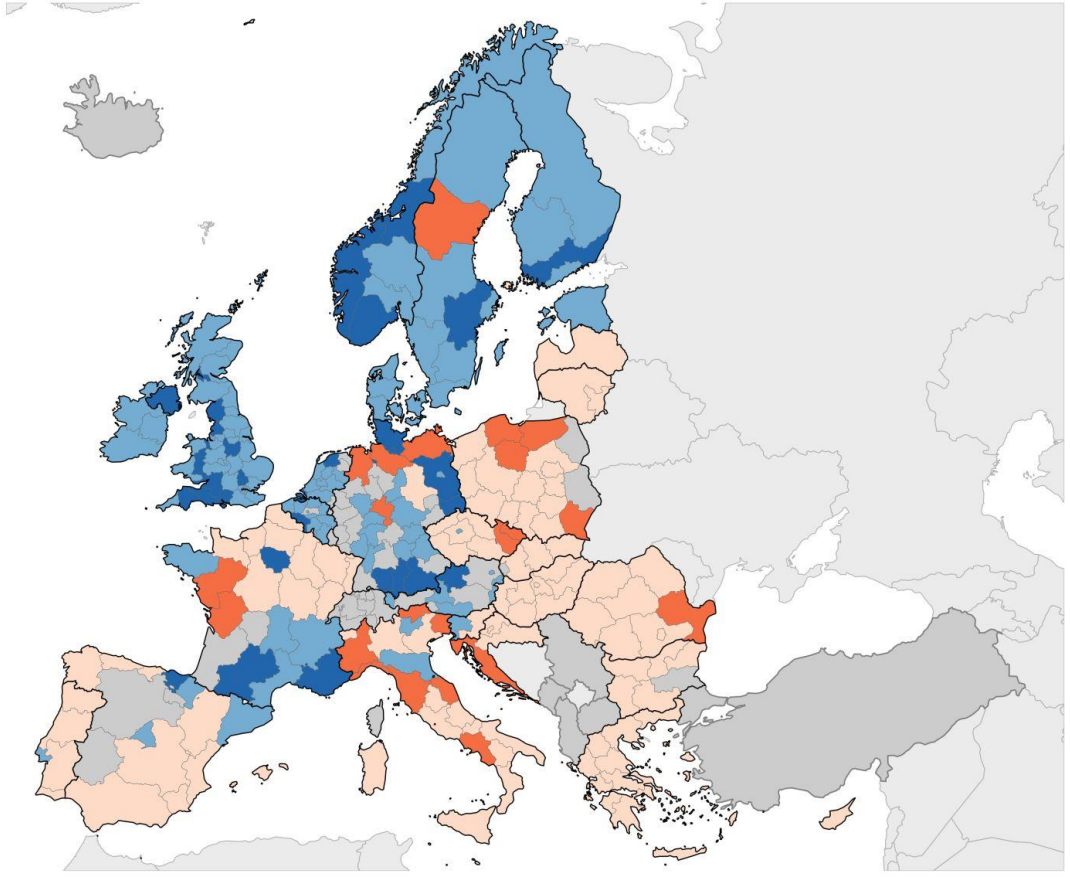
Reasons for the Genesis of High-Tech Regions—Theoretical Explanation and Empirical Evidence

ROLF STERNBERG,* Cologne, Germany

Malecki (1991:183): "on the whole, much of what is considered 'high technology' is military in character, masked by the nature of industrial and occupational categories ..."

which is „... overwhelmingly important, yet strangely neglected" (Markusen et al. 1991:3).

The defence dividend: industrial capacity and innovation readiness across EU regions



	High capacity	Low capacity
High innovation	Defence-ready innovators	Innovation strength, no capacity
Low innovation	Defence capacity, low tech	Low exposure

Defence-innovation typology

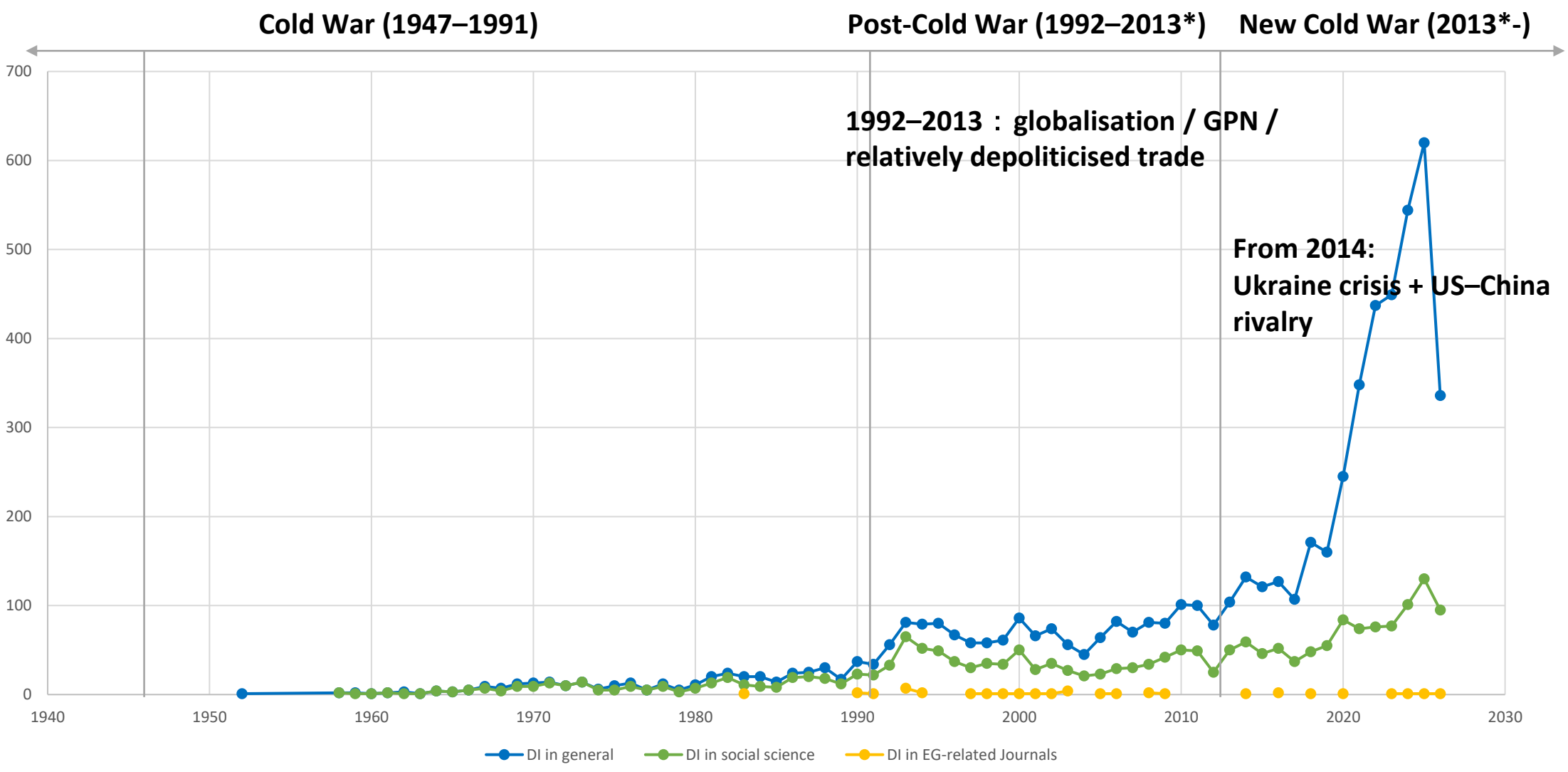
- **Defence-ready innovators** — *High capacity · High innovation*
- **Defence capacity, low tech** — *High capacity · Low innovation*
- **Innovation strength, no capacity** — *Low capacity · High innovation*
- **Low exposure** — *Low capacity · Low innovation*
- **No data** — *SBS suppression or missing coverage*

