

Resilience and Competition Policy

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1. Overview

On the whole, the pandemic has shown the remarkable power of markets to adapt and respond. In the face of an unprecedented global supply shock, and a seismic rotation of demand away from services and towards goods,¹ businesses adapted, supply chains adjusted, and production reorientated. From the consumer's perspective, most goods were available, most of the time.

But consumers have not emerged unscathed. Shortages and shipping bottlenecks have caused price rises that are sufficiently significant and broad-based as to affect headline inflation rates.² In a number of markets, these effects are likely to be prolonged and worsened by the Russian invasion of Ukraine. Questions are increasingly being asked about the role of global supply chains in amplifying shocks, and what can be done to ensure more resilient markets.

How anxious should those responsible for competition policy be about resilience? What insights might a resilience "lens" bring to our analysis of markets, over and above traditional competition thinking? How do we spot vulnerabilities in markets; and when we do, is there anything we could, or should, be doing differently given what we have learnt in the last couple of years?

These questions are not just pertinent in the context of the global pandemic or the war in Ukraine. Climate change is likely to bring more economic shocks³ and a potentially disruptive adjustment and adaptation process in a number of sectors, particularly those that are fossil-fuel intensive.⁴

Moreover, resilience is not solely a concern in industries underpinned by global supply chains. Other parts of the economy can develop vulnerabilities, too: the 2008 financial crisis, for example, and more recently the problems in the UK retail energy market, have shown us the risks posed by business model fragility; risks which, when they crystallise in critical sectors, are often borne by society – in the form of taxpayer support – rather than owners and creditors, as they should be in well-functioning markets. Meanwhile, the recent CO2 shortage in the UK, and disruption and high prices in the meat sector in the US, show that even supply chains that are principally domestic, rather than global, can lack resilience.

¹ Goods consumption in the G7 countries was 10% higher in real terms in Q2 2021 than in Q4 2019, while services consumption remained around 8% lower. (Source: Bank of England, Monetary Policy Report – February 2022)

² See for example UNCTAD Review of maritime transport 2021, Figure 2, which projects that the surge in freight costs, if sustained, will on their own cause global consumer prices to be 1.5% higher in 2023.

³ For example, from a rise in the frequency of extreme weather events See, for example, IPCC, AR6 Climate Change 2021 – the physical science basis: summary for policymakers, p.10)

⁴ For example, the UK Government plans to phase out the sale of new petrol and diesel cars by 2030 and gas boilers by 2035.

Most consumers and businesses would agree in principle that we should take steps to improve resilience. But in practice, this can come at a cost. Many of the measures needed to ensure continuity of supply in unusual times – diversification of suppliers, reshoring of production, prudential requirements – are often likely to lead to higher prices in normal times. Similarly, from a competition policy perspective, action to promote more resilient market structures – by, for example, prohibiting mergers on the grounds that they will likely reduce resilience – may entail a trade-off between short-run efficiencies and long-run stability. On the other hand, it is important to remember that the role of competition authorities is to maximise consumer welfare *over time* (including during periods when markets face significant pressures).

To understand what role competition policy might play in building more resilient markets, and what trade-offs might be involved, it is necessary to consider, firstly, what causes some markets to be fragile – by which I mean vulnerable to supply disruption and discontinuity in the face of shocks or rapid structural change – and secondly, why disruption in some sectors of the economy causes more harm than in others.

To highlight these two sets of features, this paper draws on a series of illustrative examples – both from recent experience during the pandemic, and elsewhere – of markets that have been revealed to suffer from fragility, and considers what role competition policy, if any, has played in those conditions. These examples help to highlight that fragility can be driven by a number of inter-related factors, including:

- market concentration, and particularly the presence of market power;
- the financial resilience of suppliers, and their vulnerability to changes in trading conditions;
- supply chain dependencies, and in particular whether there is upstream dependency for key inputs on a small number of suppliers and/or particular geographic locations.

Key features that can aggravate or prolong the harm caused by disruption to supply include:

- the extent to which the product in question – whether it is a production input, service or consumer good – is essential, such that it cannot easily be substituted for alternatives in the face of shortages or supply discontinuity;
- whether there are significant barriers to the entry (and expansion) of new suppliers: where this is the case, it can prolong the disruption;

- whether the good or service is supplied to vulnerable consumers, who may be at greater risk of harm when supply is disrupted.

These factors can reinforce one another. For example, firms supplying essential goods may be inclined to operate in a more risky way (for example, by taking on more financial risk, or by operating in a way that risks regulatory sanction) if they know they will have access to state support (bailouts or regulatory forbearance) when they are at risk of failure (the “moral hazard” problem). And governments and regulators may be less willing to accept their failure (and hence more inclined to provide support or forbearance) if they are one of a small number of suppliers in a concentrated market. This in turn helps to support these firms’ strong position in the market, raising barriers to entry and entrenching the underlying vulnerability. This is the dynamic we observed in banking during the 2008 financial crisis; but we must be vigilant to it occurring in other sectors of the economy too, including energy and public procurement markets.

Having considered these illustrative examples, the paper turns to some of the potential implications for competition policy. How far competition policy *can* promote resilience depends on the underlying causes of fragility in a market (i.e. the first set of factors listed above), and in particular whether market concentration plays a significant role. How far competition policy *should* address resilience depends on the potential consumer harm caused by disruption and firm failure (i.e. the second set of factors listed above). For example, as Section 2 sets out, competition authorities should be especially concerned by mergers that leave markets for essential goods or services with so few providers that none of them can fail without creating significant consumer harm.

The role of competition policy in addressing global supply chain disruption is more indirect, as Section 3 sets out. Clearly, through its role in controlling the prevalence and negative effects of market power, strong competition policy can limit the extent to which cost increases arising from upstream supply chain disruption are passed on downstream to consumers. And it may play a role in addressing critical supply chain dependencies: in concentrated sectors such as shipping, for example, there is a need to be vigilant to the risk of cartels, the effects of further consolidation, and the impact of ongoing derogations from competition law. Promoting supply chain resilience is, however, principally a question for trade policy and industrial strategy, particularly where fragility is caused by dependencies not on particular suppliers but on particular locations. Nevertheless, governments looking to support resilience by creating sources of supply closer to home should be wary of the risks of simply replacing dependency on overseas suppliers with dependency on ‘national champions’ created through anti-competitive mergers or selective state support.

