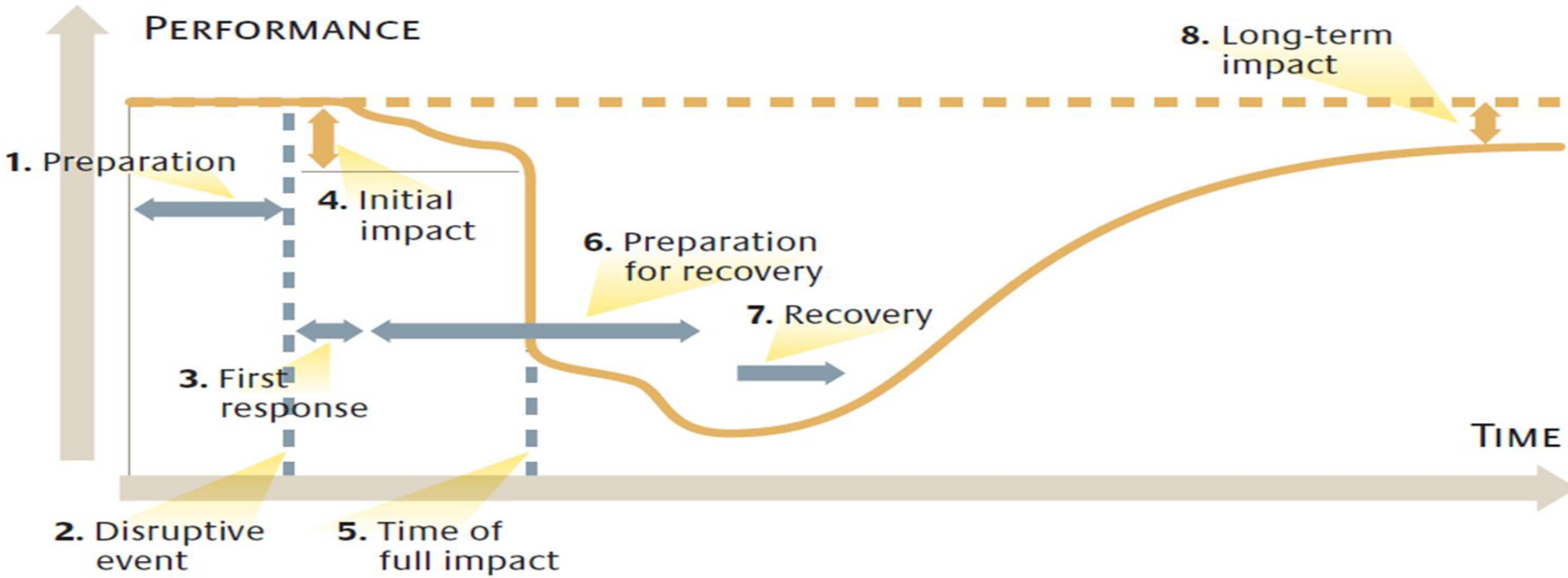
Supply network evolution and Covid-19: a paradigm shift in resilience

Reflections of a 6 month diary study from Senior Supply Chain Executives in the Automobile and Infrastructural Sectors – March 1 to Sept 2020

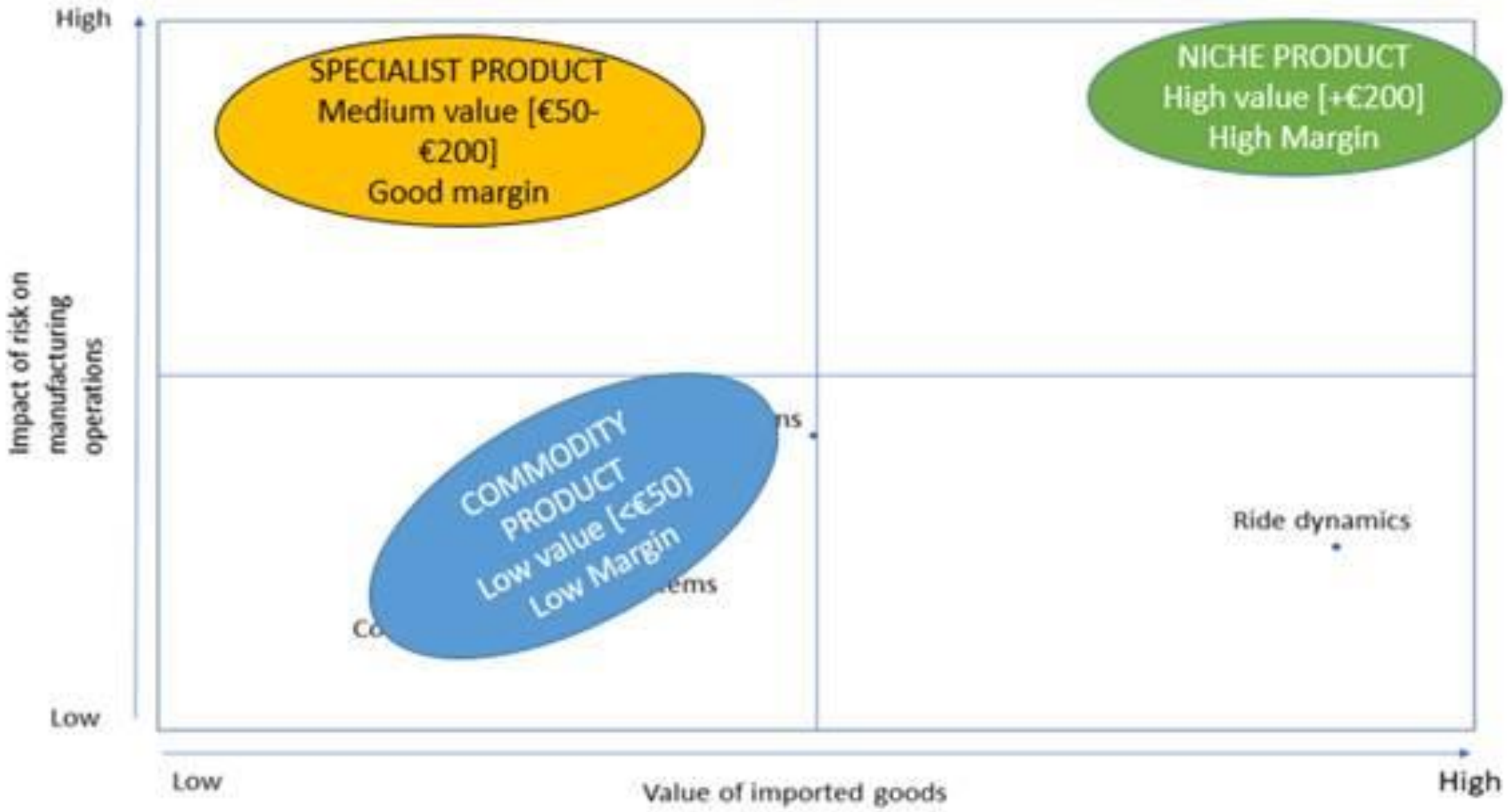
https://business.leeds.ac.uk/divisions-management/staff/299/dr-gary-graham

