

# Brexit risk for UK manufacturing

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## Introduction

On January 1, 2021, the UK found itself outside of the EU's Single Market and Customs Union. Coming more than four years after a (52%) majority voted to leave the EU, denoted as Brexit, it is fair to say that the process has been more complex than many had initially envisaged. Moreover, 2020 saw the emergence and spread of COVID-19, the worst pandemic the world has seen in a century, with over 4.16 million deaths to date (July 29, 2021) worldwide and over 129,000 deaths in the UK.<sup>1</sup> Governments around the world have had to impose dramatic measures to arrest or contain the spread of a novel coronavirus. Both of these events have entailed substantial risks to the operations of business, not least in terms of financial risk, operational risk, and people risk. It could also be argued that the responses of governments to COVID-19 (and the UK Government's pursuit of a "hard" Brexit) entails a substantial degree of political and regulatory risk to business.

However, in this chapter we focus on the impacts of Brexit on business, and the communication and experience of risk thereof, utilising elements of Kaspersen et al.'s (1988) Social Amplification of Risk (SARF) framework. In contrast to COVID-19, which represents a vast exogenous shock to all economies, albeit with local and regional impacts (Bailey et al. 2020), Brexit in the UK was the outcome of a deliberate policy choice after a referendum. In so far as it took four years to "deliver" – from the initial referendum outcome in June 2016, to exiting the EU Single Market and Customs Union on January 1, 2021 – Brexit should be seen as a process rather than an event. Indeed, in so far as the risk ramifications to business are still unfolding as the new trading relationship embeds itself, it could be strongly argued that Brexit (contra the claims of the current UK Prime Minister and leading "Leave" advocate, Boris Johnson) is not "done" but will rather play out over the long term in terms of economic and business impacts.

The implications for risk management in affected businesses will undoubtedly be profound, given the emergence of new non-tariff barriers to trade between Great Britain (GB), Northern Ireland (NI), and the EU in the form of customs, new and extended sanitary and phytosanitary measures (SPS) checks, and other

checks on the movement of goods, as well as the end of freedom of movement of people. As the region in the UK with the highest proportion of manufacturing employment in the UK, the Midlands is particularly exposed to these shifts. At present, the question of how the region's manufacturers are coping and how the situation is likely to evolve in the coming months and years remains open. Whilst there is a growing body of academic literature investigating the risks of Brexit in fomenting supply chain uncertainty for UK-based manufacturers and the impact on their corporate strategies and operations (e.g. Bailey and De Propris 2017; Chen et al. 2017; Li et al. 2019; Liu et al. 2020; Moradlou et al. 2021; Pournader et al. 2020; Roscoe et al. 2020; UKICE 2021), the present combination of events is unprecedented and we have only a limited understanding at the micro level of the implications of these shifts as their risk implications unfold outwards on the ground.

The prolonged timeline of withdrawal from the EU has led to risk mitigation strategies and techniques based upon implicit and explicit (risk) communication. Various stakeholders, networks, and official offices, such as the UK Government (see <https://www.gov.uk/transition>), have communicated information about Brexit to institutions, individuals, and society. In the absence of decisive guidance and policy, risks associated with the withdrawal of the UK from the EU remain deeply rooted in uncertainty. It is therefore important to first understand the key sources of communication to organisations and, second, the impact that these have had upon organisations when dealing with post-Brexit changes. It is important to understand the way in which “communication” has shaped the interpretation, and indeed amplification or dampening, of risk(s) to supply chain(s) and subsequently how those risks are to be managed in the UK. In the material that follows, we consider the implications of risk communication, in discussions before and since Brexit, on mitigating and managing risk to international supply chains.