efence industrial capacity: NACE C30 (transport equipment excl. motor vehicles: aircraft, ships, military vehicles) as % of total manufacturing employment, avg 2015–2020. Threshold: ≥1% of manufacturing employment (~top 8% of regions). Source: Eurostat SBS.
Innovation index: Regional Innovation Index 2025 relative to EU27 average (EU27 = 100); threshold: regional median. Source: EC Regional Innovation Scoreboard 2025.
ote: RIS reports at NUTS1 for AT, BE, DE, FR, ES, FI, LU, LV, EE, CY, MT, PT, UK — NUTS2 regions inherit parent NUTS1 score. No data: SBS confidentiality suppression.
Data: Eurostat SBS, EC RIS 2025 · Author's calculations (@FedericoBartalucci)

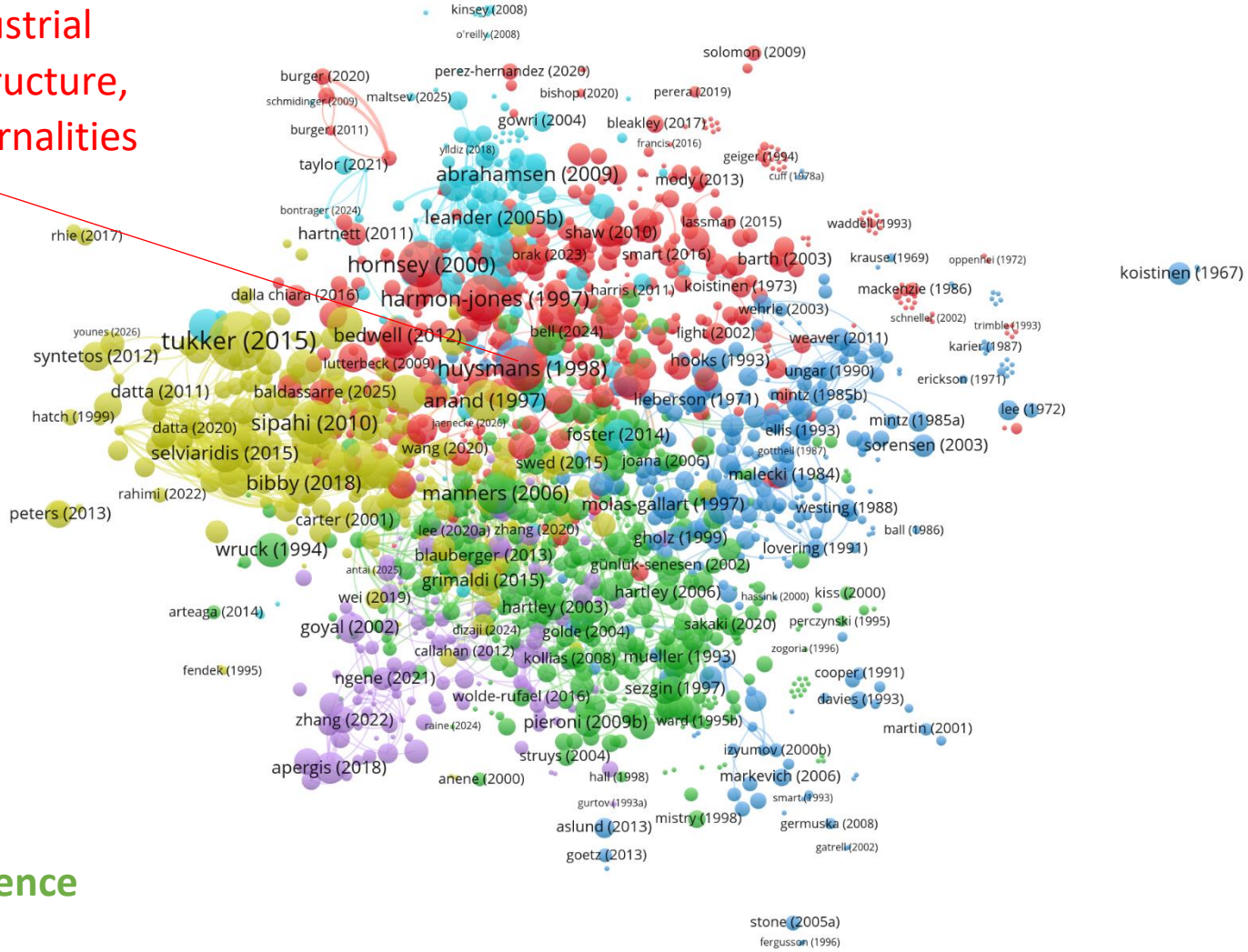
Source: Bartalucci 2026

Defence industry	Search string	Number of publications
Select EG-related Journals	ALL= (economic geograph*), select the top 40 journals with the highest contribution shares	
DI in General	TS=((defen*e OR military OR armament* OR weapon*) near/0 (industr* OR sector* OR enterpris* OR compan* OR produ* OR manufacturer* OR supplier*))	5855
DI in Social Science	Web of Science Index = Social Sciences Citation Index (SSCI)	2065
DI in EG-related Journals	TS=((defen*e OR military OR armament* OR weapon*) near/0 (industr* OR sector* OR enterpris* OR compan* OR produ* OR manufacturer* OR supplier*)) In 40 EG-related Journals*	37