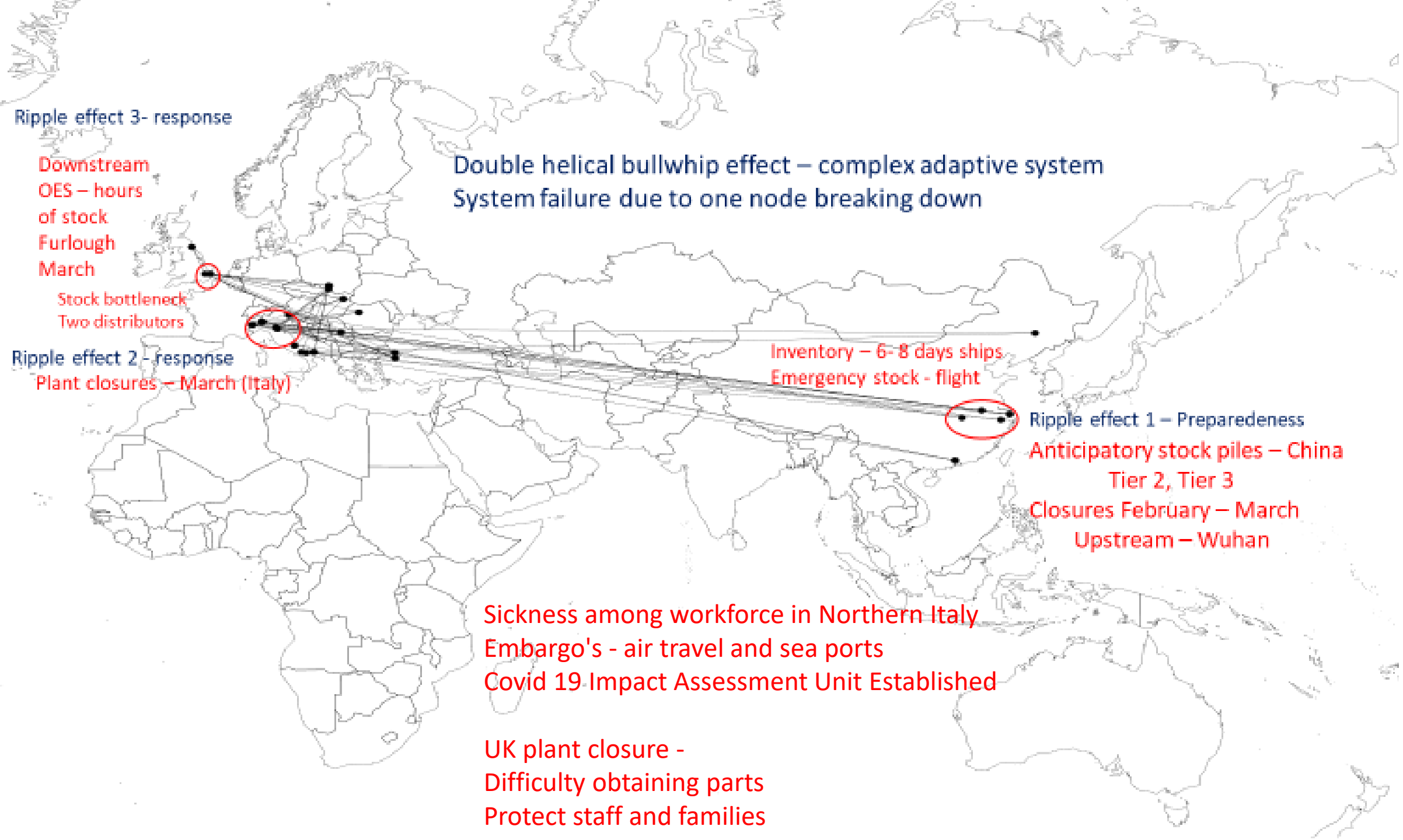
The Disruption Profile

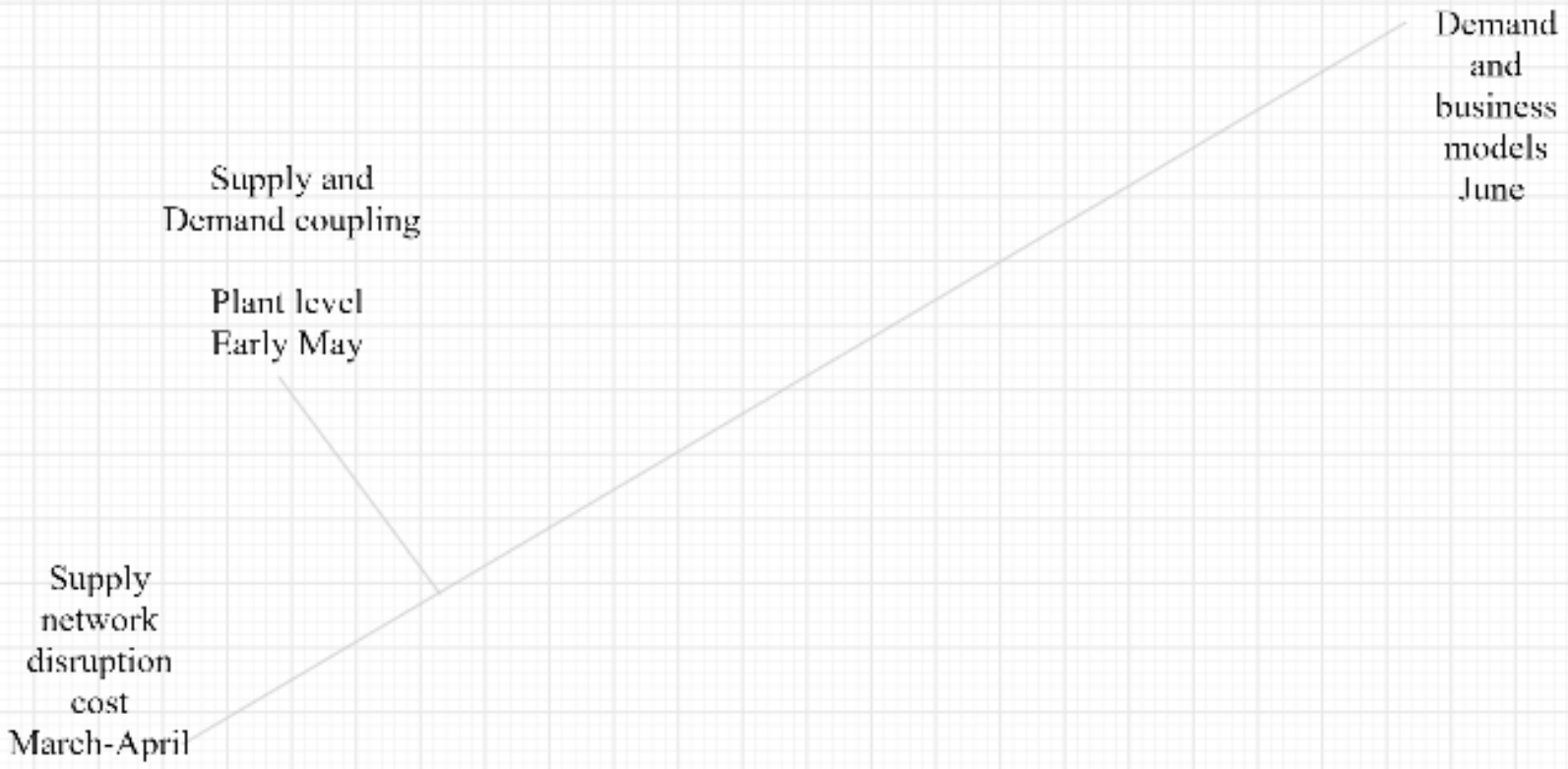
Any serious disruption will affect the performance of a company in predictable ways. A plotting of any relevant performance metric over time will reveal eight distinct phases.



Risk-Value Sourcing Matrix - AUTO

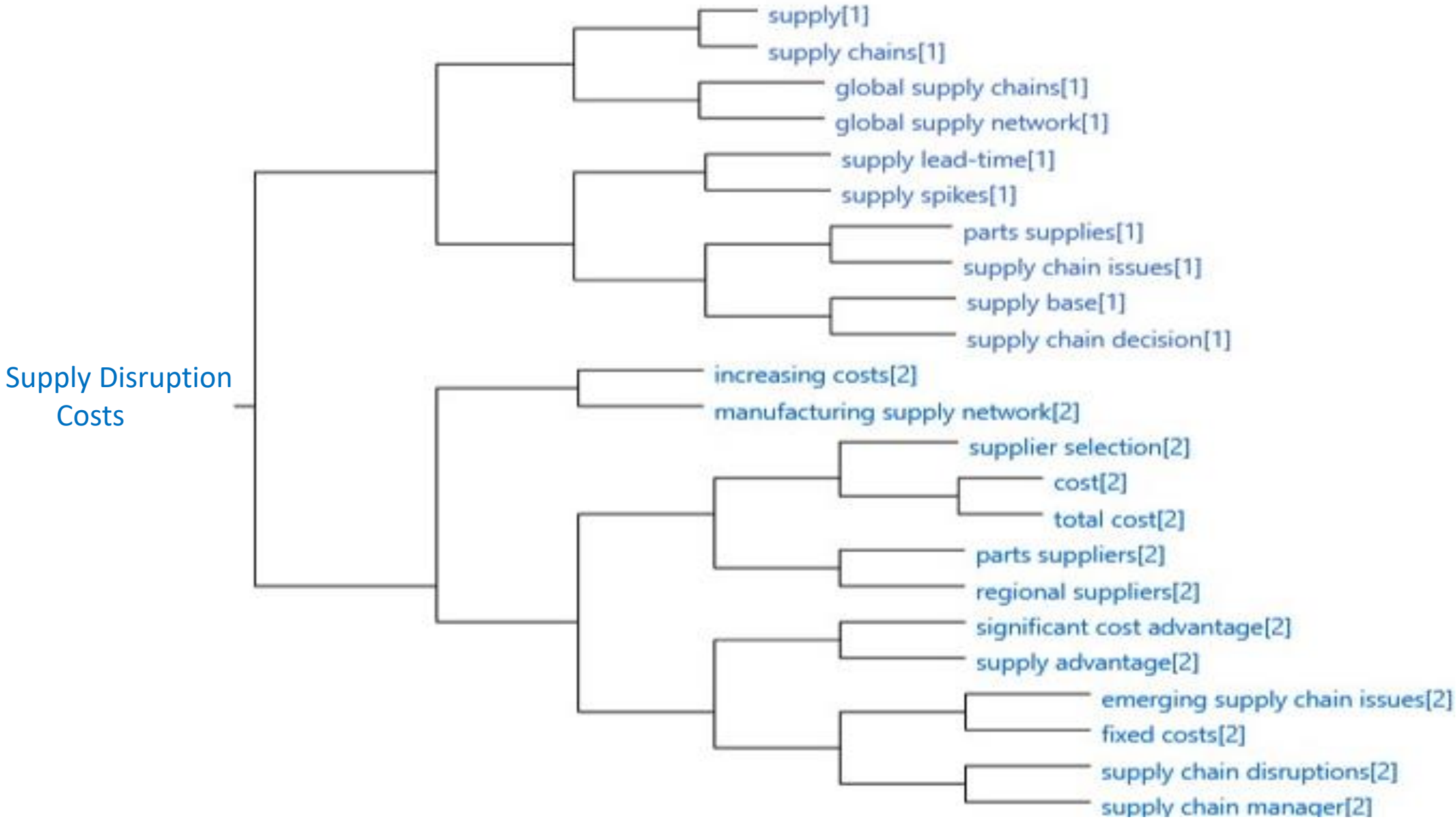



Ripple effect 3- response
Downstream
OES – hours
of stock
Furlough
March
Stock bottleneck
Two distributors
Double helical bullwhip effect – complex adaptive system
System failure due to one node breaking down
Ripple effect 2 - response
Plant closures – March (Italy)
Inventory – 6- 8 days ships
Emergency stock - flight
Ripple effect 1 – Preparedeness
Anticipatory stock piles – China
Tier 2, Tier 3
Closures February – March
Upstream – Wuhan
Sickness among workforce in Northern Italy
Embargo's - air travel and sea ports
Covid 19 Impact Assessment Unit Established
UK plant closure -
Difficulty obtaining parts
Protect staff and families



Evolutionary cladogram – supply chain evolution – from supply to economic pandemic

DATA SLIDE - Will be Presented



A cladogram representing understanding of the evolutionary relationships among selected diary transcripts Preparedness phase. March 1 to 23.