## **Conceptualisation – SARF and Brexit**

Supply chains have become more complex and longer and therefore were inevitably going to be subject to disruption from Brexit, resulting in the challenging tasks of managing risk in supply chains (Alicke and Strigel 2020). Powerful economic forces are changing the global trade landscapes (Pournader et al. 2020). The political upheaval has led to trade disputes, thus intensifying supply-chain risks. The uncertainty surrounding the risks, where the rules of the game are changing, such as from regulatory changes, increased costs with new tariffs being imposed with little notice, and delays to import/export, is resulting in companies needing to improve their supply-chain risk-management capabilities. There is a willing desire from companies operating globally to increase their supply-chain resilience. That is what Fiksel (2006) refers to as their capacity to survive, adapt, and grow in response to turbulent change. The resilience of companies is significantly affected by their customers' and suppliers' ability to anticipate and respond to the disruptions associated with Brexit (Pettit, Croxton, and Fiksel 2019). However,

resilience can also be a source for strategic advantage, whereby strengthening the resilience of their supply chains and the markets they operate in, can impact on the performance of businesses and enable them to better compete with others.

There is increasing recognition of the need for companies to reassess their supply-chain strategies to make them more resilient to any kind of disruption. Global companies need to manage these risks and to prepare their supply chains accordingly. By developing and accessing scenarios with different probabilities for pre-identified risks, companies can make high-level impact calculations. Firms of different sizes need to formulate and implement strategies to respond and manage their supply chain uncertainty created by Brexit. Roscoe et al. (2020) found that when formulating strategy, multinational organisations (MNEs) used worst-case assumptions, whilst large firms, and small and medium-sized enterprises (SMEs), gathered knowledge as part of a “wait-and-see” strategy. This strategy then allowed them to reduce the perceptions of heightened supply-chain uncertainty. It was found that companies then implemented reactive and/or proactive strategies to mitigate their supply-chain risks.

In this context, risk theory (Aven and Renn 2020; Kasperson et al. 1988, 2003; Slovic 2000), which integrates the technical analysis of risk with the wider cultural, social, and institutional responses which shape the experience of risk in response to a risk event, is a useful lens in which to explore the impact of Brexit as a disruptive event. Large-scale crises and global events (e.g., the global financial crisis of 2007–2008; COVID-19) are rarely confined to the technical assessment of risk and an increased recognition exists of the wider conceptualisation of risk factors with direct and indirect negative impact. Slovic and Weber (2002) argue that the more unknown a risk is, the more likely it is to be amplified leading to unbalanced risks analysis (Sacilotto and Loosemore 2018). Regarding Brexit, an unprecedented event, this is significant due to the lack of past information and knowledge surrounding this new phenomenon. This creates complex relationships in the management of risk, particularly so in the political context of Brexit. As an example, the Social Amplification of Risk Framework (SARF) can provide a robust framework to explore the risk event (Brexit) and its characteristics, including the range and type of risk impact upon organisations within the UK. Kasperson et al. (1988) demonstrate in their framework several systematic steps in the dissemination of risk information following a risk event (sources of information, information channels, social and individual stations, and institutional, individual and group behaviour). The key premise is that the sources and ways in which information is communicated will amplify or dampen risk analysis and impact. In exiting from the EU, it is important for organisations to understand and conceptualise associated risks, their probability, impact, subsequent communication, and mitigation.

Risk research tends to focus on technical approaches to risk analysis. As the risk discipline has evolved, attention has been given to the social dimension and the wider appreciation of risk perception as part of the assessment process (Aven and Renn 2020; Renn and Levine 1991; Slovic 2000). As Klinke and Renn

(2014) point out, effective communication has to be at the core of any successful activity to assess and manage risk. Analysis of previous crises and/or events have indicated that the level and source of exposure to information can lead to a higher knowledge and protective behaviours (Allen 2018; Winters et al. 2018). Likewise, it can also encourage misconception and risky behaviours, alongside other factors which influence individual perceptions. This signifies the importance of effective risk communication as a risk mitigation and resilience strategy in protecting institutions, and communities, from the severity of an event. The transference of such information to an organisation is important, as it could lead to a differing perception and understanding of risks presented and so contribute to the analysis of risk – particularly so in the implicit, non-formalised communication of Brexit.