Section 4 considers the third factor influencing market resilience: financial risk. In most markets, the costs of firm failure are borne by owners and managers, meaning

that incentives to run financial risk are not misaligned with the needs of consumers and the wider economy. But in some cases – particularly when the amplifiers of harm listed above are present – there are wider costs of firm failures, which may be shouldered by consumers or taxpayers. Competition authorities – particularly those like the CMA that have functions to carry out market-wide reviews – can help to identify market failures that result in excessively risky capital structures or business models. But such failures are usually best addressed by government through regulation.

Section 5 considers a counterargument often presented by merging parties: that concentration of supply in small number of large firms can in fact support resilience, and that competition can undermine it. Although in certain markets, larger firms may be better-equipped to weather shocks and crises, it is very unlikely that situations in which firms possess market power, or are too big to fail, will deliver adequate levels of resilience. Now more than ever, we must be wary of the policy response to market disruption being hijacked by vested interests that stand to benefit from a more permissive approach to mergers.

The paper concludes with further considerations on the implications for competition policy; some suggestions for further research; and wider reflections on the steps governments might take to improve resilience, while preserving the benefits that competitive markets and trade openness can deliver.

2. Too few to fail: resilience and concentration

Provider exit – including failure – is a common feature of markets. The risk of going out of business can act as a powerful incentive on providers to continue to perform well. But in certain markets, the disorderly failure of suppliers can lead to substantial harm to consumers, and even the wider economy. In some cases, it may be so intolerable as to prompt governments to provide taxpayer support, and regulators to exercise forbearance, to prevent firms from exiting the market. The 2008 financial crisis, during which over £1tn of state support was provided to the banking sector in the UK alone,⁵ is the most infamous example of this, and it prompted wide-ranging reforms to improve the resilience of banks, and to ensure that failing institutions could exit the market in an orderly way. But this “too important to fail” problem can also arise in other markets, particularly those that are concentrated and provide essential goods and services. As the examples below illustrate, reluctance to allow firms to fail can create moral hazard problems, and provide large incumbents with protection against competitive forces that would normally drive efficiency and quality.

The UK audit market

Effective capital markets, and by extension the wider economy, depend on companies providing reliable information about their finances and performance. Audits provide an independent check on the information that companies produce, and assess how future risks might affect the reliability of that information. In doing so, robust, challenging audits increase trust in business and markets, improve the allocation of capital and ultimately support better economic outcomes for the benefit of all. Conversely, recurring audit failures lead to wasted capital and opportunities, and erode trust in markets.

In the UK (and many other countries), the market for audit services, particularly to larger companies, is dominated by the so-called “Big Four”.⁶ But rules around conflicts of interest and “rotation” of audit providers mean that, in practice, choice is even more limited than that number implies. A quarter of the most important audits had only one or two bidders to choose from in recent years. If one of the Big Four exited the market, many of the UK’s largest companies would be left with no choice at all. So, not only is there little real choice, but the current setup is also a threat to the resilience of the system. The Big Four are too few to fail.

The situation came about in part by a series of mergers that survived antitrust scrutiny, which failed to appreciate the risks to market resilience arising from greater

⁵ NAO (2013), Taxpayer support for UK banks

⁶ Around 97% of audits of UK FTSE350 companies are undertaken by Deloitte, Ernst and Young, KPMG and PwC.

market concentration. Before 1987, there were eight large international audit firms in the UK. That number fell to five following mergers in 1987, 1989, and 1998, all of which were cleared by competition authorities with little, if any, consideration of resilience. And the Big Five became the Big Four in 2002, following the demise of Arthur Andersen in the wake of the Enron scandal.

The fragile structure of the audit market, combined with a weak regulatory framework, has enabled poor performance to persist. High-profile lapses in standards have not affected the position of the Big Four, or enabled ‘challengers’ to gain market share. The need for regulatory reform has long been recognised. But for any new regime to be fully effective, the market needs to be less dependent on the Big Four, so that, in the face of performance problems, the regulator can sanction these firms, allow them to lose business, and ultimately to fail without causing intolerable disruption and loss of competition. This is one of the reasons the CMA examined the audit market and made a series of recommendations to support the emergence of new competitors to the Big 4. Many of these proposals are now being taken forward by the UK Government.⁷ However, the need for complex interventions to support “challenger” firms may not have been necessary had resilience risks – and particularly the risks of leaving so few providers of an essential service – been given greater prominence in merger assessments.

Credit ratings agencies

Credit rating agencies (CRAs) assess how likely it is that different types of debt will be repaid.⁸ Although the industry has existed for over a century, the role of CRAs grew from the 1980s as financial markets were liberalised around the world. In theory, independent credit ratings can reduce information costs, thereby promoting liquid and efficient capital markets. In practice, the experience has been rather different. The role of CRAs in the financial crisis is well known: top ratings were maintained on thousands of mortgage-backed securities that transpired to be nearly worthless. It followed a string of other collective misjudgements: CRAs were criticised for being slow to respond to the 1997-8 Asian financial crisis, and the high-profile corporate failures of Enron, WorldCom and California energy companies⁹ in the early 2000s.

A key feature of the market, which persists today, is its dominance by the ‘Big Three’ agencies, which together have a market share over 90%, with the figure closer to

⁷ CMA, Statutory audit market study, April 2019

⁸ The International Organization of Securities Commissions (IOSCO) defines a credit rating as “an opinion regarding the creditworthiness of an entity, a credit commitment, a debt or debt-like security or an issuer of such obligations, expressed using an established and defined ranking system”.

⁹ Enron was rated investment grade four days before its bankruptcy; the California energy companies were rated “A-” two weeks before defaulting.

100% for some financial instruments.¹⁰ Their strong position is down partly to the very high regulatory barriers to entry that existed in the past (barriers that did not, in the end, do much to improve the quality and integrity of ratings), particularly in the US. For 35 years until 2007, only three CRAs achieved for any sustained period the necessary approval from the SEC¹¹ to produce ratings for various regulatory and benchmarking purposes (others that achieved the status temporarily merged with one of the three that are currently dominant¹²).

Weak competition, combined with the ‘hardwiring’ of the Big Three into financial regulation, meant that when standards lapsed, their position in the market was unaffected. Although regulatory reforms have sought to break the reliance of regulation on ratings,¹³ and to bring competition to the market,¹⁴ the dominance of the Big Three persists, and it is possible – given their continuing importance to the functioning of capital markets,¹⁵ and the difficulties challenger agencies face in attaining comparable scale and coverage – that they are too few to fail. As with the audit market, so long as this situation persists, it will be difficult for either competition or regulation to drive up standards in the sector.