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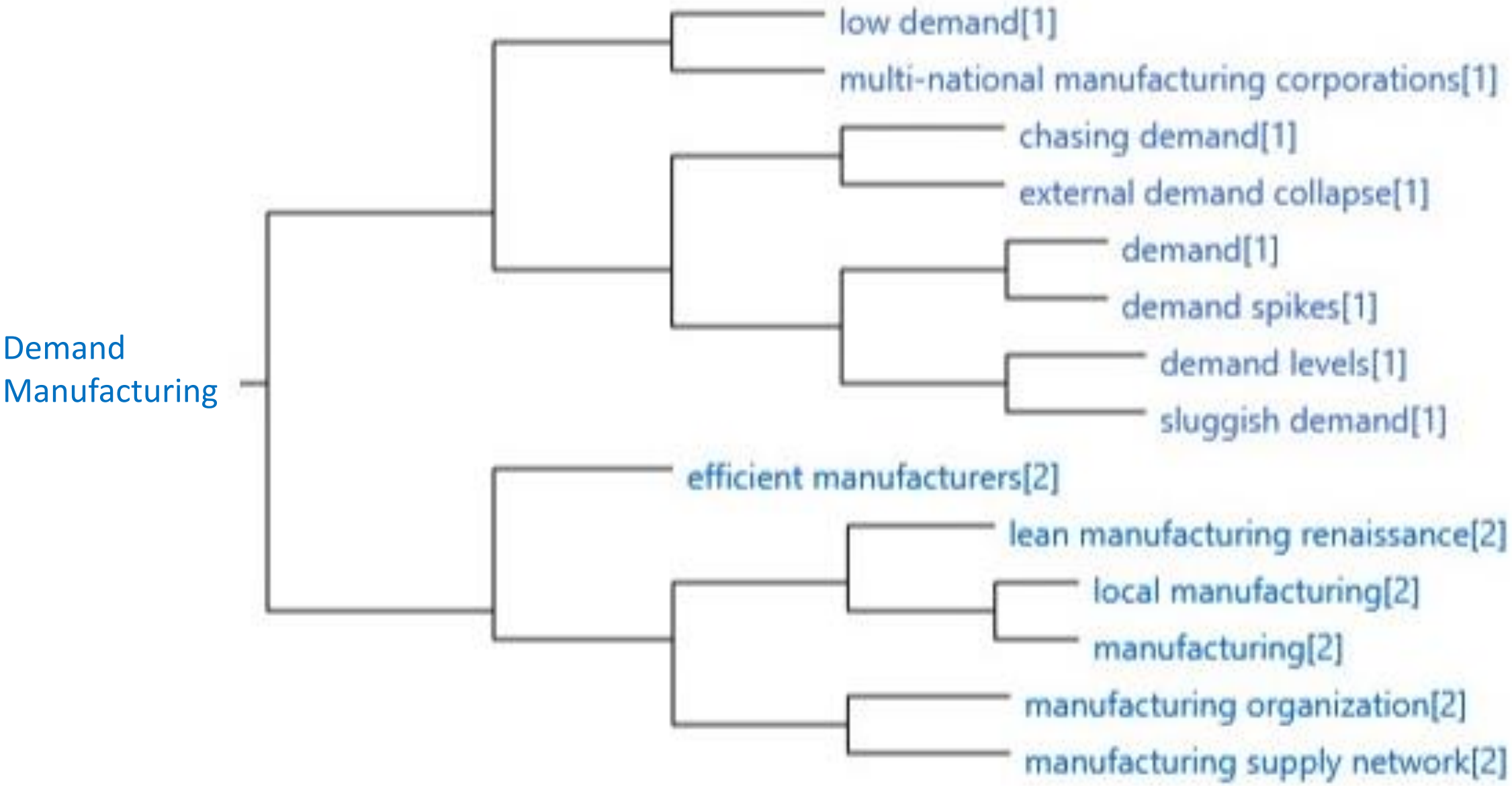
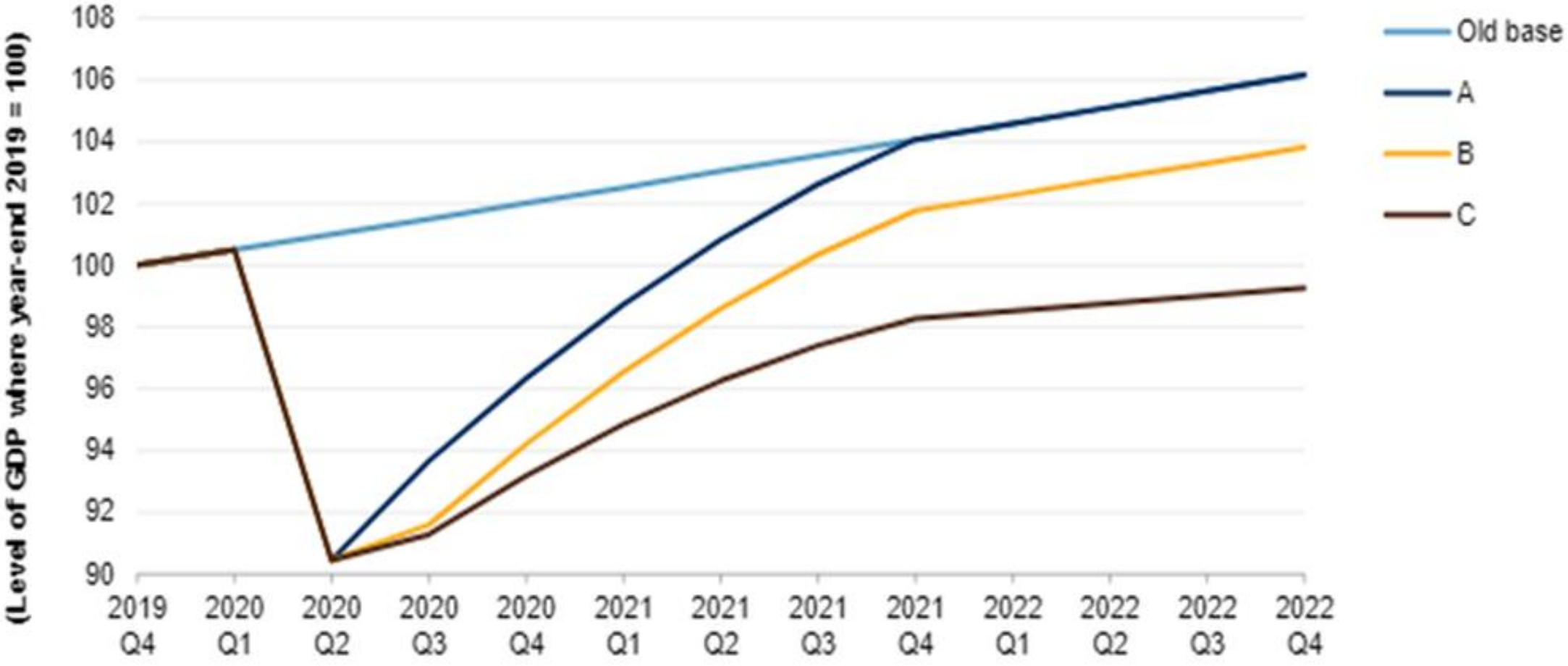