Consideration should be given to the ways in which risks have been communicated, perceived and subsequently amplified, or indeed lessened, during Brexit. Various amplification systems (sources of information), include both formal and informal outlets such as government, media, social organisations, think-tanks, trade bodies, and opinion leaders (Kasperson et al. 1988, 2003) with the ability to change the way in which risks are perceived and so managed. Critical is the sourcing and distribution of information surrounding the risk event which ultimately determines both group and individual perceptions about the severity or magnitude of the risk (Jardine et al. 2015; Kasperson et al. 1988, 2003; Siegrist and Zingg 2014). The communication of Brexit information, and therefore of risk and uncertainty, to business leaders, can lead to varying responses in the balancing of risk analysis and estimation of risk impact across different types of industry.

The ways in which organisations respond to potential amplifications of risk can lead to a “ripple effect” with severe consequences of impact upon business operations and wider communities (Kasperson et al. 1988). This ripple effect can extend to other groups (professional bodies, trade unions) and can lead to (business) impact in the form of litigation, financial loss, loss of business, organisational changes, loss of confidence to in institution. In risk analysis, the tertiary and secondary impact on supply chains can include direct and indirect institutional impacts; for example, political and/or social pressures; changes in risk monitoring and regulation cost; increased liability and insurance costs; and the impact upon the local economy.

Following the identification, analysis, and subsequent impact of risk, it is important to consider the organisational response in managing and mitigating risks appropriately. Consideration must be given to the under- and over-estimation of risk impact, noting the long-term and short-term risk impact on supply chains, for example. In managing risk, reference has been made to building organisational resilience as part of the risk-management process (Rod et al. 2020; Van Der Vegt et al. 2015) rather than during the recovery process of a crisis (Kovoor-Misra 2019) – in this case, Brexit negotiations and ensuing policy. In the analysis of risks and the subsequent impact of Brexit on business, it is important to ensure an efficient and effective strategy for organisations by constructing

organisational resilience as part of their policy and risk analysis. This can be done by focusing on building organisational resilience (BSI 2021; Van Der Vegt et al. 2015).

Hence, the “end type” of Brexit will impact upon risk distribution locally and globally, which presents mixed challenges for institutions as economic policy and governance change. The risk implications and impact upon institutions and their capacity to absorb the prevailing risks is questionable – particularly so given the economic situation post COVID-19 globally. SARF provides a slightly amended conceptual framework to critically explore Brexit, focusing on institutional – rather than individual – attenuation and amplification of associated risks as part of this chapter. A key question, then, is how prepared were (and are) UK organisations in terms of managing the Brexit deal at localised and at globalised levels? How was risk information being communicated, processed, and so managed?

## **Methodology**

Given the focus of the study on how advanced manufacturing businesses perceived the risks arising from Brexit, a case study research strategy was adopted. The underpinning research philosophy was that of a pragmatist approach, enabling the revealing of insights around firms’ responses to Brexit, drawing on both qualitative and quantitative data.

Accordingly, 12 semi-structured interviews of approximately 30–60 minutes’ duration were undertaken with senior managers in the automotive, aerospace, medical technologies sectors and attendant suppliers and industrial service providers. These individuals consisted of a mix of functional areas (procurement, operations, finance etc.) but the key criterion for interview selection was that these people in some sense “owned” the issue of Brexit in their organisation. In conducting the interviews, we specifically sought a mix of respondents across different tiers of the supply chain, ranging from key Vehicle Manufacturers (VMs) through to smaller Tier 2 and Tier 3 firms. Key summary statistics pertaining to respondents (sector, supply tier, size of the business etc.) are detailed in Table 2.1.

Questions centred on the preparations for Brexit, where information on Brexit was sourced from, what they perceived the “worst-case scenario” from Brexit would be in the lead-up to the signing of the Trade and Cooperation Agreement (TCA), supply-chain responses to the pandemic and how they therefore sought to mitigate any risks arising from it. Interview participants were provided with prior information about the purpose of the research so as to ensure fully informed consent, and the interviews were conducted in accordance with the strict ethical tenets of voluntary participation, anonymity, confidentiality, and non-disclosure where requested. Ethical approval was obtained in accordance with institutional procedures and approved. The interviews were recorded online via secure digital recording platforms (MS Teams) and transcribed using the services of a research assistant. Data was kept on secure servers and all personal identifiers were destroyed upon the conclusion of the research.