EG-related Journals* : SO = (ECONOMIC GEOGRAPHY OR JOURNAL OF ECONOMIC GEOGRAPHY OR ZFW ADVANCES IN ECONOMIC GEOGRAPHY OR REGIONAL STUDIES OR ENVIRONMENT "AND" PLANNING A OR ENVIRONMENT "AND" PLANNING A ECONOMY "AND" SPACE OR GEOFORUM OR EUROPEAN PLANNING STUDIES OR TIJDSCHRIFT VOOR ECONOMISCHE EN SOCIALE GEOGRAFIE OR PROGRESS IN HUMAN GEOGRAPHY OR PROFESSIONAL GEOGRAPHER OR JOURNAL OF REGIONAL SCIENCE OR GEOGRAPHY OR ANNALS OF REGIONAL SCIENCE OR REGIONAL SCIENCE "AND" URBAN ECONOMICS OR SOVIET GEOGRAPHY REVIEW "AND" TRANSLATION OR PAPERS IN REGIONAL SCIENCE OR CAMBRIDGE JOURNAL OF REGIONS ECONOMY "AND" SOCIETY OR ANNALS OF THE ASSOCIATION OF AMERICAN GEOGRAPHERS OR GROWTH "AND" CHANGE OR JOURNAL OF URBAN ECONOMICS OR ZEITSCHRIFT FUR WIRTSCHAFTSGEOGRAPHIE OR TRANSACTIONS OF THE INSTITUTE OF BRITISH GEOGRAPHERS OR SPATIAL ECONOMIC ANALYSIS OR GEOGRAPHICAL JOURNAL OR EUROPEAN URBAN "AND" REGIONAL STUDIES OR EURASIAN GEOGRAPHY "AND" ECONOMICS OR JOURNAL OF INTERNATIONAL BUSINESS STUDIES OR JOURNAL OF GEOGRAPHY OR GEOGRAFISKA ANNALER SERIES B HUMAN GEOGRAPHY OR URBAN STUDIES OR GEOGRAPHISCHE ZEITSCHRIFT OR PETERMANNS GEOGRAPHISCHE MITTEILUNGEN OR CITIES OR EUROPEAN ECONOMIC REVIEW OR APPLIED GEOGRAPHY OR GEOGRAPHICAL REVIEW OR GEOGRAPHY COMPASS OR RESEARCH POLICY OR TOURISM GEOGRAPHIES)


Cold War (1947–1991)
Post-Cold War (1992–2013*)
New Cold War (2013*-)
1992–2013 : globalisation / GPN / relatively depoliticised trade
From 2014: Ukraine crisis + US–China rivalry
700
600
500
400
300
200
100
0
1940
1950
1960
1970
1980
1990
2000
2010
2020
2030
DI in general
DI in social science
DI in EG-related Journals

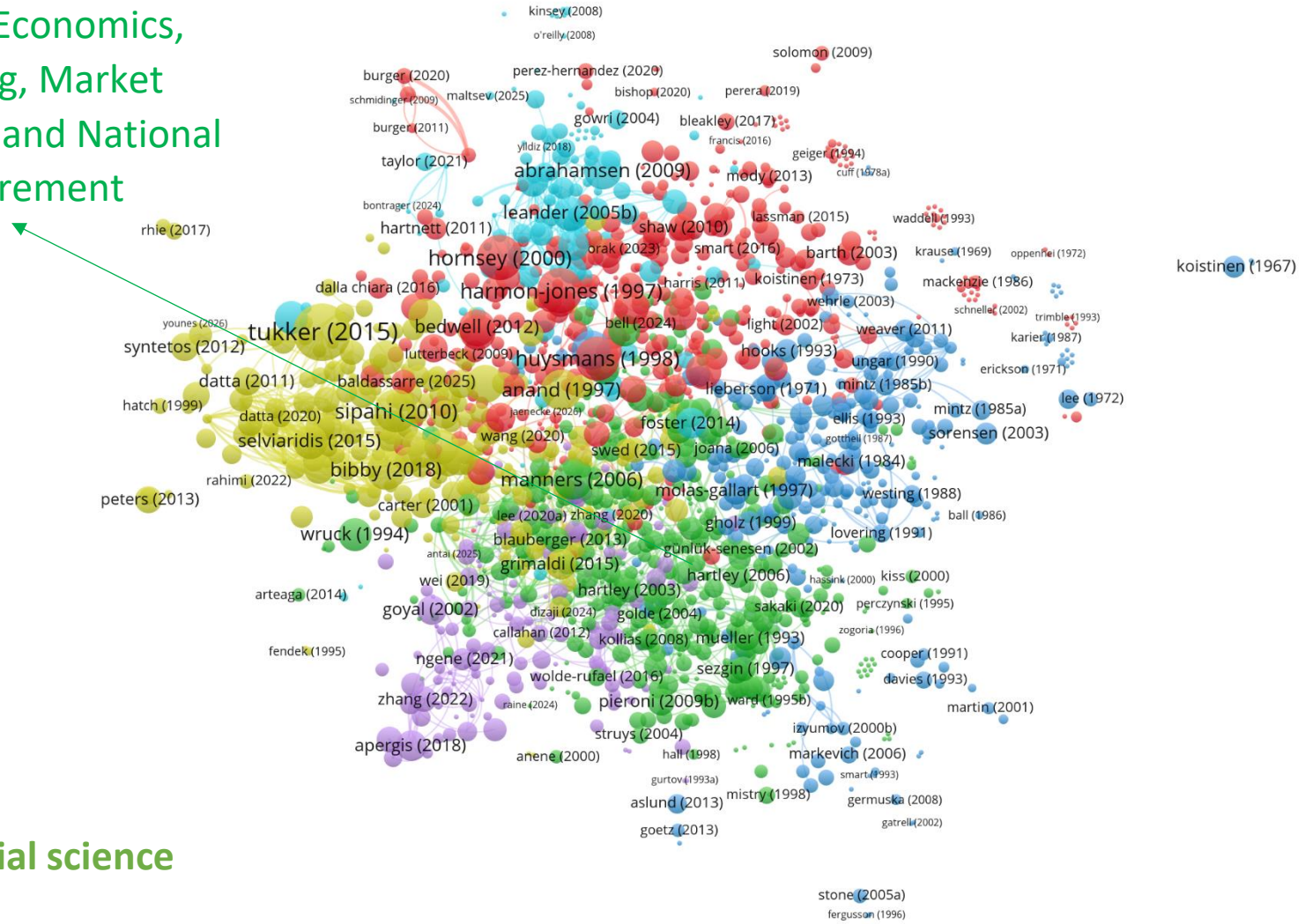
Military-Industrial Complex — Structure, Critique & Externalities