A cladogram representing understanding of the evolutionary relationships among selected diary transcripts. Recovery phase. July

Stylized COVID-19 Recovery Scenarios



Source: S&P Global Economics.

Paradigm shift

- Ripped up the 30 day Sheffi model of resilience. On-going and sustained. Recovery muted.
- Long run recovery measure of survivability, business model re-design and demand (not short run agility, innovation etc)
- Network and not plant failure and disruption
- Rather than supply chain resilience the issues are now primarily about demand and business model resilience
- Provisioning system for regenerating local manufacturing supply chains (i.e. public-private partnerships)

- Disruption responses – supply based, recovery not at same level
- Local level – recovery regeneration between industry and LEPS, enterprise agencies, core capabilities and scaling up.

NViVO – 28 themes of negative sentiment compared to 8 themes of positive sentiment

Post – COVID – Post Brexit

Policy ideas will be presented here

Freight and logistics : towards a resilient and green recovery

Tony Whiteing

ITS, University of Leeds

ITS

UNIVERSITY OF LEEDS

Some opening remarks

- Freight transport and associated logistics operations appear to have been more resilient than passenger transport during the COVID crisis
- This is partly because the logistics sector provides essential services, but also because it is notably agile and innovative
- Looking forward, Brexit is as much of an unknown threat as is the course of the virus. The danger is that recession – and the need for change - becomes more serious because of the *combination* of these issues
- A key point is that we should look to logistics as a mechanism to support strong recovery and future growth across all industrial sectors – rather than look to logistics *per se* as a way of creating jobs to replace those lost in other sectors

Freight and logistics for the North

- We should aim to develop and implement a strategy for freight and logistics for the broader North of England economy
- This is to ensure that the existing transport and logistics assets across the North are leveraged and developed in a coherent way
- This is particularly true for ports and air cargo hubs, where areas such as WY depend on assets such as the Humber ports and Manchester Airport
- Any strategy for WY needs to be consistent with such a regional strategy

Threats/unknowns to be considered

- In recent decades, the region (including WY) has successfully attracted a lot of warehousing and depot operations for retailers – but many of these are currently focused on high street operations rather than online. Are WY locations as attractive for the online retail model?
- Much of the region's logistics is based on road freight. This includes much of the import/export freight which is 'roll on/roll off'. Decarbonisation of road freight for sustainability appears very challenging
- Much of rail freight is based around bulk flows, which are vulnerable to continued industrial structural change, e.g. continued shift of electricity energy mix to renewables, ongoing threats to steel industry
- Trade reconfigurations due to Brexit, and wider protectionism threats

Change presents opportunities

- For example;
- The COVID-induced acceleration of the switch from high street to online retail may well be permanent, and supply chains for online will need to be enhanced quickly
- Brexit may lead to greater use of intermodal systems (especially containerisation rather than road-based roll-on/roll-off) – even if trade with Europe remains dominant – and this could lead to opportunities to develop greener supply chains

The way ahead?

- Aim to attract and develop high-valued-added activities, rather than just basic services
- Look to advanced technologies – such as automation and robotics – as a route to resilience
- Look to intermodal systems rather than road dominance, for resilience and as part of a green recovery
- Invest in skills development at all levels

The value of work and migrant labour in the post-Brexit, post-COVID economy

Chris Forde, Jo Cutter, Gabriella Alberti

PERN Webinar on Resilient Supply Chains, 15th July 2020

CERIC
Centre for Employment Relations, Innovation & Change

Emerging questions

- How has the pandemic impacted on labour mobility and the perception of the value of low-paid ‘low-skilled’ migrant jobs?

- What may happen in supply chains that have historically relied on migrant labour, in jobs that are of high ‘social value’ and that cannot be easily automated?

- What are the assumptions of employers as they develop alternative strategies of recruitment to substitute outgoing EU workers?

We draw on exploratory research and engagement conducted by CERIC with key labour market, civil society and government stakeholders (***see Alberti, G., Cutter, J. Forde, C. Ciupijus, J. and Bessa, I. (2020)***

https://business.leeds.ac.uk/research-ceric/news/article/424/new-ceric-blog-coronavirus-and-post-brexit-immigration

Which jobs have been classified as ‘essential’ during the COVID-19 pandemic

- Definition of essential worker: different countries have developed different lists of key workers, main feature being that they are considered central to maintaining basic economic and public health infrastructure
- In the UK the classification was firstly drawn for those entitled to still send their children to school (Cabinet Office and Department for Education, 2020)
- These occupations include the health sector (doctors, nurses, care assistants, diagnostic) law enforcement, public safety, food production and distribution, gas, water, and electricity services, transportation and logistics, various types of manufacturing, food retail, financial services and various others

Which jobs are deemed as ‘high value/essential’ in the proposed points-based system?