Table 2.1 Respondent profiles – key information

<i>Date of interview</i>	<i>Pseudonym</i>	<i>Sector</i>	<i>Location</i>	<i>Size of enterprise (approx. # employees)</i>
Feb 9	Participant 1	Automotive	Midlands*	2000+
Feb 9	Participant 2	Metal fabricator	Black Country	500
Feb 10	Participant 3	Industrial Service Provider	Birmingham	5
Feb 10	Participant 4	Metal fabricator	Black Country	150
Feb 11	Participant 5	Metal fabricator	Black Country	100
Feb 11	Participant 6	Metal fabricator	Black Country	100
Feb 17	Participant 7	Machine tools	Black Country	100
Mar 15	Participant 8	Jewellery	Birmingham	50
Mar 16	Participant 9	Metal fabricator	Black Country	100
Mar 16	Participant 10	Med Tech	Birmingham	600
Mar 16	Participant 11	Industrial Automation	Birmingham	100
Mar 26	Participant 12	Metal fabricator	Midlands*	1000+

\* Owing to the size of these companies and the relatively low number of large OEMs in a given area (county/local authority etc.), the geographic locale of these participants has been kept less distinct in order to avoid identification.

In the sections that follow, we detail the findings of the research in accordance with the themes denoted above. Given the relatively small size of the interview sample, the findings should be considered as indicative rather than being necessarily representative, so some caution is necessary in terms of generalising the findings.

## Findings

### ***Expectations in the lead-up to a Trade Agreement***

In the lead-up to the attainment of the UK–EU Trade and Cooperation Agreement (TCA), all of our respondents said that they had undertaken scenario planning and considered the risks associated with a “No Deal” outcome with the imposition of a tariff regime to be the worst-case outcome. However, preparations for exiting the Single Market and Customs Union had been hampered by what they regard as a lack of transparency and clear information from the Government and Civil Service. Even those respondents from businesses that undertook substantial trade outside of the EU, and hence were already familiar with customs checks and the Incoterms that govern international trade thought that Brexit would impose additional disruption to them:

The bit I was most worried about was around the uncertainty which drives lack of confidence in terms of buying, forecasting and it was that which was quite damaging for our business over multiple attempts of leaving the EU,

and second that we were quite confident that if there was a deal it would be short-term to medium-term adjustments, not necessarily by us, but more our supply chain and customers that probably will give us the most pain. And all those things came true.

(Participant 4)

Of course, a key issue in the preceding period had been political deadlock over the form that Brexit should take in the UK, with the previous Prime Minister, Theresa May, seeking a withdrawal agreement that would keep the entire UK within the EU Customs Union as a fall-back, should the status of Northern Ireland not be resolved. This so-called “Northern Ireland Backstop” solution led to the revolt of the right-wing strongly pro-Brexit faction of her party and hence her replacement with Boris Johnson in 2019, who subsequently won a strong parliamentary majority.

### ***The communication and experience of risk***

The “Brexiters” of course, had always argued that UK businesses had four years to prepare for Brexit and in a sense the basic objective of a minimal free trade agreement that only eliminated tariffs on UK–EU trade was always evident. However, this reality was obscured in the cut and thrust of negotiations and the UK Government’s obstinate stance on touting “no deal is better than a bad deal”<sup>2</sup> meant that, for many businesses, it remained unclear (even in December 2020) what the impact of Brexit would be. Poor and ambiguous (or even misleading) communication from the UK Prime Minister, his Cabinet and elements of the Civil Service, obstructed business preparations in this context:

The UK government said we had to get ready and prepare, but we did not know what we are preparing for – so we prepared for no deal. And had been doing so for 24 months.

(Participant 2)

For smaller operators, who were typically second- or third-tier suppliers to larger firms, a simple lack of knowledge of the final market for the product acted as a barrier to even quantify, let alone conceptualise, the risks associated with the impact of Brexit on supply chains:

Because we are a second-tier supplier, we very rarely know what the job entails that we’re producing. But if you can identify them – some parts to go into automotive sector for example – we can identify those that go to automotive, so we can ‘nail’ that, that particular part down. But many of the others, you just can’t imagine what they thought and neither does the company that you’re supplying want to tell you either.