Clearly, horizontal mergers by any of the big three are likely to be problematic on both ‘traditional’ competition grounds, and from a resilience perspective. But competition authorities may also need to look carefully at other transactions that may serve to bolster the position of the big three, and leverage their power into adjacent markets, such as Environmental, Social and Governance data and ratings.¹⁶ And as with the audit sector, there may also be a role for authorities in thinking through how best support the emergence of challengers in such markets.¹⁷

¹⁰ European Securities and Markets Authority, Report on CRA Market Share Calculation, December 2021

¹¹ Nationally Recognized Statistical Ratings Organization status.

¹² A number of these transactions – for example, Fitch’s merger with IBCA in 1997 and its acquisition of Duff & Phelps in 2000 – arguably enabled Fitch to acquire the scale and global coverage necessary to compete with Standard and Poor’s and Moody’s

¹³ See, for example, the Financial Stability Board’s (FSB) Principles for Reducing Reliance on CRA Ratings, endorsed by the G20 in 2010.

¹⁴ For example, the EU’s CRA Regulation requires issuers or related third parties, who intend to appoint two or more CRAs to rate an issuance or entity, to consider appointing at least one CRA with no more than 10% of the total market share in the EU.

¹⁵ For example, credit ratings remain a key feature of the investment mandates of institutional investors: many mandates restrict the fund manager to invest a fixed percentage of fund assets in “investment grade” securities. Some require ratings from particular agencies. See e.g. Baghai et al (2020), The use of credit ratings in financial markets, ECGI Finance Working Paper 612/2019.

¹⁶ See, for example, FIA, Investor interest in ESG spurs rating agency acquisitions, 23 March 2020.

¹⁷ The UK regulator, the Financial Conduct Authority, is planning a market study of the sector at the end of 2022, looking at issues such as pricing and contractual relationships, barriers to entry, and the scope for and level of innovation.

Aircraft manufacturing

Two companies – Airbus and Boeing – overwhelmingly dominate the aircraft manufacturing sector. Airbus developed its position through consolidation, backed by European governments, with the explicit intention of creating a “champion” to rival Boeing. Boeing’s scale was achieved in part through mergers that cleared antitrust scrutiny in the 1990s. In both the EU and the US, there is a political as well as an economic interest in ensuring “their” aircraft manufacturer is strong enough to compete against its rival across the Atlantic: that is, the failure of either would lead not only to a loss of competition, but a loss to prestige. Consequently, both companies have benefited over the years from extensive state support, including subsidies and access to major defence contracts.

It is in the context of this dual economic and political dependency that two deadly crashes involving a new generation of Boeing airliner – the 737 MAX – were found to have been in part the result of lax regulatory oversight, whereby evaluations of the 737 MAX’s safety were delegated by the FAA to Boeing itself.¹⁸ The regulatory forbearance continued even after the disasters that killed 346 people: the FAA’s and the DoJ’s eventual fines amounted to less than 4% of Boeing’s annual turnover and were a small fraction of the federal support the company received during the pandemic. The only individual to face criminal charges has been the chief technical pilot. Meanwhile, the CEO walked away with pension and stock options worth more than \$60m.

Just as the concentrated market structure – and consequent strategic and economic dependence on Boeing – prevented regulation from doing its work (because the FAA had essentially been unable to act),¹⁹ so it prevented competition from imposing any significant sanction on Boeing. Its market capitalisation fell by under a tenth and it continued to pay quarterly dividends.²⁰ And since regulators lifted prohibitions that prevented the 737 MAX from flying, orders have been unexpectedly strong.²¹

¹⁸ See, for example, US House of Representatives Committee on Transportation and Infrastructure, The design, development and certification of the Boeing 737 MAX, September 2020 (“The MAX crashes were not the result of a singular failure, technical mistake, or mismanaged event. They were the horrific culmination of a series of faulty technical assumptions by Boeing’s engineers, a lack of transparency on the part of Boeing’s management, and grossly insufficient oversight by the FAA—the pernicious result of regulatory capture on the part of the FAA with respect to its responsibilities to perform robust oversight of Boeing and to ensure the safety of the flying public”)

¹⁹ Concerns about industry capture of the FAA are long-standing. See, for instance, Wilson (1989), *Bureaucracy: what government agencies do and why they do it*, which argues industry pressure delayed FAA decisions to ground DC-10s following several crashes.

²⁰ See, for example, Simple Flying, Boeing approves shares dividend despite ongoing MAX crisis, 25 June 2019 and The Economist, Why Boeing’s shares have not fallen further after the 737 MAX crashes, 7 April 2019

²¹ Airline Weekly reported in August 2021 that Boeing lost 560 orders (net) for the 737 MAX in 2019 and 2020, but received 524 orders in the first seven months of 2021. (The Boeing 737 Max is back with passenger fears proving a mirage, 13 August 2021)

It is questionable whether, in any well-functioning market, a company should survive such catastrophic lapses in safety standards so unscathed. But dependence on Boeing has prevented either competition or regulation from doing the job it normally should. Support to make Boeing and Airbus stronger has weakened the market, which – because failure, or even a significant loss of market share, is intolerable – can neither be regulated effectively, nor subject to fair competition.

There are few obvious solutions, and still less political appetite, to address the dependencies in the aircraft manufacturing sector that make the demise of either Airbus or Boeing – and hence meaningful competition beyond the existing duopoly – impossible. But the situation reminds us that efforts to create “champions” – as well as creating obvious competition problems – can make markets more fragile over time. This is especially salutary when arguments for such champions are often framed in terms of promoting greater resilience through self-sufficiency. The proposed Siemens-Alstom merger – branded the “Railbus” deal in certain quarters – is a case in point.²² In the face of strong and explicit political support for the merger, the European Commission, supported by a number of national competition authorities, including the CMA, rightly blocked the deal, concluding it would harm millions of rail passengers. It will continue to be important that antitrust authorities do not fall victim to capture or political pressure, and to ensure that the interests of consumers remain at the heart of merger control.

²² For example, following the Commission’s decision to block the deal, Bruno Le Maire, the French Economy Minister, said: “I think everyone knows that given China’s rise [...] we need to gather Europe’s strengths. That’s why [the decision is an] economic error and a political mistake.”

3. Resilience and supply chain dependencies

PPE and semiconductors

For many goods, the pandemic caused disruption to supply, following restrictions on movement and economic activity. There were also surges in demand for many products, such as consumer electronics and cleaning supplies. This dynamic was particularly evident for personal protective equipment (PPE). Initially, this caused disruption and severe shortages, in part due to factory shutdowns and high demand in China, a key exporter of PPE. But for many types of PPE, these supply chain issues were resolved relatively quickly.²³ This can be explained in part by the relative simplicity of the production process, which enabled existing suppliers rapidly to expand production, and other companies to enter the market. The same is true of hand sanitisers, where, following initial shortages and very high prices²⁴ a variety of companies – from cosmetics manufacturers to gin distillers – were able to repurpose production facilities to meet demand.