- Issued by the Migration Advisory Committee (2018)
- It develops a classification of all jobs in the UK economy according to

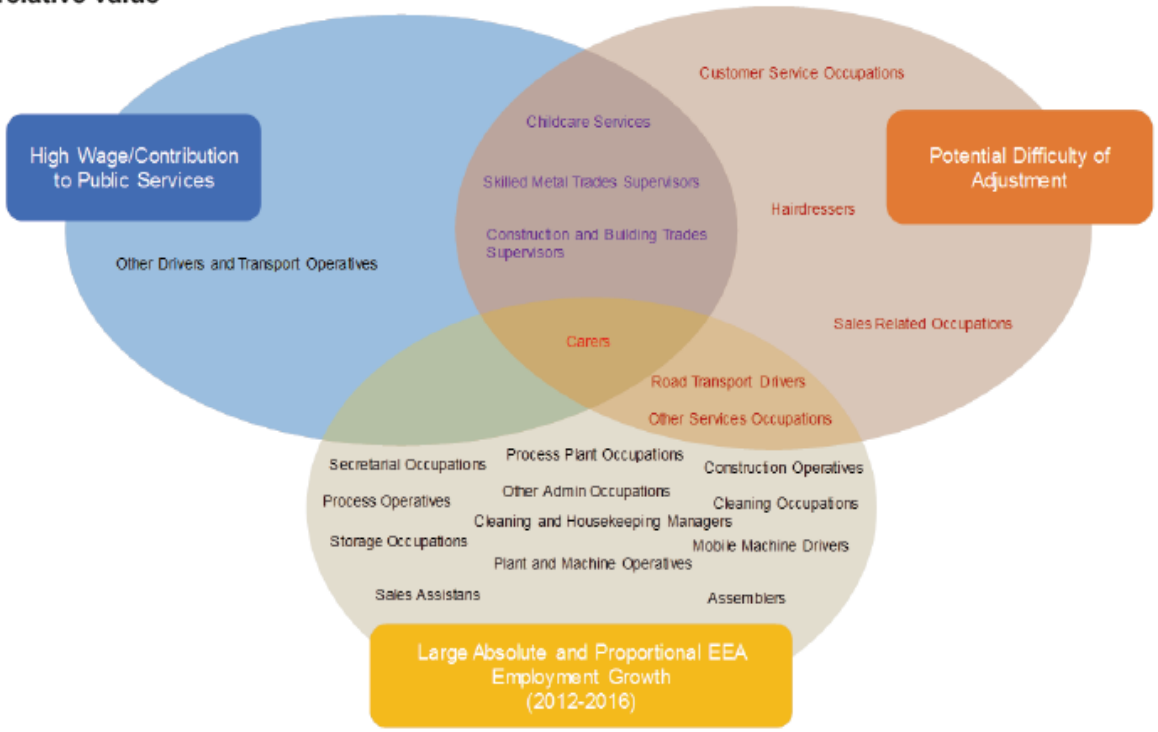
-potential for adjustment to labour market change

-whether the occupation is high wage or high public value (or both): recognition that social value may be different from direct economic/fiscal contribution

-reliance on EEA migrant labour in recent years

- ‘High wage/high public value’ mostly high/medium skilled jobs, but some low skilled also included

Figure 12: Lower skilled occupations facing labour market adjustment difficulties and of high relative value



Low er skilled occupations illustrated rank highly for the relevant criteria

Summary of the new Point Based system proposal: how to collect 70 points?

Characteristics	Essential	Points
Offer of job by approved sponsor	✓	20
Job at appropriate skill level	✓	20
Speaks English at required level	✓	10
Salary of £20,480 (min) - £23,039	✗	0
Salary of £23,040 - £25,599	✗	10
Salary of £25,600 or above	✗	20
Job in a designated shortage occupation	✗	20
Education qualification: PhD in subject relevant to job	✗	10
Education qualification: PhD in a Stem subject relevant to the job	✗	20

https://www.theguardian.com/uk-news/2020/feb/18/uk-to-close-door-to-non-english-speakers-and-unskilled-workers


Brexit: UK's new fast-track immigration system to exclude care workers

Minimum salary thresholds to also remain in place, presenting additional barrier

Essential workers and migrant labour in the post-Brexit economy

Fernandez-Reino, M. Sumption, M. and Vargas Silva, C. (2020) rom Low-Skilled to Key Workers: The Implications of Emergencies for Immigration Policy', Oxford Review of Economic Policy

Table 1. Share of likely essential workers in each industry, by place of birth (employees and self-employed aged 16 and above)

Industry sector	Share of likely essential workers in each industry (%)	Share of foreign born among likely essential workers (%)			Share of foreign born among all workers (%)		
		EU born	Non-EU born	All foreign born	EU born	Non-EU born	All foreign born
Health	95.1	5.2	13.4	18.6	5.2	13	18.2
Primary Sector	74.2	4.9	4	8.9	5.3	3.9	9.2
Social Work & Residential Care	72.9	5.2	11.5	16.7	5.1	10.6	15.7
Education	69.1	4.7	7.4	12.1	4.8	7.6	12.4
Information & Communication	49.4	7	17.1	24.1	6.7	14.3	21
Public Administration	49.4	2.7	6.1	8.8	3	5.5	8.5
Transport & Storage	43.7	10.2	8.5	18.7	11.2	12.5	23.7
Financial, Insurance & Real State	28.2	13.6	9.5	23.1	10.3	7.4	17.7
Manufacturing	24	4	11.7	15.7	5	10.1	15.1
Professional & Scientific	18.5	8.2	9.9	18.1	6.9	9.4	16.3
Retail	17.2	4.1	9.7	13.8	5.2	7.5	12.7
Other Services & Recreational Activities	13.8	10.6	8.4	19	7.8	7.9	15.7
Support Services and Administration	11.5	7.7	10.9	18.6	9.5	10	19.5
Construction	8.9	5	8.6	13.6	6.6	4.6	11.2
Hospitality and Accommodation	3.5	16.1	22	38.1	11.5	13.7	25.2
All industries	38.2	6.2	9.9	16.1	6.9	8.9	15.8