(Participant 5)

Nor was the nature of advice from business peak organisations such as Chambers of Commerce seen as particularly helpful either:

No, not anymore. We used to be members of the [xxxx] Chamber, but we stopped doing that. It was just a sort of same old, same old [generic Brexit preparedness advice] stuff all the time, really, and I just found that it wasn't really giving us any great benefit really.

(Participant 6)

Little reference was made to utilising official information sources such as Government(s), political leaders, and other professional, industry bodies. In fact, such sources were viewed as unsupportive:

Well obviously we weren't party to it, and we only see what the media allows us to see but as an industry, painfully we have membership of some of our trade bodies.

(Participant 5)

A necessary source of risk communication was via news and media channels in seeking information about Brexit policies including legislation and regulation, and associated risks.

Certainly, my concern is all the good sort of workers' rights laws that have come in, I read a lot of stories to say that policy at the moment is suggesting that they're probably going to change those or relax them or, you know, more to the benefit of business was quite a step back I would say, even as a businessperson running a business.

(Participant 4)

Uncertainty surrounding Brexit is partly due to extensive timescales, political complexity, and failing to communicate information, and so risk, effectively. For real-time, effective risk analysis and management to occur it should be based in accurate data and information. In its absence, managing current and future risk challenging:

In terms of the levelling up agenda, government needs to make the policy clear and benefits of Brexit clear. Where is the Brexit dividend for small companies?

(Participant 2)

The speed at which information was communicated to suppliers after the Brexit negotiations created a significant impact on day-to-day operations:

So, the main problems [as a consequence of Brexit] to date have been, I suppose the first one was the late details of the deal that was done. And actually,



in layman's terms, what that meant we had to do, i.e. what declarations needed to be made, where they needed to be made, what changes we needed to make to particular customers, invoices, all of that sort of stuff. We couldn't finalise that until the deal went through, really ... So that's been a bit of a headache that the lateness, you know, shuffling through all the detail and actually making it work in an efficient way.

(Participant 4)

Evidently, the lack of critical information communicated to businesses on changes to employment policies, namely the status of EU workers, created further obstructions which led to unnecessary anxiety amongst EU nationals:

Initially, when the referendum went through, we certainly saw a lot of expat EU people get really quite destabilised by it. I don't know. Again, they felt affected or not wanted, I don't know that they didn't take to it very well. So, we had a period of about six months of just trying to settle people down [but] ... there was very little, you know, that we knew what they knew about their status and what they would be.

(Participant 4)

Extending beyond just the technical assessment of risk, the ongoing debate regarding the settlement policy for EU nationals, and the subsequent impact, is indicative of the wider risks associated with Brexit.

### ***Mitigating risk and increasing resilience***

A number of principal risks were identified as significant as a consequence of Brexit and can be categorised as operational risk; financial risk; and regulatory and compliance risk. Since the Brexit negotiations, suppliers have been faced with the task of identifying, analysing, and managing risks resulting from the final outcomes.

Operational risks identified included changes to systems and processes, for example to a paper-based system for keeping records:

This is the big issue for us; overnight we have gone from frictionless trade to full export documentation. This is a fundamental change in the system.

(Participant 1)

People-risk related to human error and the inevitability of "getting things wrong":

And bear in mind there is going to be mistakes made because anything that is new, there is going to be human error on all sides, even if we are the most prepared and the most conversant in what we are in terms of transacting between us and the EU. There is going to be other people, suppliers, or customers up

and down the supply chain making errors, adding compound things to the issue of capacity at the borders. So, those were the things that we thought would most likely happen and they did.

(Participant 4)

Risk impact includes financial risks in the form of loss of business created by a delay due to border controls, changes to business, and a lack of competitive advantage in other markets such as China.

Risk-mitigation strategies were forward-thinking to soften the blow of the impact of Brexit to business operations and supply chain(s), increasing resilience. In the absence of timely information and in the presence of uncertainty, such strategies, and their success, were down to the preparedness of businesses:

Brexit has not been as much of a disaster as it could have been but that is partly because of our own preparation and flexibility, and hard work by our logistics planning people.