Demand for semiconductors also surged during the pandemic. But in this case, the supply response was much slower. Shortages persisted throughout 2021 and are expected to continue this year.²⁵ And because semiconductors are a critical component in a vast array of consumer goods, there have been visible, and widely reported, effects downstream. Car production has been particularly badly hit,²⁶ with knock-on price increases in the market for second-hand cars, which in the UK increased by 29% in the year to December 2021.²⁷

One feature that helps to explain the disruption is the sheer complexity of semiconductor production and the vast number of supply chains involved. There are as many as 49 gases which may be used in semiconductor production – many of which come with their own extensive and complicated supply chains.²⁸ A disruption in one chain can thereby filter down across multiple intermediate chains, and related industries.

²³ For example, monthly imports by weight of surgical gowns to the UK increased by 41% between March and April 2020; by 360% between April and May; and by 120% between June and July. (Source: uktradeinfo database)

²⁴ See, for example, Economics Observatory: How can competition authorities tackle price rises in a crisis? (30 November 2020) and the reports of the CMA's Covid-19 Taskforce.

²⁵ Deloitte Insights, My kingdom for a chip: The semiconductor shortage extends into 2022, 1 December 2021

²⁶ For instance, the number of cars manufactured in the UK in 2021 was 35% less than in 2019. (SMMT Motor Industry Facts 2021 and December 2021 Manufacturing Data)

²⁷ ONS Consumer price inflation time series dataset (Series ID: D7IL). The price of new cars has remained more steady, but waiting times for delivery for many models in the UK now exceeds 12 months (see, for example, Fleet News, *Semiconductor shortage: Vehicle supply impact to 2023, warns carmaker*).

²⁸ National Institute of Standards and Technology, Index of Semiconductor Process Gases [accessed 14 March 2022]

Another feature, more relevant from a competition policy perspective, is that parts of the semiconductor supply chain are highly concentrated, with high barriers to entry,²⁹ and one or few suppliers dominating. Reliance on a small number of large suppliers limits the alternatives when disruptions occur. We saw the effects of this dependency play out when a series of localised non-pandemic-related shocks in the first half of 2021 heaped further turmoil on the sector: a drought in Taiwan caused shutdowns of semiconductor foundries³⁰ accounting for 63% of global production;³¹ a fire shut down a Japanese factory controlled by Renesas Electronics that supplies 30% of microcontroller units (a type of semiconductor used in cars),³² and power shortages in Texas caused by Storm Uri caused the shutdown of plants operated by NXP and Infineon, two key suppliers to the car industry.³³ Concentrated markets perform particularly badly at times of significant demand uncertainty. The suppliers are less worried about losing market share to competitors if demand suddenly increases and can wait for the demand uncertainty to subside before committing to expensive investment in new production capacity.

The different experiences of PPE and semiconductor supply during the pandemic helps to highlight that fragility is not intrinsic to global supply chains but instead is a feature of dependencies – particularly on key suppliers – that exist within some of them. The point is further reinforced by the fallout from the invasion of Ukraine, which has exposed dependence on Russian oil and gas in much of Europe; on rare gases from Ukraine that form part of the semiconductor supply chain;³⁴ and on wheat from both countries, particularly in the Middle East and Africa.³⁵ High barriers to entry exacerbate such dependencies, and supply chain complexity can make them harder to identify and mitigate.

Traditional competition policy tools can help prevent new supply chain dependencies that may be created through horizontal mergers (that is, the vulnerability that comes from market concentration). They may also, through appropriate control of vertical mergers, prevent the risks caused by upstream market power from being aggravated via input foreclosure. However, those tools do not provide any basis for dealing with

²⁹ The cost of a state-of-the-art semiconductor fabrication facility is at least \$12bn (Source: The White House, [Report of the 100-day supply chain review](#), June 2021). Once a new facility is established, operational costs are significant, and ongoing expensive capital investment is required to keep producing cutting-edge chips.

³⁰ Autocar Professional, Drought and fire worsens chip shortage, TSMC sees it extending into 2022, 1 Sep 2021. Taiwan Semiconductor Manufacturing Corporation (TSMC) alone accounts for 53% of global supply of contract-manufactured semiconductors, and 92% of the supply of chips used in the latest iPhones and automotive AI.

³¹ The White House, [Report of the 100-day supply chain review](#), June 2021

³² Ibid.

³³ Financial Times, Texas winter storm blackouts hit chip production, 17 February 2021

³⁴ Ukraine accounts for around 70% of global neon and 40% of krypton supply. (Center for Strategic & International Studies, Russia's invasion of Ukraine impacts gas markets critical to chip production, 14 March 2022).

³⁵ Combined, Russia and Ukraine produce a quarter of the world's wheat. Gambia, Lebanon, Djibouti, Libya and Tunisia all depend on Ukraine for over 40% of their wheat supply. (World Bank Group, Trade Watch, March 2022).

resilience risks that are not linked to market structure – for example, dependencies arising from multiple suppliers being located in the same geographic area (and which may therefore all be vulnerable to the same local shock). Nor can they directly help to address dependence on overseas suppliers that have achieved their position through organic growth or state support (provided they are not abusing a dominant position).³⁶

It is also worth keeping in mind that concentration of supply in particular locations is a feature, rather than a bug, of globalisation and trade openness: the theory of comparative advantage demonstrates how the gains from trade are maximised when countries specialise in producing the things they can make with the greatest relative efficiency. Mitigating the risks that may come from this specialisation is principally a question for trade policy and industrial strategy, and may entail a reduction in the gains from trade. In particular, while measures that level genuinely distorted playing fields, such as appropriate trade remedies, are likely to promote both resilience and efficiency, measures that seek to reshore production because it is thought to be desirable (for resilience reasons, or on other grounds) to have sources of production available closer to home are likely to entail a trade-off.³⁷

Carbon dioxide (CO₂)

CO₂ is a key input in a variety of products and processes, from carbonating soft drinks and beer, to stunning animals before slaughter, and prolonging the shelf life of food, and preserving it for transport.