DI in social science

VOSviewer

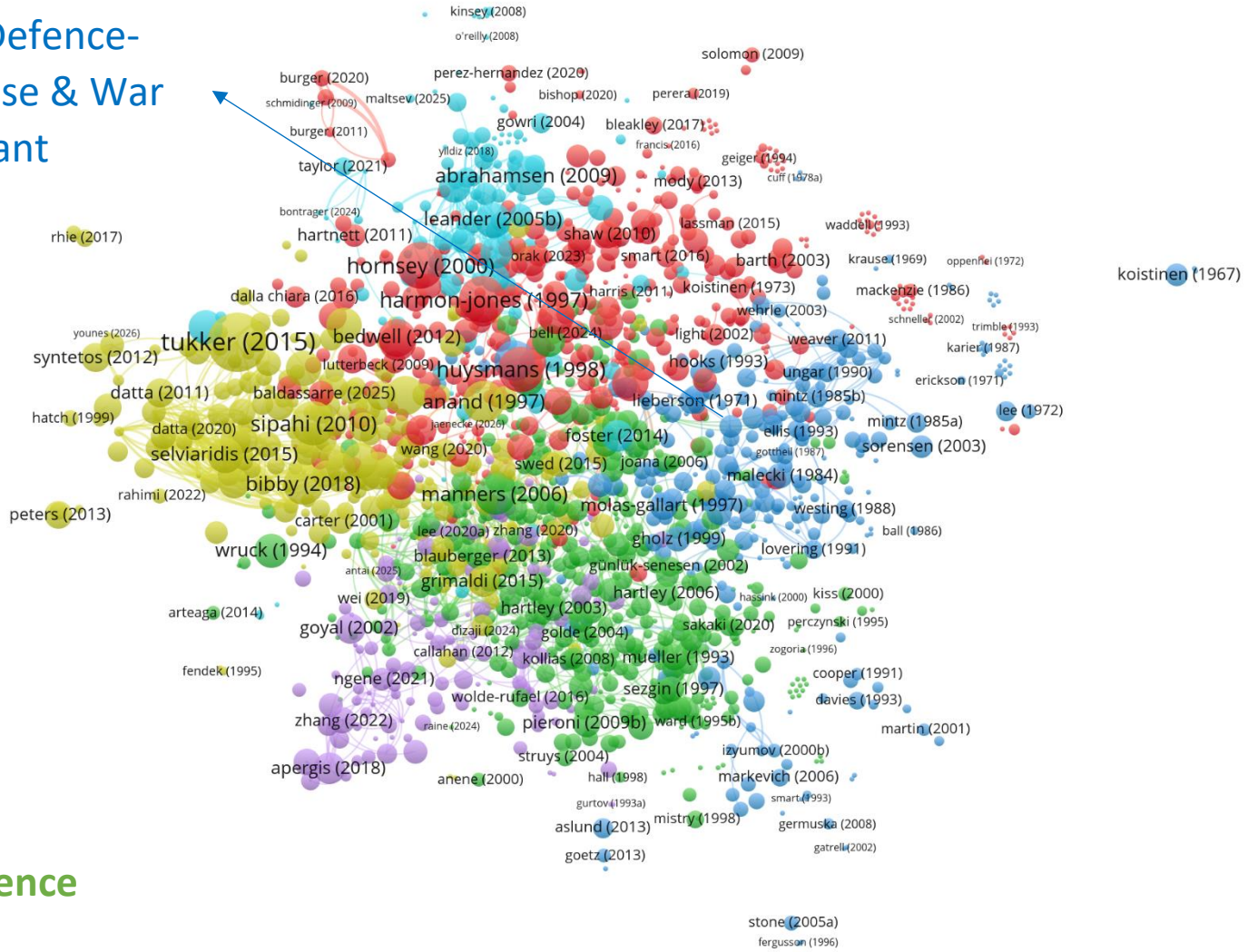
Defence Economics, Spending, Market Integration and National Procurement