Source: Labour Force Survey 2019 (average of 4 quarters, waves 1 and 5 only)

Migrant workers in Yorkshire and the Humber (Migration Observatory, 2019)

Industry in 2017	EU born	Non-EU born	Non-UK born	UK born	Total
Health, education and public administration	26,000 (3%)	49,000 (6%)	75,000 (10%)	710,000 (90%)	785,000 (100%)
Retail	38,000 (10%)	23,000 (6%)	61,000 (16%)	326,000 (84%)	387,000 (100%)
Manufacturing	34,000 (11%)	14,000 (5%)	48,000 (16%)	249,000 (84%)	297,000 (100%)
Hospitality	15,000 (10%)	20,000 (13%)	34,000 (23%)	117,000 (77%)	151,000 (100%)
Professional services, finance and admin	12,000 (4%)	17,000 (5%)	29,000 (8%)	319,000 (92%)	348,000 (100%)
Transport and storage	12,000 (9%)	14,000 (10%)	25,000 (19%)	105,000 (81%)	130,000 (100%)
Other industries	17,000 (4%)	20,000 (4%)	37,000 (8%)	409,000 (91%)	446,000 (100%)
All industries	154,000 (6%)	156,000 (6%)	309,000 (12%)	2,236,000 (88%)	2,545,000 (100%)

Evidence from our stakeholder events (2019 and 2020)

- **Key priorities and concerns:**
  - **Employers:** future immigration policies £30k threshold not realistic, detrimental effect on low-skilled sector dependent on migration, Shortage occupation list out of date, the then proposed Salary Threshold makes impossible for certain sectors to survive. Alternatives to migrant labour being considered (training, recruiting local workers, automation) but challenges/contradictory views
  - **Trade unions:** re-building solidarities, concern about settled status regularisation challenges, concerns about the requirements for employer sponsorship: how will employers check migrants' right to work??
  - **EU Migrant groups:** many migrant workers have already left the country, loss of welfare rights and work degradation for EU nationals-devaluing migrants
  - **Local government**: social impact of curtailing access to social protection, growth of informal economy, homelessness, vulnerable work, working with skills bodies to recruit among long-term unemployed groups

Contradictions, tensions and challenges

- Adams-Prassl et al., 2020: some sectors experiencing critical shortages as others see as mass layoffs of workers: more scope for substitution with locals?
- Fernández-Reino et al. 2020 highlight **the limits of transferability** of workers from one industry/occupation to another given:
  - unattractive terms and conditions;
  - different nature of skills and need for training
  - past evidence of employers preferring to hire workers from abroad even during periods of high unemployment (Anderson and Ruhs 2010)

- Automation proposed as alternative to migrant labour

  -yet many jobs cannot be automated

  -automation requires significant investments in training

  -Bickerton (2019) highlights how for the introduction of technologies to be productive workers need to acquire new skills to operate them

Summary and scenarios

- The points -based system had been criticized for leaving entire sectors of the UK economy without access to migrant workers. Effects on employers and for worker rights

- Covid-19 has brought into sharp relief the public value of jobs in supply chains where migrant workers are concentrated
- Ability of employers to easily substitute migrant labour may be limited
- Migration policy may be revised accordingly allowing for *ad hoc* temporary routes for certain ‘essential occupations’ or lowering the skills/salary threshold. However, routes for ‘low-skilled’ workers to enter remain very limited (Fernandez-Reino et al. 2020)

Regional food system resilience post Covid-19

Place-Based Economic Recovery Network (PERN)

Dr John Lever

Reader in Sustainable & Resilient Communities

University of HUDDERSFIELD
Inspiring tomorrow's professionals

Since 1st May, we've conducted around 20 interviews

1. pressure points in food supply and demand during the Covid-19 crisis;
2. solutions that emerged in response to these challenges, and:
3. innovations required to enhance resilience in the short, medium and long term.

Situated between Manchester, Leeds and Sheffield, Kirklees has population of 422,458 and covers a mixed urban and rural area of 408.6 km².

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- **We've spoken with farmers, farm shops, food producers, food artisans, business networks, supermarkets, independent food retailers, food banks and policy officers…**

- As the conventional/ global food system closed or locked down, regional farm shops, independent retailers, and home delivery services experienced a sudden and rapid increase in demand.

- **It soon became clear that the 'Kirklees food system' had the capacity and flexibility to respond to the crisis in new and innovative ways**

- Significantly, farmers and producers who weren't tied into supermarket supply chains had the flexibility to respond and provide produce for regional food businesses throughout lockdown!

- **While lacking the capacity to serve the region entirely, the crisis has shown that regional food business can play a greater role enhancing the resilience of the regional food economy going forward!**

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What should be learned from the COVID experience?

- In the published food system literature, an interesting narrative has emerged…
- **It is not just the impact of Covid-19 on the food system that's important…**
- ….the impact of the food system on Covid-19 is also highly significant (**e.g. obese people & those with poor diet are more vulnerable**).

1. **Disruptions in accessing ingredients, processing, and packaging due to lockdowns and illness.**
2. Constrained affordability, accessibility and changing consumer preferences towards not only local, but also to lesser quality foods!
3. **Farmers have been dumping (waste) fresh produce, especially high-value commodities such as fruits, vegetables, meat, fish & dairy.**
4. Increased levels of financial difficulty and food poverty!
5. **Availability of food has not been only impacted by Covid-19, but by climate and by a lack of workers to pick produce.**

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To balance productivity and competitiveness with inclusion and tackling the climate emergency!