In the UK, the CO₂ market is largely domestic, since bulk transport requires specially equipped ships and import terminals, and natural evaporation rates mean that CO₂ cannot typically be stored for longer than four weeks. The UK is dependent for a large share of its CO₂ supply on two ammonia plants which, following acquisitions in the 2000s and 2010s, are both owned by one company.³⁸ Applying conventional competition analysis when it reviewed one of these acquisitions, the CMA's predecessor set a remedy that ensured competition downstream in CO₂ supply, but it did not prevent consolidation of CO₂ production. CO₂ is a low-value by-product of ammonia, the supply of which is influenced by seasonal demand for fertilisers and the price of natural gas. In September 2021, natural gas prices reached a level that

³⁶ The development and fabrication of semiconductors, for instance, has been supported in many cases by state subsidies. For example, TSMC (see footnote 30 above) started life as a joint venture between the Taiwan government (which had a 48% stake) and Philips Electronics NV.

³⁷ Examples include the US Innovation and Competition Act, adopted in June 2021, which provides \$250bn in support for US semiconductor production, and the European Chips Act, intended to mobilise €43bn of public and private investment to support the EU semiconductor sector.

³⁸ CF Industries

made ammonia production uneconomic, and CF Industries shut down its facilities, and with them, 60% of the UK's CO2 supply.

The extent of the UK's dependence on the CO2 produced by CF industries was such that the government stepped in to subsidise production in one of their plants. The reliance on a single supplier is likely to have affected the government's bargaining power in these negotiations; it is also likely to have a lasting effect on CO2 prices (and hence the prices of products that use CO2 as an input), and represents an ongoing vulnerability to supply.

The CO2 shortage reinforces the point that it is not global supply chains themselves that are the cause of fragility, but specific dependencies, which can also arise within a country's own borders. Dependencies closer to home are in principle easier to identify, prevent and prepare for, although it is noteworthy that CO2 shortages have occurred before in the UK. And like the audit sector, the CO2 case also illustrates that the impact of a transaction on market resilience has rarely been a feature of merger assessments in the past.³⁹

Shipping

All supply chains depend on transport to function, and the mode of transport that underpins most global supply chains is containerised shipping.⁴⁰ During the pandemic, supply-side factors, such as sudden port closures and labour shortages from lockdowns, have interacted with a surge in demand for some consumer goods to create bottlenecks and disruption. The impact has been significant: the cost of shipping a container from China has risen as much as 7-fold since 2020.⁴¹

Although there are initial signs that freight rates have plateaued, there are no signs of a quick reversal back to previous levels: shipping costs alone are expected to push global inflation 1.5 percentage points higher in 2022, with more marked effects on items such as furniture and electronic devices.⁴² Moreover, the spike in spot rates has led many customers to switch to longer-term contracts (where prices have also risen), which may limit their ability to benefit in the short term if prices fall.

It seems likely that, under any market structure, shipping costs would have materially risen as a result of these factors. But two features of the container shipping market

³⁹ The exception is when security of supply has been shown to be a dimension of competition: that is, when there is evidence customers compare and choose suppliers according to their ability to guarantee supply in all conditions (see, for example, the CMA's 2016 inquiry into the proposed merger of Clariant and Kilfrost, two suppliers of aircraft and rail de-icing fluids).

⁴⁰ Over 80% of international trade in goods is conducted by sea ([Review of Maritime Transport 2021 | UNCTAD](#))

⁴¹ See, for example, Drewry World Container Index.

⁴² UNCTAD (2021) Review of maritime transport 2021, Figure 2

may have played a role in exacerbating the price rises; and they may also raise the possibility that prices do not fall as quickly as they should.

First, a search for cost efficiencies and economies of scale over the past 15 years has seen a growing reliance on mega-ships.⁴³ These have reduced costs for liners,⁴⁴ but they may also reduce resilience. In particular, mega-ships can limit the options available to firms that need to ship their goods (since cargo all ends up in the same mega-ship, rather than separate vessels); they reduce the scope for diversification of routes away from larger, congested ports (since only the largest ports can handle mega-ships); and they have raised barriers to entry and expansion for new and smaller players, who cannot easily achieve equivalent economies of scale with smaller ships.

Second, the shipping industry has seen significant consolidation in recent years: both through horizontal mergers,⁴⁵ through the failure of a major carrier,⁴⁶ and through vertical integration of terminal facilities and, more recently, logistics.⁴⁷ Concentration in the sector is higher still when one takes into account links between firms through alliances and consortia agreements, the existence of which is facilitated by long-standing exemptions from competition law in various jurisdictions. The three major alliances control around 80% of global contained capacity.⁴⁸

This consolidation appeared unproblematic during the 2010s, when the efficiencies brought by mega-ships (combined with overcapacity) drove shipping costs to record lows. But the market structure has proved fragile and inflexible in the face of shocks, and it has placed global shipping alliances in a strong bargaining position to sustain prices as the immediate crisis recedes. To reduce costs and improve flexibility, some of the largest retailers are chartering their own vessels: Amazon ships 72% of its packaged goods on specially chartered vessels, up from 47% in 2019. Other retailers, like Walmart, Costco, Ikea, and Asda are reportedly following similar strategies.⁴⁹ Smaller retailers, which cannot adjust their business models in the same way, are likely to face a competitive disadvantage.

Looking ahead, competition authorities will need to give careful consideration to how the containerised shipping market is developing, and particularly the implications of

⁴³ Megaships are often defined as ships able to carry at least 10,000 standardised 20ft shipping containers.

⁴⁴ On a per contained basis, larger ships generally cost less to build and operate than smaller ones.

⁴⁵ Maersk acquiring Hamburg Sud (2017); Cosco merging with China Shipping and acquiring OOCL (2018); CMA-CGM acquiring NOL (2016); Hapag Lloyd acquiring CSAV (2014) and then UASC (2017); and Ocean Network Express JV between K-Line MOL and NYK (2017).

⁴⁶ Hanjin Shipping, a South Korean logistics and shipping firm, was declared bankrupt in February 2017. Its failure caused significant disruption as cargo ships were detained at ports and canals.