DI in social science

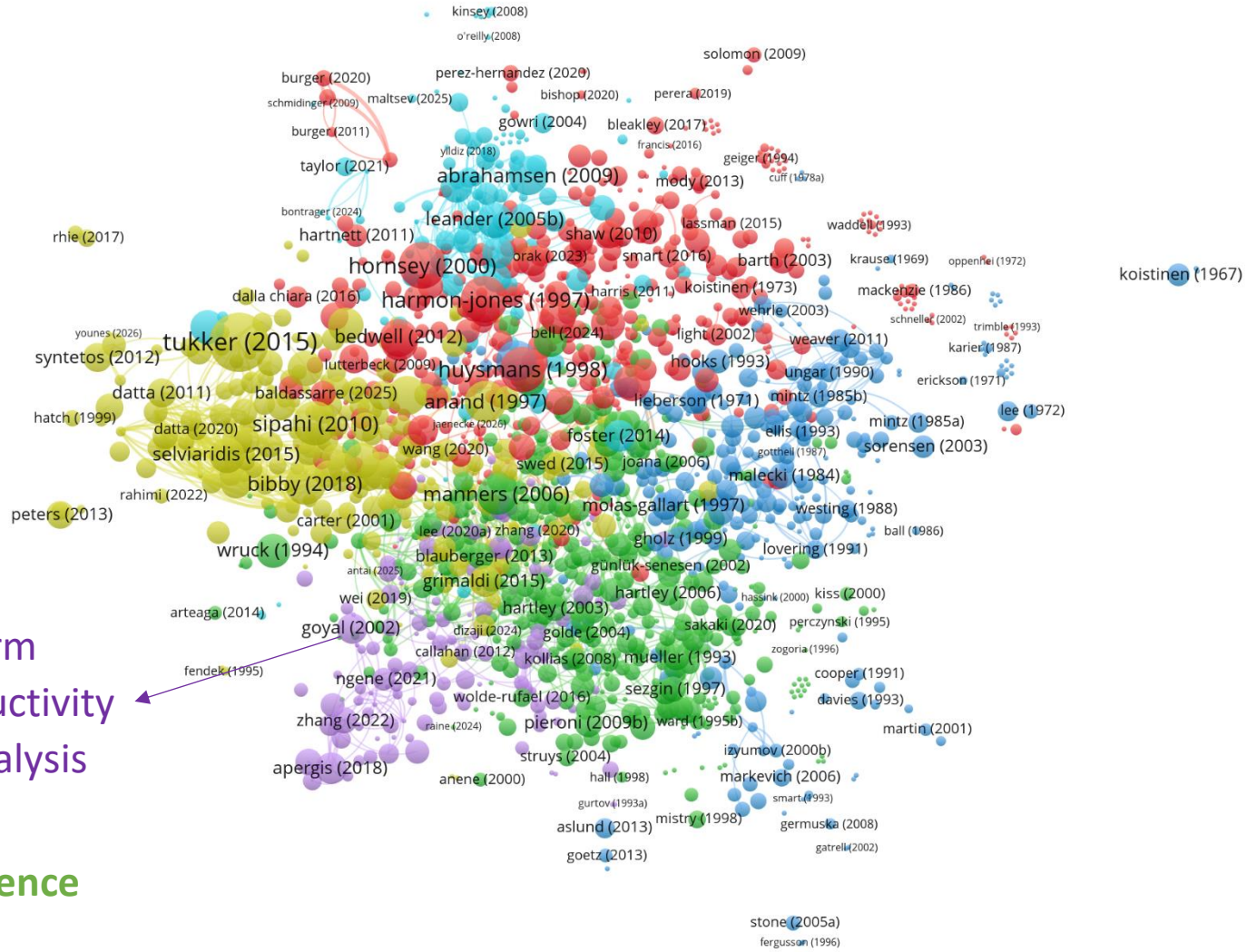
VOSviewer

Historical Defence-Industrial Base & War Relevant



DI in social science

VOSviewer



Defence Firm Efficiency, Productivity & Financial Analysis

DI in social science

VOSviewer

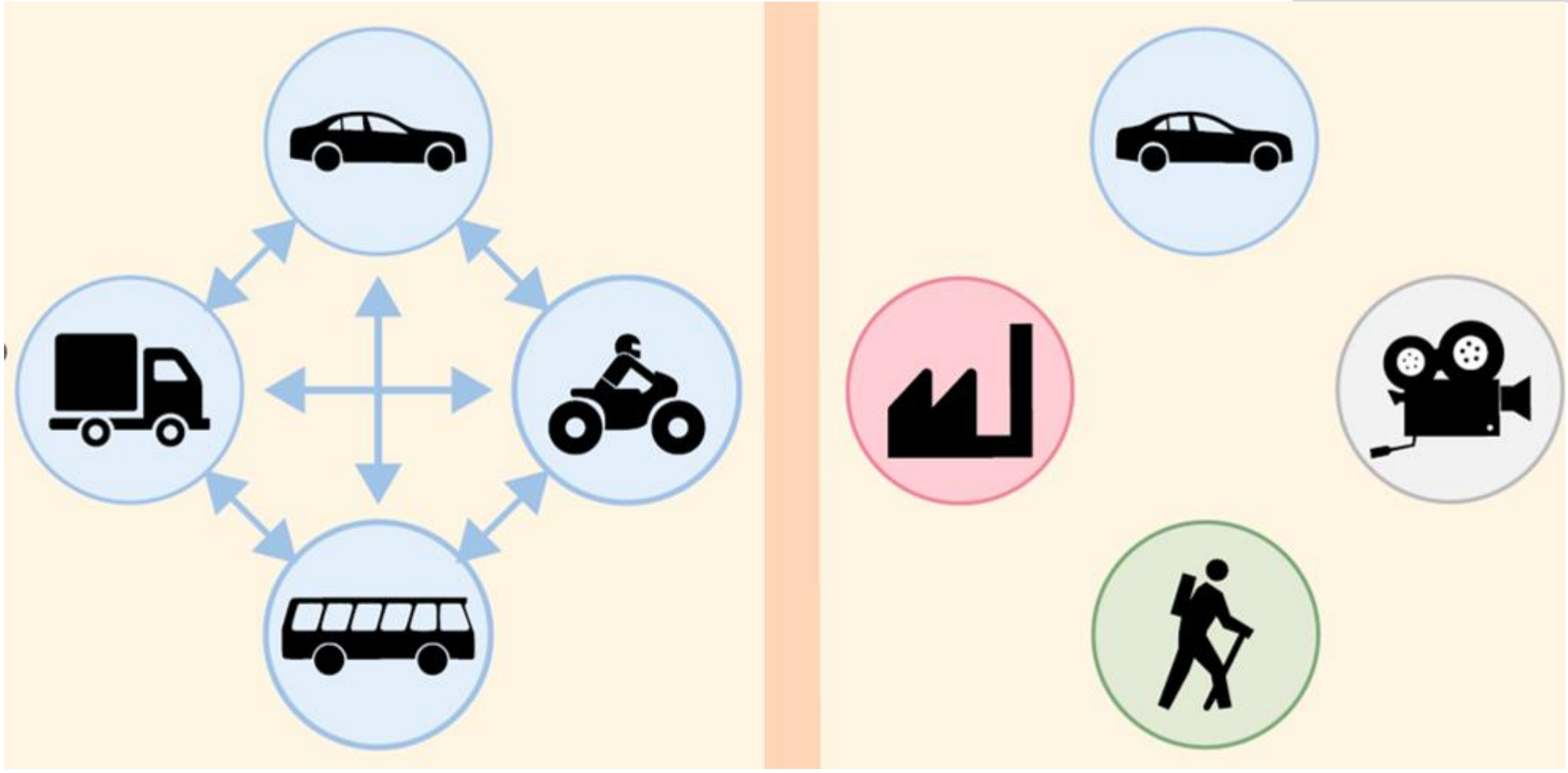
4. Economic Geography and Recent Potentially Relevant Theorizing

Some topics dealt with in economic geography, so far

- Mapping and explaining locational patterns
- Effects of defence expenditures on regional economic inequalities
- Geography of innovation related to defence technologies
- Defence policy as hidden industrial or regional policy

Some questions for future research:

- Defence industry expanding and restructuring: which regions benefit most economically?
- Restructuring processes and the effects on locational patterns
- New defence (Rossiter & Novella 2025; Droff et al. 2026): where do we find this trend and where not?
- How does regional context influence restructuring processes?
- Local and regional lobbying for the defence industry
- Directionality of regional development: is expanding the defence industry desirable?
- Sectoral polarization leading to crowding out effects and competition for resources (Perroux 1955)