+

- We need to develop collaborative solutions that foster more resilient place-based food economies.
- Such an approach potentially transforms cities/urban areas and their rural surroundings **into self-reliant regions and places that produce, store, process, consume and dispose of food locally to the maximum extent possible!**

➢ Lever, J. (2020) Covid-19 Policy Brief: A regional Approach to Food System Reform

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Regional food system resilience post Covid-19

Place-Based Economic Recovery Network (PERN)

Thanks

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Reader in Sustainable & Resilient Communities

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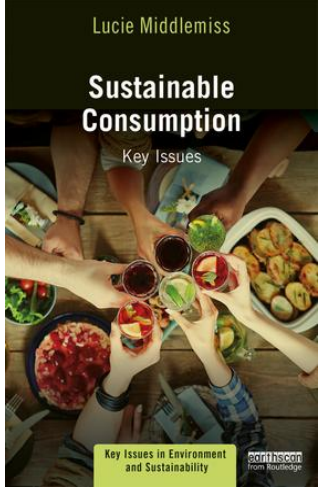

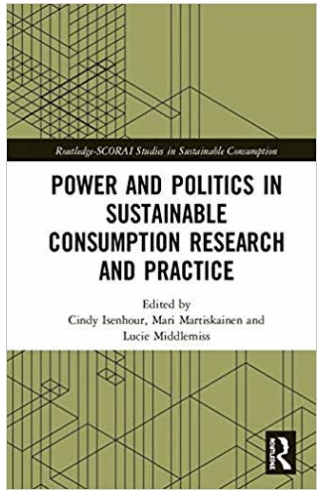

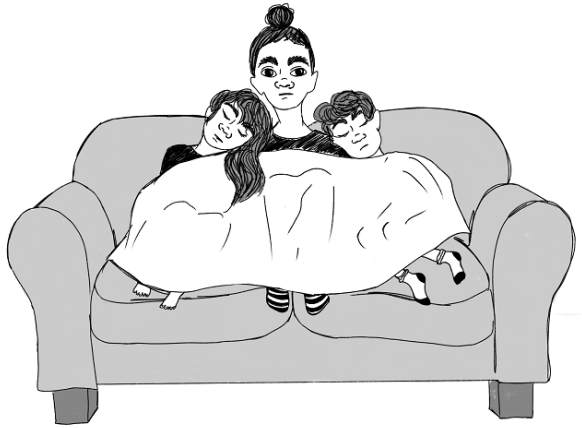


Trouw

OPINIE RELIGIE&FILOSOFIE DUURZAAMHEID&NATUUR

Energiearmoede

Het aantal mensen dat energierekening niet kan betalen dreigt te verdubbelen

Understanding the end of the supply chain: household consumption

Dr Lucie Middlemiss, @luciemiddlemiss

Associate Professor in Sustainability,

Co-Director of the Sustainability Research Institute, University of Leeds

STAMP DUTY

Cut on properties up to £500k until March 31, 2021

HALF-PRICE MEALS

Up to £10 a head off meals when eating out Mon-Weds

VAT CUT

Slashed 15% to 5% to help staycations & hospitality

6 MONTHS OF WAGE HELP

Employers paid to take on

Fair and sustainable outcomes


Trouw

OPINIE RELIGIE&FILOSOFIE DUURZAAMHEID&NATUUR

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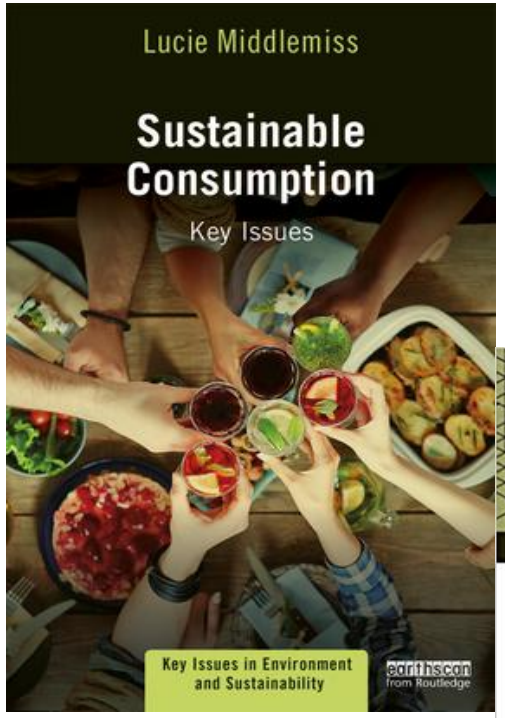
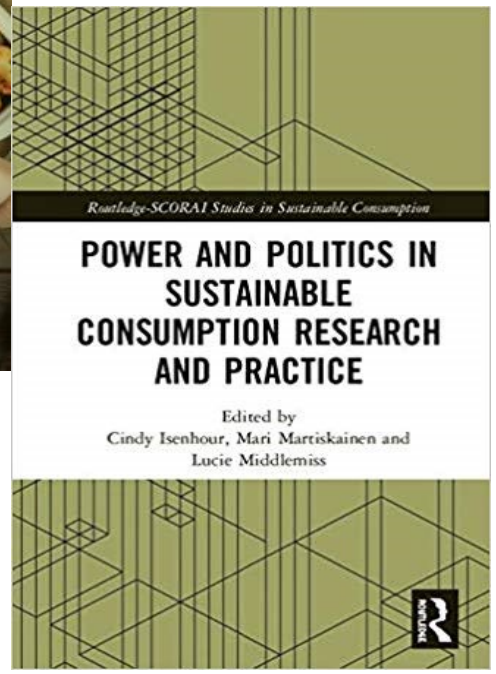
Illustration: by Mary Tallontire @murkybucket

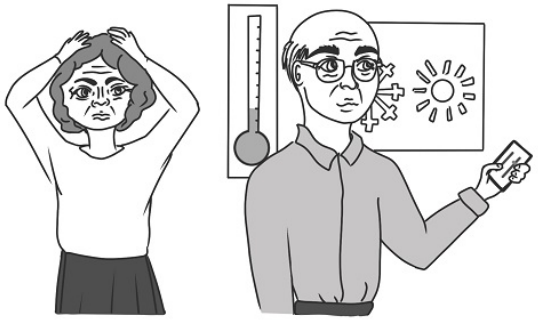




Key insights

- Consumption is relational.
  - Example: Usha being supported by her extended family.
  - Example: John and Jane household distribution of work impacts on ability to consume.
- This also includes identity relations.
  - Example: Environmentalists? “do we know anyone like that mum?”
- People are diverse, and have very different needs and expectations.
  - Example: disability and mobility, the implications of a cycling culture for physically disabled people.

Illustrations: by Mary Tallontire @murkybucket



Implications for policy and practice

1. Engage with social relations
   - Approaching people through their social networks.
   - Making distant relationships (agencies, providers) more positive.
2. Avoid reinforcing identity politics
3. Expect diversity. Design for inclusion.
   - Diverse inputs into design.
   - Road-testing initiatives with diverse panels.
   - Adapt to criticism.

From: Manchester Friends of the Earth, courtesy of Deborah Fenney Salkeld (see Google Scholar for her publications)