⁴⁷ [Container Shipping Shifts to Vertical Integration \(fitchratings.com\)](https://www.fitchratings.com/news/container-shipping-shifts-to-vertical-integration)

⁴⁸ [Ocean Carrier Alliances – The Tripartite | AJOT.COM](https://www.ajot.com/ocean-carrier-alliances-the-tripartite)

⁴⁹ CNBC, [How amazon beats supply chain chaos with ships and long-haul planes](https://www.cnbc.com/2021/12/04/amazon-beats-supply-chain-chaos-with-ships-and-long-haul-planes.html), 4 December 2021

consolidation, exemptions from competition law, and vertical integration. These features may have affected the sector's ability to deliver reliable and affordable services during times of crisis; and they may enable prices to be sustained after crisis conditions recede, turning a price spike into a high plateau. In particular, competition authorities will need to be alert to the risk of cartelisation created by high market concentration and the existence of alliances.⁵⁰ For its part, the CMA will be reviewing the exemption that the UK retained after Brexit before it expires in 2024, and will provide Ministers with advice on whether to replace, vary or revoke it.⁵¹

⁵⁰ See, for example, US Department of Justice press release, *Justice Department and Federal Maritime Commission Reaffirm and Strengthen Partnership to Promote Fair Competition in the Shipping Industry*, 28 February 2022

⁵¹ A block exemption to cover the activities of shipping consortia was first introduced in the EU in 1995. The current regulation, which was retained in UK law after Brexit, allows a consortium of liner shipping operators with a combined market share not exceeding 30% to enter into cooperation agreements to provide joint liner shipping services whereby liners collaborate on sharing services but contract directly with customers. These agreements, however, cannot include price-fixing or market-sharing and members of a consortium must set their own prices and market their own services.

4. Resilience and financial risk

The last decade has seen a shift to more highly-leveraged capital structures. More recently, this trend may have accelerated with the growth of private equity acquisitions during the pandemic.⁵² In general, higher leverage is likely to make businesses more vulnerable to changes in their trading climate, leading to more firm failures. Although the impact of failure is generally greater in concentrated sectors, it can also cause disruption, and risk harm to consumers, in other markets, such as care homes and retail energy.

Southern Cross

Southern Cross was the UK's largest care home provider that, when it failed in 2011, operated 750 care homes across the UK that looked after 31,000 older people. It was bought in the early 2000s by Blackstone, a private equity company. Following the acquisition, Southern Cross sold and leased back its property portfolio under an arrangement that involved high annual rental increases. It thereby became highly leveraged, and less resilient to changes in trading conditions. When the occupancy rates of its homes fell unexpectedly, it was unable to absorb the associated loss in revenue.

In the end, the homes operated by Southern Cross were transferred to a number of other providers, and nobody was evicted from their place of residence. But an independent report commissioned by the Care Quality Commission considered that the rescue was a “close run thing”,⁵³ and that had another provider failed around the same time, it may not have been possible to ensure continuity of care for residents, resulting in significant harm to some of the most vulnerable people.

In large part as a response to these problems, the government implemented a market oversight regime in England to monitor the financial viability of large and significant providers in this sector, and forewarn local authorities if any are at risk of failure.

Though it has not fallen victim to the failure of a major provider, the children's homes sector – which was the subject of a recent CMA market study – displays a number of parallels with the care homes market. It provides essential services for some of the most vulnerable people in society, making the consequences of disorderly failure particularly severe. And it has also seen a growth in providers operating at with high leverage, particularly those owned by private equity firms. In response, the CMA has recommended a number of measures to support resilience, including a market

⁵² See, for example, Dechert LLP, *2022 Global Private Equity Outlook*

⁵³ Institute of Public Care, [The stability of the care market and market oversight in England](#), February 2014

oversight framework analogous to that now in place in the residential care home sector.

Carillion

The failure of Carillion, the construction and facilities management firm, also serves to highlight the disruption that can occur when companies supplying critical services operate risky business models. When it collapsed in 2018, Carillion was one of a small number of major strategic suppliers to government. It had grown rapidly in the 2000s,⁵⁴ in part through debt-financed acquisitions of rivals, and by the time of its demise held more than 400 public sector contracts, many of which it had won through offering very low-price bids.⁵⁵ When some of these projects proved costlier than expected to deliver, Carillion – which as a result of financial engineering was more leveraged than its accounts would suggest – was unable to absorb the losses. After its failure, some of its contracts were handed over to new suppliers. But other projects, including contracts to build new hospitals in Liverpool and Birmingham, were delayed by up to five years, causing patients to lose out on upgraded facilities. The Government spent £150m in taxpayers' money keeping essential services running; £2bn was left owed to 30,000 suppliers, and the Pension Protection Fund faced the largest ever hit on its resources as a result of Carillion's £2.6bn pension liability.⁵⁶

The case of Carillion (and Interserve, another major supplier restructured in similar circumstances) also shows how concentration on the demand side (i.e. buyer power) can interact with concentration on the supply side to amplify resilience problems. Just as the government was reliant on a small number of major suppliers, so those suppliers were dependent on the government for contracts. This buyer power, combined with award criteria that placed overwhelming emphasis on price, led major suppliers to make bids that were uneconomic, and to make up the difference during the contract. In effect, through its procurement practices, the government was arguably incentivising business models that were inconsistent with the resilience and stability required to deliver important public services and projects.

⁵⁴ Carillion acquired Mowlem in 2006, Alfred McAlpine in 2008 and Eaga in 2011. A proposal to merge with Balfour Beatty in 2011 was dismissed by Balfour Beatty's board.

⁵⁵ Such practices were prevalent in the sector at the time. Interserve, another major supplier to government, was restructured in the same year that Carillion failed.

⁵⁶ BEIS Committee and Work and Pensions Committee Joint Report on Carillion, 16 May 2018

Since the failure of Carillion, the government has sought, with input from the CMA, to adapt its approach to procurement, by using its buyer power to promote healthier public procurement markets.⁵⁷

Retail energy

By traditional metrics, the UK's retail energy market appears competitive.⁵⁸ However, a surge in wholesale gas prices from September 2021, in combination with a price cap on retail energy, has caused the failure of a large number of smaller suppliers. The government has also, for the first time since privatisation, placed a mid-size supplier – Bulb – into the so-called “special administration regime”, at a cost that is forecast to reach £2.2bn.⁵⁹ The full cost of these measures, which were required to maintain continuity of supply for customers, will be borne not by the owners of failed suppliers, but by billpayers⁶⁰ and taxpayers.

While it may have led to good deals for consumers who were willing and able to shop around, competition alone was ineffective in delivering stability in the retail energy market, since providers had insufficient commercial incentive, nor were they required by regulation, to ensure that their business models were resilient to price volatility in the wholesale gas market.

The case of retail energy shows that financial risk can create resilience problems even in less concentrated markets if suppliers are providing essential goods or services. It also illustrates how a lack of business model diversity (which is unsurprising in retail energy, given the homogenous nature of the product being supplied) can cause suppliers to fail in quick succession.