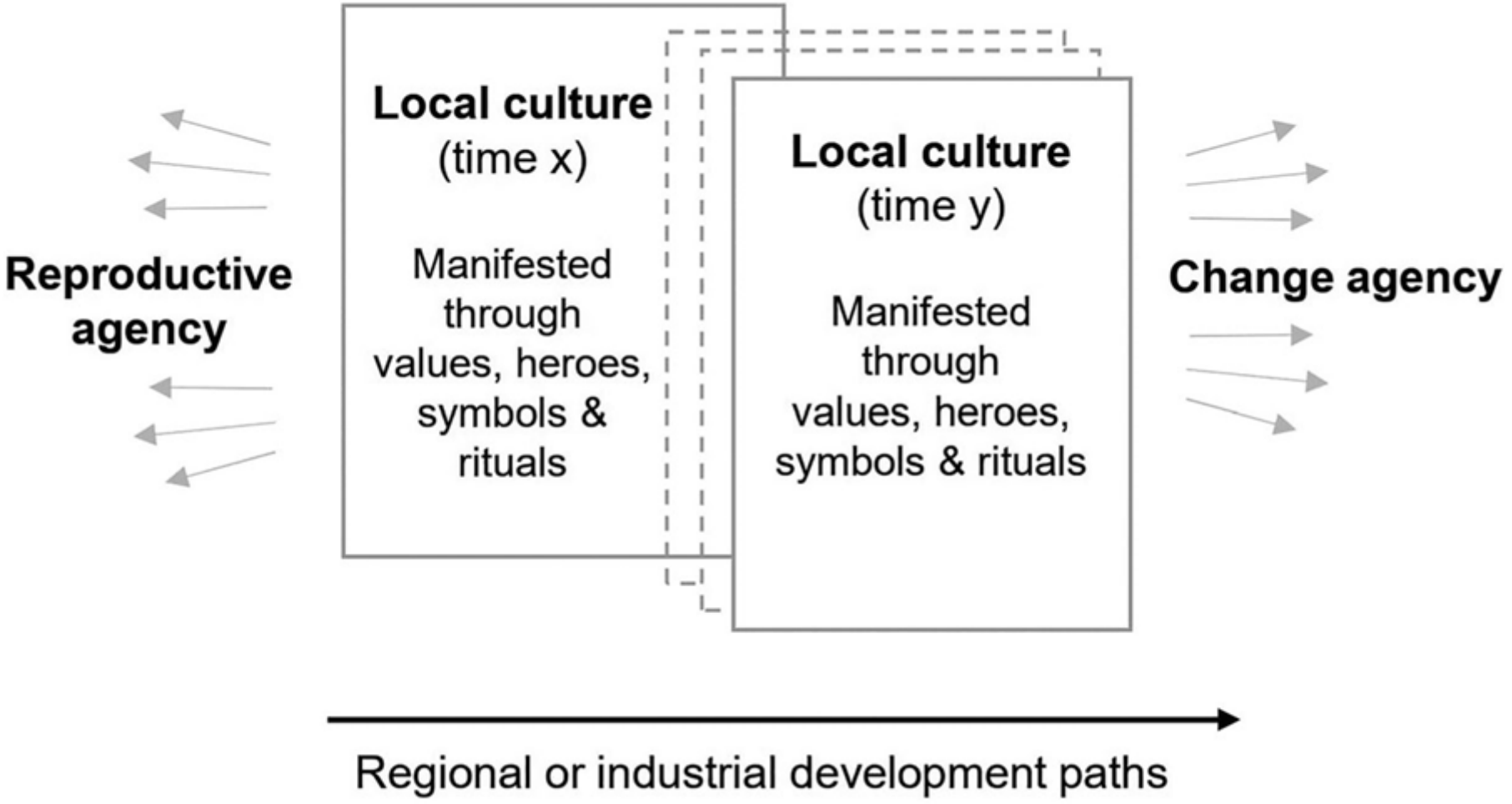
Source: Faller & Hassink 2021; based on Frenken et al. 2007

Path dependence
Lock-ins

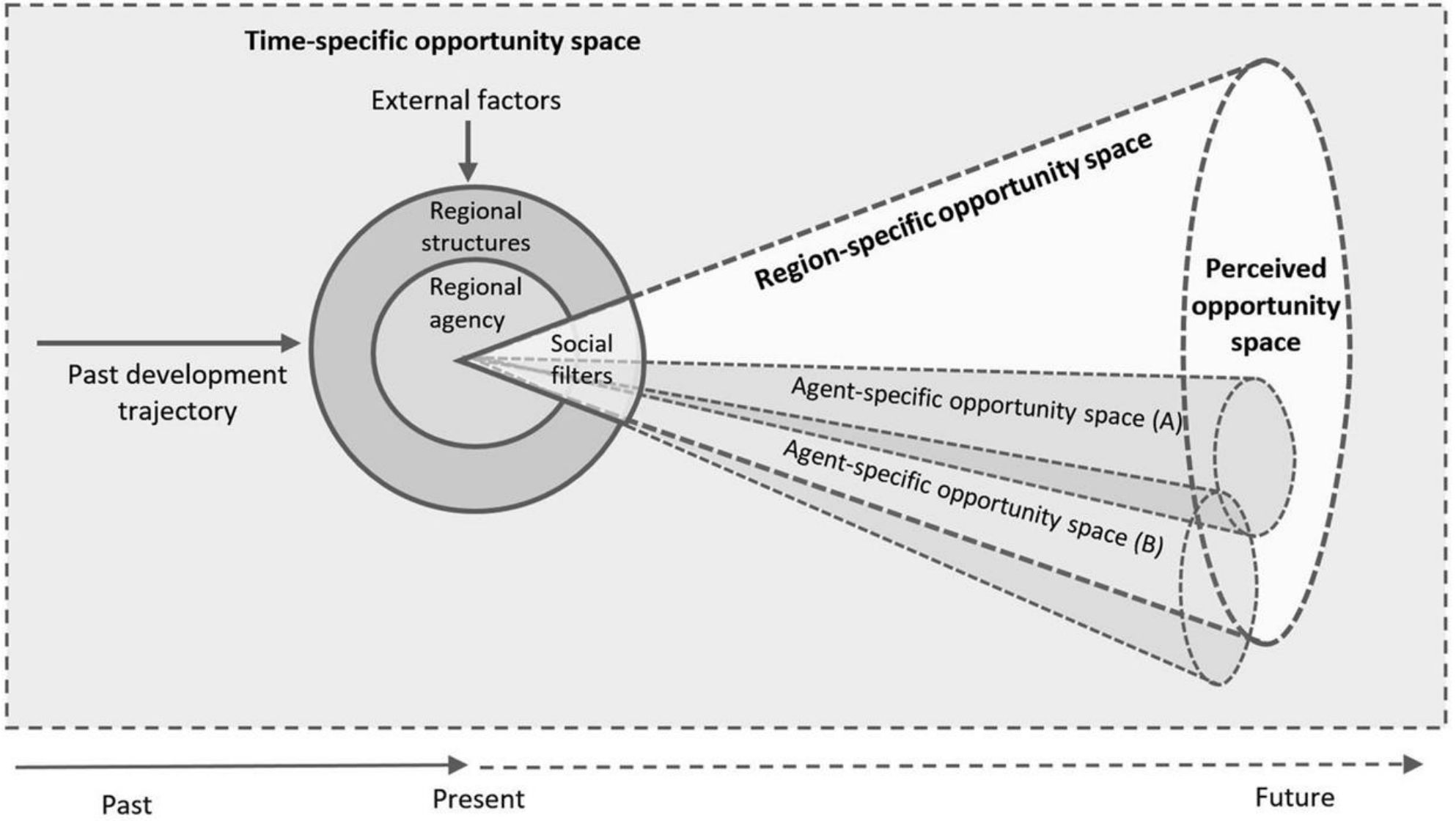
Typology of Regional Industrial Development Paths (Trippl 2020):