(Participant 1)

And further:

The challenge was that we didn't know exactly what the impacts were, so we actually prepared for what we deemed as the worst-case scenario which was a no-deal Brexit or an exit on WTO terms.

(Participant 4)

Building resilience through diversification key could be viewed as a critical strategy to ensure longevity:

Years ago, 25 per cent of our cost of sales was metal. It's gone down now, because of what I've done, what we've done in the business is to diversify away just when making castings into casting and machining. So, what we do is add value sales such as dye penetrant testing and all these things to try and get an element of servitisation or other revenue flows into the business. So, metal's now gone down to between 10 and 15 per cent, rather than just 25 per cent.

(Participant 9)

## **Discussion**

Our findings suggest that manufacturing businesses noted feeling underprepared due to the uncertainty around new policy implementation in trade and border controls, new systems for recording, a lack of clarity around employment for EU nationals, and compliance with settlement policies.

Clearly, as we continue on the "Beyond Brexit" journey, the lack of communication of key information to the manufacturing industry has led to ongoing

uncertainty around the risks facing its supply chain(s). Lessons should be learnt as the government and manufacturing industry navigate Brexit. There has been a considerable failure on the part of the UK Government to consider the implications of not communicating the risks of leaving the EU effectively to the manufacturing industry. Information about changes to policy, legislation, regulation, and workers' rights, to name but a few, was obtained via media outlets rather than from official Government and/or professional industry bodies.

Such risks, arising directly from leaving the EU, have impacted business operations which have led to substantial delays in delivery, financial losses, and fundamental change to businesses – the ripple effect of a risk event. Beck's (1992) *Risk Society* argues that, as a society, we create risk through the advancement of innovation and technology – for example globalisation. Pre modernity risks were associated with the environment and health and safety, related to the labour process. In a postmodern world, Brexit creates risks which must be managed – for example, risks involving people, risks that are political, economic, and global – raising the question of governance. Where impact has been less, this can be attributed to organisational foresight and progressive thinking, utilising internal experience. For example, those manufacturing organisations operating in both the EU and international markets were already aware of the potential risks to the supply chain in an international jurisdiction. Thus, for them, the most successful risk-mitigation strategy to be utilised, in managing supply-chain risk, was scenario planning based on existing and historical information. Although unprecedented, leaving the EU can be described as an event rather than a crisis or “black swan” such as COVID-19. Brexit negotiations have been ongoing for a number of years, which has led directly to increased uncertainty surrounding the impact of Brexit and the final outcome.

## Conclusions

Moving forward during post-Brexit negotiations to reduce the negative impact on the manufacturing industry, the UK Government must ensure timely information is disseminated to businesses across the UK. This will enable risk analysis of supply chains to occur. This is still very relevant given that the UK has yet to begin customs checks on imported products from the EU. The manufacturing industry could benefit from the establishment of more formalised, implicit networks to share experiences, skills, knowledge, and information. In the absence of robust, formalised information from official sources, reliance on media channels, at best, provides a starting point for risk assessment to occur but this can skew risk perception and analysis. This is due to the often “sensationalised” information presented by the media and opinion leaders.

In a wider sense, to revisit the earlier postulate of Brexit being a process rather than an event, the current situation between the UK and the EU best represents an “unstable equilibrium” (De Ruyter and Hearne 2021, forthcoming). Thus, the nature of the relationship will continue to evolve in ways that cannot necessarily

be easily predicted, and hence the nature of the risks arising from Brexit may themselves change in unforeseen ways, requiring companies to periodically re-evaluate their operating environments. At the macro level we can expect investment and production in the UK to remain subdued relative to what would have occurred with continued EU membership (or even just membership of the Single Market and a Customs Union) as firms shift operations (and jobs) to EU member states over time. However, the ways these developments play out at the micro level will vary for individual firms and could entail a variety of risk scenarios and mitigating responses. Further research could usefully explore these issues, both from a comparative perspective between countries (e.g. UK–Germany) and regions; and in the form of longitudinal studies tracking individual firms over time.

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## Notes

1 <https://covid19.who.int/>

2 <https://www.independent.co.uk/voices/brexit-theresa-may-tories-no-deal-better-bad-deal-brussels-destroy-british-economy-a7760026.html>

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