⁵⁷ See, for instance, Cabinet Office, Market management – May 2021, a guidance note intended to help procurers design commercial strategies and contracts that promote healthy markets. The importance of government and competition authorities ensuring credible alternative sources of supply for government has also been discussed by Kovacic (2020) in the context of US defence procurement. “A consideration that should be paramount in the thinking of the antitrust agencies and government purchasers [is] what will the government buyers do if the remaining firm or firms perform inadequately – for example, by exercising weak discipline over costs, failing to provide desired levels of quality, or showing little imagination or initiative in developing new technologies or designs? It seems that a vital element of the answer to this question is always to think in terms of fostering one or more alternatives. (Competition policy retrospective: the formation of the United Launch Alliance and the ascent of SpaceX, GWU Law School Public Law Research Paper No. 2020-47)

⁵⁸ See, for example, Ofgem [Retail Market Indicators](#)

⁵⁹ Office for Budget Responsibility, Economic and Fiscal Outlook – March 2022, para 3.10

⁶⁰ The transfer of customers of the 28 failed energy suppliers to date under the Supplier of Last Resort regime will raise typical household energy bills by around £68 per year.

5. Can concentration help resilience, and can competition harm it?

In many cases, larger firms may be better-equipped to weather shocks and crises than smaller ones: for example, they tend to have a wider range of external financing options, and they are better equipped to monitor and diversify their supply chains in the face of disruption. The UK supermarket sector, for instance, which consists of a relatively small number of large players, was able to successfully absorb and adapt to the impact of the pandemic, continuing to supply essential goods in the face of supply chain disruption, changing demand patterns, and a range of complex restrictions and regulations.

It does not follow, however, that highly concentrated markets are more resilient in general. For a start, the UK supermarket sector is relatively competitive (thanks in part to merger control⁶¹). More generally, the structure that delivers the “optimal” mix of efficiency and resilience is likely to vary between markets, and the types of disruption to which they are exposed.⁶² And crucially, as the examples above illustrate, it is extremely unlikely that structures in which firms have significant market power, or where they are protected from normal competitive forces because they are too important to fail, will deliver an appropriate level of resilience.

A similar argument might be made that resilience is undermined by “too much” competition. Fierce competition can in principle undermine resilience, for example when it causes firms to run financial risks in pursuit of market share, or to underinvest in spare capacity. But this dynamic can happen in oligopolies (for example, public procurement) as well as markets where there are many suppliers (retail energy). In markets where such risk-taking leads to unacceptable levels of consumer harm, the solution is not to restrain competition, but rather to ensure it is working effectively through appropriate regulation.

Finally, critics of the argument that competition supports resilience might point to the exemptions granted to certain sectors during the pandemic to help ensure continuity of supply. However, in the UK and elsewhere, these have been short-term in nature and limited to agreements dealing with production, supply, or purchase arrangements, rather than permitting hard-core cartel behaviour.⁶³ Arguing that the effects of disruption can be mitigated by short-term coordination is quite different

⁶¹ The CMA blocked the merger of two of the largest supermarkets – Sainsbury’s and Asda – in April 2019.

⁶² For example, in the UK service sector, larger firms outperformed SMEs in terms of turnover during the pandemic. But in manufacturing, there does not appear to have been a notable difference in performance between SMEs and larger firms. (ONS, The impact of the coronavirus so far, 9 December 2020)

⁶³ See, for example, OECD, Co-operation between competitors in the time of Covid-19, 26 May 2020. In the UK, so-called public policy exclusion orders were made in the groceries, dairy, ferries and health services sectors.

from arguing that the causes of disruption are best prevented by long-term protection from competition.

With the disruption that has afflicted the global economy over the last two years looking set to continue, it is possible that calls will grow for businesses to be protected from normal competitive forces more often. But we should continue to look sceptically on these, and particularly on calls for a more permissive approach to mergers, whether as a means to promote long-term resilience, or as means to assist industries in immediate financial distress. As set out above, creating “national champions” with market power by allowing anti-competitive mergers is unlikely to be justifiable on either efficiency or resilience grounds. And for firms facing failure that governments wish to protect for public policy reasons, a well-designed package of temporary financial assistance is likely to be preferable to permitting a merger that permanently damages competition.⁶⁴

⁶⁴ In January 2009, Lloyds TSB acquired HBOS in the midst of concerns that, without external support, HBOS would fail. The OFT recommended that the merger not proceed, but the UK government approved the merger on public interest grounds to ensure the stability of the UK financial system.

6. Concluding remarks

Competition policy

Given the connection between concentration and resilience, it is natural for a discussion of the role of competition policy in this context to divide along the well-worn lines of the US antitrust debate: namely, whether competition policy should be concerned with the structure of markets or the welfare of consumers. But the concept of consumer welfare – particularly when considered over the long term – is more malleable than is often characterised, and accommodates resilience considerations. Consumer welfare is profoundly affected by disruption to supply, particularly when it occurs in markets for essential goods and services. Competition authorities, including those that apply a “consumer welfare standard”, can and should take into account the risk and impact of such disruption in their decision-making.

Although resilience clearly contributes to consumer welfare, it is not something that generally drives consumer choice. Nor can consumers reasonably be expected to judge the resilience of companies that they buy from. The incentive on firms to operate in a resilient way normally comes not from demand-side signals, but from the direct losses faced by owners and managers when their businesses cannot supply customers, and/or are forced to exit the market. In most markets, this incentive is sufficient to provide an acceptable level of resilience across a market (in part because in most well-functioning, competitive markets, the harm to consumers from market exit of individual firms is minimal).⁶⁵

However, in certain markets, including some of those considered above, this may not be the case: for example, firms may face irreducible upstream dependencies on a small number of suppliers (semiconductors); competition may not be working in a way that delivers the resilience customers want (shipping); or business models and practices across a market – such as leveraged capital structures – may make firms vulnerable to disorderly failure (retail energy). The harm caused by disruption can be particularly severe when it affects the supply of essential goods or services, and it may be prolonged by high barriers to entry and exacerbated further if a large number of consumers are vulnerable.

Concentration is a feature that is at the heart of much of the analysis carried out by competition authorities. But these other features – and how they interact – have arguably not been given sufficient consideration in the past. Decisions to clear

⁶⁵ For example, in recent years, the UK has seen the failure of a number of well-known retail chains, including department stores (House of Fraser in 2018 and Debenhams in 2019) and restaurants (Carluccio's in 2020 and Jamie Oliver's in 2019). While these may raise concerns on other public policy grounds, the impact on consumers has been limited.

mergers of audit firms in the 1990s gave no consideration to the risks and impact of the failure of a major provider. In other markets, such as shipping, consolidation and alliances have been permitted that may have created efficiencies in regular times but have likely led to higher prices and less flexibility and choice at times of crisis.