Path Creation
Path Transplantation
Path Diversification
Path Renewal

Path Continuation
Path Decline



Source: Stihl 2024



Source: Kurikka et al. 2023

Regional Studies

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The role of state agency in path development: a longitudinal study of two Norwegian manufacturing regions

Markus Steen, Henrik Brynthe Lund & Asbjørn Karlsen

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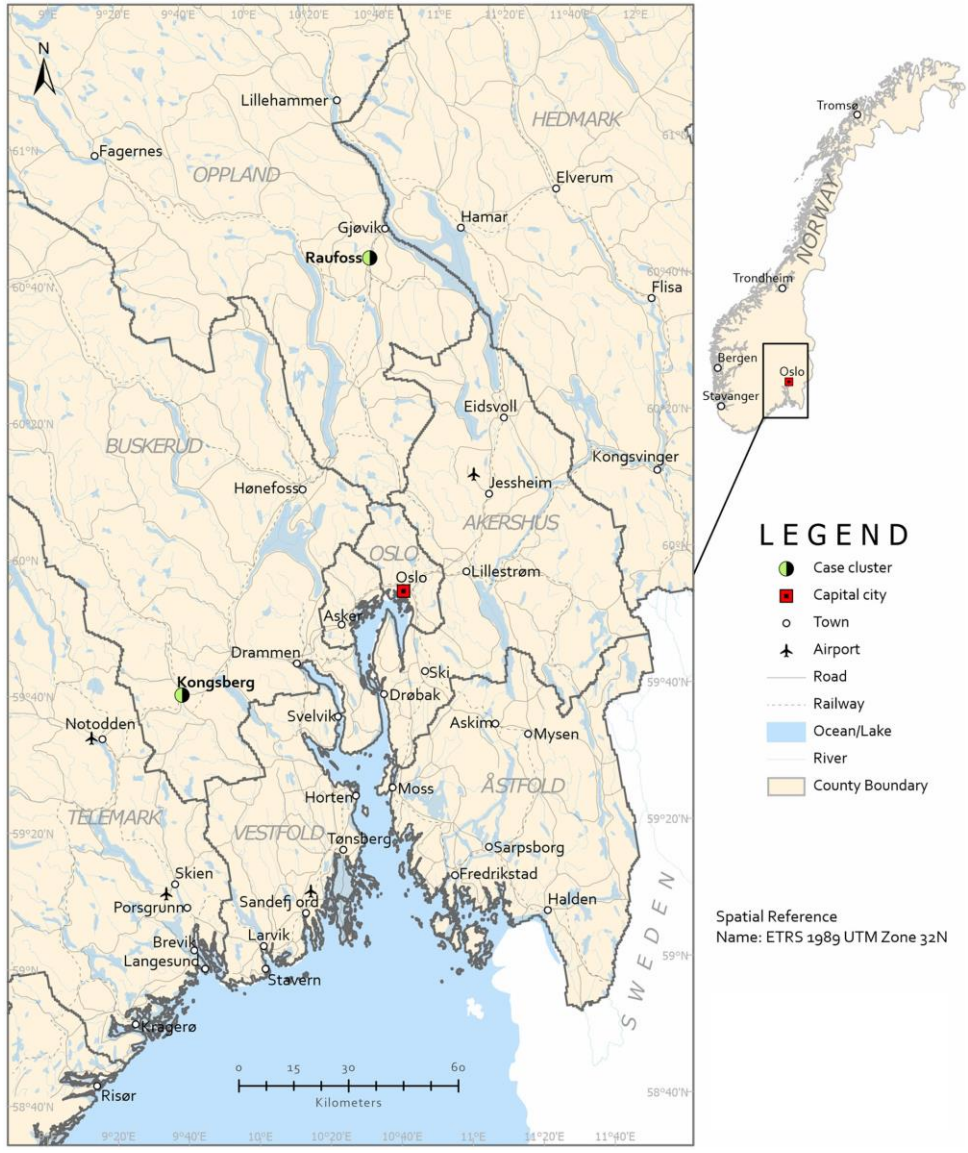
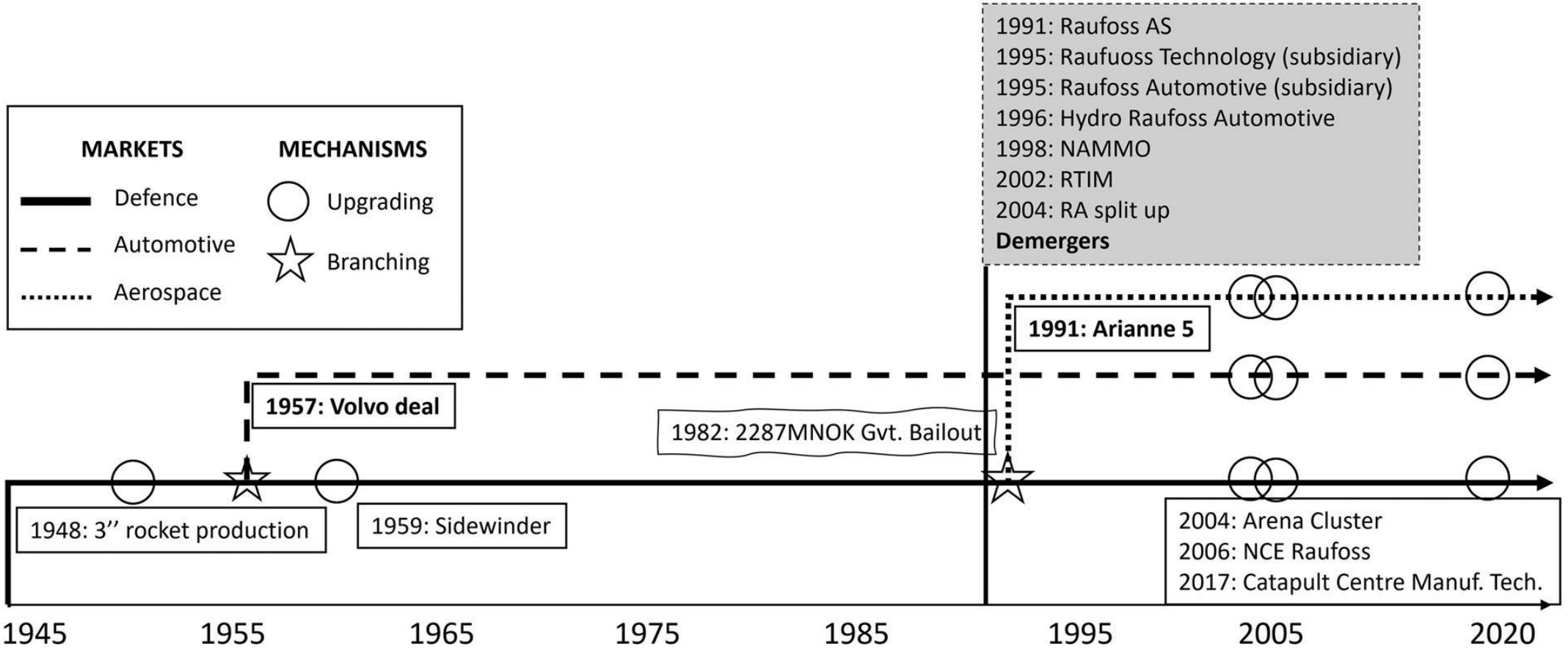
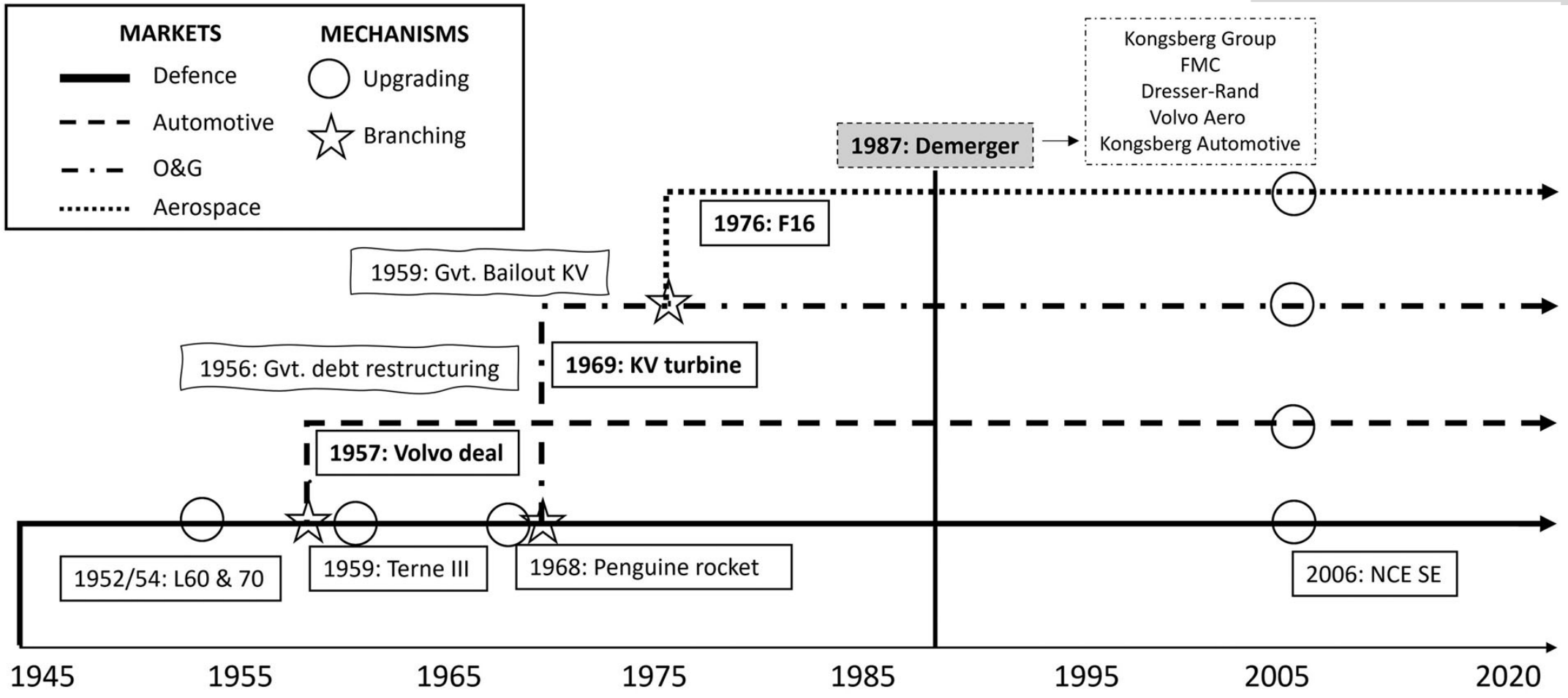
To link to this article: https://doi.org/10.1080/00343404.2023.2195880



Source: Steen et al. 2023



Source: Steen et al. 2023



Source: Steen et al. 2023

5. Conclusions

Globally highly concentrated industry with increasing tendencies towards self-reliance and nationalization

Also within countries geographically concentrated in certain regions

Within economic geography suprisingly highly under-researched despite the industry's growing importance

Big potential for future research on restructuring, expanding of the defence industry and new defence

Several concepts can be used such as related variety, political lock-ins, different types of path development, perceived opportunity space, and reproductive and change agency

However, crowding-out effects and directionaly of regional development needs to be critically discussed and analyzed

Many thanks!

Robert Hassink & Han Chu

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Revisiting the Economic Geographies of the Defence Industry

Editors: Michael Brzoska, Mia Gray, Robert Hassink, Gregory Hooks, Diego Lopes da Silva

https://academic.oup.com/cjres ***ABSTRACT DEADLINE 1-9-2026***