A closer focus on these features, and the value that customers gain from supply continuity and predictability, would eliminate mistakes from competition analysis. In particular, it would help both competition authorities and policymakers to ensure a balance is struck between efficiency over the short-term and resilience over the longer-term that better reflects consumer interests.

For example, in a mergers context:

- in markets characterised by high barriers to entry and expansion, competition authorities should be cautious in allowing significant concentration as it might give rise to the problems discussed in this paper and potential ex post fixes might be costly and difficult to deliver;
- closer scrutiny of a transaction (or a series of transactions) in a concentrated industry with material barriers to entry and expansion may be warranted if (i) it results in higher leverage (thereby raising the likelihood of exit in the event of a shock) and (ii) it is in a market supplying essential goods or services (raising the harm caused by the exit). This would especially be the case if regulation to prevent or mitigate the effects of disorderly exit is absent or ineffective;
- authorities may wish to discount, to an appropriate extent, the competitive pressure arising from overseas suppliers in a market if they are concentrated in a particular geographic location (and therefore vulnerable to the same localised shocks).

There may also be a case in some jurisdictions for legislative reform of the merger review process to prevent control of key suppliers in certain sectors passing to parties who may act in a way that weakens resilience. In the UK, the Government has reformed and broadened its role in respect of screening investments (including mergers) that could affect national security. It has recently made clear that it could in principle use these powers to prevent transactions that could affect resilience in the downstream supply of fuel.⁶⁶

In a cartels context, competition authorities need to be vigilant of link between concentration, resilience and cartel behaviour. This is why the CMA has joined

⁶⁶ Pre-legislative scrutiny: draft Downstream Oil Resilience Bill. Government Response to the BEIS Committee's Fifth Report, 7 March 2022.

forces with four other major competition authorities to share intelligence on anti-competitive behaviour and collusion in global supply chains. When markets are concentrated, cartels are more easily sustained: so it is important to ensure disruption in essential markets doesn't become a cover for collusive behaviour, sustaining prices even after the shock subsidies. This is especially the case in markets that might have benefited from temporary exemptions from competition law to assist supply continuity. It is important to ensure that such exemptions go no further, and last no longer, than is necessary, and to keep a watchful eye when exemptions are removed that lawful co-operation does not turn into illegal collusion.

More generally, there is merit in further analysis of markets supplying essential goods and services to better detect and understand dependencies (both business-to-business and business-to-consumer), and how these might affect the competitive process. This would assist not only the work of competition authorities, but also help to ensure any government interventions in support of resilience are targeted and effective. Such work could include examination of:

- trends in concentration, leverage, and other indicators of resilience in markets supplying essential goods and services;
- the effectiveness of regulatory arrangements in mitigating consumer harm and/or supply disruption when providers fail;
- the feasibility of developing indicators to assess the systemic importance or risk of individual businesses (that is, the extent to which their failure may cause wider disruption);⁶⁷
- the consumer detriment arising from disruption or discontinuity in supply;
- prices and profits in the aftermath of positive demand and/or negative supply shocks, and the extent to which these are sustained;
- barriers to exit, and the extent to which firms in essential or strategic markets benefit from regulatory or capital markets advantages because they are perceived as too important to fail;
- supply chain dependencies, and the reasons why downstream firms do not or cannot diversify or nearshore.⁶⁸

⁶⁷ Various indicators of systemic importance have been developed in the financial sector: see, for instance, Hawley and Migueis (2021), [Measuring the systemic importance of large US banks](#), FEDS Notes. Washington: Board of Governors of the Federal Reserve System

⁶⁸ The FTC launched an inquiry into supply chain disruptions in November 2021, aimed at “shed[ding] light on market conditions and business practices that may have worsened these disruptions or led to asymmetric effects”. (Press release 29 November 2021)

Wider considerations

Competition policy is not the only, or even necessarily the principal, tool to mitigate the risks and impact of fragile markets. In many markets that have seen disruption at times of crisis, there has been either an absence of regulation to promote resilience, or a failure of regulators to monitor and address emerging fragilities. Governments considering how regulation can better promote resilience – particularly in markets for essential goods and services – may wish to consider the features set out above. And competition authorities with functions to review markets and make recommendations to improve competition and consumer outcomes may wish to take them into account in their analysis.⁶⁹

In respect of financial resilience, a range of potential regulatory approaches exist, from the prudential requirements and resolution regimes seen in banking, to lighter-touch oversight frameworks to provide monitoring and early warning of provider failure in markets such as the one in care homes in England. The objective in all cases, however, should be not to prevent failure, but to enable it to happen in an orderly way, thereby enabling the market, and ultimately consumers, to decide which firms succeed and fail.

For markets dependent on global supply chains,⁷⁰ the policy challenge to build greater resilience is arguably greater still, since regulatory intervention cannot (at least on its own) address dependencies on overseas suppliers or countries for critical inputs. Governments will need to focus efforts on sectors where genuinely critical dependencies exist, keeping in mind that, in many cases, global supply chains can be a source of both resilience and efficiency for firms, and of greater choice and lower prices for consumers.⁷¹ It is important that the pursuit of resilience does not roll back these gains from globalisation, or for that matter simply replace dependence on an overseas supplier with dependence on a “national champion”. Measures that support firms to diversify their supply chains, combined with appropriate remedies to address the distortive effects of subsidies to overseas firms, are likely to be preferable – from both a resilience and consumer welfare perspective – to interventions that selectively protect domestic firms from normal competitive forces.

⁶⁹ In the course of its inquiries into markets, the CMA has examined resilience issues, and the impact on customers of provider failure, in a number of sectors, including audit, care homes for the elderly, and children’s homes.

⁷⁰ Domestic supply chain resilience can in some cases be strengthened through regulation. For example, in the UK, the Draft Downstream Oil Resilience Bill proposes to give government various powers over UK fuel suppliers – including to provide information and to comply with Ministerial directions – to support resilience and supply continuity with require information and to direct businesses.

⁷¹ See, for instance, D’Aguanno et al (2021), Global value chains, volatility and safe openness: is trade a double-edged sword? Bank of England, Financial Stability Paper No.46

Just as many countries are emerging from the pandemic, the war in Ukraine presages a period of further disruption across a number of markets. Competition authorities, regulators, and governments all have a role in ensuring that markets for essential goods and services can meet the needs of consumers and society in the bad times as well as the good. The CMA will continue to build its understanding in this area, and work to promote greater resilience where it is needed.