MIDLANDS ENGINE

MIDLANDS INTERNATIONAL TRADE: STATE AND CHALLENGES

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60 Second summary

This is a comprehensive report on the state of the Midlands' international trade during the recent years of 2019-2022.

Having experienced significant challenges, the Midlands have been disproportionally impacted by international trade contraction and slow recovery. We pull comprehensive evidence together to show the unprecedented export challenges that Midlands firms have experienced since the beginning of the COVID pandemic, driven by the technological evolution accelerated by the COVID pandemic and fast evolving global markets, exacerbating geopolitical tensions and global supply chains reconfiguration, in addition to leaving the EU single market.

Reflecting on these experiences, we offer nine policy recommendations specifically designed to tackle the issues identified in this report and to improve the region's international trade performance and economic prosperity.

Executive summary

This study was commissioned against the backdrop of recent challenges to UK trade in a world of multiple and overlapping crises. Against the backdrop of the technological evolution accelerated by the COVID pandemic and fast evolving global markets, together with exacerbating geopolitical tensions and global supply chains reconfiguration, on top of leaving the EU single market, the UK has experienced a significant trade decline which has had uneven regional consequences. The Midlands was one of the UK's strongest regions for trade in goods in 2019, exporting £56 billion worth of goods to account for around 16% of the UK's overall goods exports. However, of the value of trade fell by £10 billion in 2020, from which there was only minimal recovery in 2021.

Our research offers a wealth of detailed statistics and analysis to describe the international trade performance of the Midlands Engine region during the period of 2019 Q3 to 2022 Q2. By combining evidence from aggregate statistics at national, regional, and sub-regional levels with empirical evidence from the Office of National Statistics Business Impact of COVID-19 surveys (ONS BICs) and qualitative interview evidence from regional businesses, we provide a comprehensive picture of the state and realities of the Midlands' international trade between the periods 2019 Q3 and 2022 Q2.Our findings confirm the unprecedented export challenges that Midlands firms have experienced since the beginning of the COVID pandemic. We analyse the causes and factors that explain some of the issues and identify evidence for measures that might mitigate risks. We provide ten policy recommendations for improving the region's international trade performance and economic prosperity.

Overall, the Midlands suffered heavy losses in exports during the COVID-19 crisis period of 2020-2022. While most regions were afflicted by the COVID pandemic and by the UK's EU Exit during 2020 and 2021, the Midlands have been disproportionally impacted by an international landscape of large trade contraction and slow recovery. By mid-2022, the region's export performance was weaker than it had been in 2019 – exporting less in value compared with the pre-COVID and pre-Brexit period, and contributing less to the UK's total exports than previously. The Midland's trade contraction was more serious in non-EU markets than in the EU, and was most pronounced in the Machinery and Transport equipment sector.

There have been varied rates of recovery in the East Midlands and West Midlands. While the East Midlands showed signs of bouncing back in 2022, the recovery of the West Midlands has been much weaker.
The disruption to services exports was severe in the Midlands, with the region as a whole seeing the value of exports decline by nearly a quarter, making it the worst hit region in the UK. Despite this, Birmingham, the region's main services hub in the ITL3 regions, showed resilience in non-EU markets, while Nottingham City, South Nottinghamshire, and Walsall have shown growth during the pandemic period.

Drawing on the ONS Business Insights and Conditions surveys, complemented by qualitative evidence, this study identifies the key factors that caused disruptions for exporters in the region. The challenges firms experienced were driven by a confluence of factors including, but not limited to, the UK's EU exit.

Strongly and robustly, we find that a reduced demand for products and services in the Midlands Engine region appears to be the most important reason behind firms' export disruptions and decline.

Even though it is rather early to draw conclusions about the long-term trend, reduced demand is usually a signal of the declining competitiveness of products that are less in demand as they are crowded out by competition. During the study period, rising costs, persistent uncertainty, and geopolitical threats have weighed heavily on businesses, eroding business confidence and directly suppressing investment and trading ability.

The large export reduction in Machinery and Transport equipment manufacturing sectors reflects the importance of the advanced manufacturing and engineering sectors to the region, and the significant challenges experienced by the sector's exporters following the dual shocks of COVID and Brexit. A full recovery remains elusive and suggests the need to investigate further the reasons behind weak demand and trade decline of this sector.

Increased trade barriers and frictions following the end of the Brexit transition and the implementation of the EU-UK Trade and Cooperation Agreement (TCA) have caused disruptions. The most notable of these are the increased customs duties and levies, and disruption at borders. Consequent increases in transportation costs have impacted upon manufacturing firms, while traders in the services sectors are more significantly affected by additional paperwork required for trading. These findings are consistent with the evidence obtained from aggregate data of UK trade since 2021 (Du and Shepotylo, 2022), and indicate areas in which trade terms must be improved if UK firms are to continue to profitably export. Clearly, the trading environment and its conditions are essential to driving exports; the UK's worsened trading conditions underscore the steep challenges firms face.

Turning to what works, we find that the firm's internationalisation strategy and tactics matter. Exporting to both EU and non-EU markets reduces risks, especially for services exporters. We find that exporting only to non-EU markets is the riskiest option as these firms are, holding other factors constant, more likely to experience a higher degree of export disruption and to stop exporting. Basing staff in EU member states helps Midlands firms reduce the likelihood of ceasing to export. This is consistent with the various anecdotal experience that UK firms are relocating (some functions) to EU countries as a response to the export challenges.

We also confirm that firm heterogeneity and perception play a role in moderating the risks of export disruption. The firm's internal capacity and resources matter, as larger firms are less likely to stop exporting. Productive firms are better able to mitigate serious export disruptions. This shows that the bedrock of exporting capability is productivity, and that it is this capability that helps firms overcome export challenges and disruptions.

Our qualitative evidence shows that in addition to the above factors, business preparedness for change makes a discernible difference to export performance. It points to the importance of business owners and managers having the mind-set and ability to adapt to change as part of their dynamic capability. This highlights the need for education and training for management capability. Evidence also shows that government and other organisations that provide economic intelligence play the lead role in reducing information frictions.

In summary, this study lays out the stylised facts about the status of the Midlands' exports and identifies the challenges firms have experienced in recent years. It confirms that at this critical time, the region's approach to re-assessing its internationalisation strategy must resist from inertia. The region needs to rethink globalisation, reassess the competitiveness of UK plc., and seek out alternative markets and leverage for growth. Our evidence highlights the compelling need to continue efforts to remove the non-tariff trade barriers that are hampering firms' capability to trade not only with the EU

but also with the rest of the world (Du and Shepotylo, 2023). While it will take time to effect improvements in the EU-UK trade relationship, that time will allow policymakers to work on developing firm capabilities and competitiveness domestically, which will help firms to export when conditions are right. This builds up business confidence and the firm's preparedness for change. Policymaking needs to be agile in the age of fractured globalisation. All the lessons we have learned highlight the value of timely evidence gathering and an in-depth analysis of trends and shifts. Only through efficient and informed knowledge creation can we swiftly extract lessons from a range of sources and experiences, which can then feed into business and policy decision-making. For this purpose, Midlands Engine or a similar consortium would be well placed to take the leading role.

Our analysis of the issues discussed in this report generates nine-point policy recommendations:

Market the Midlands

I. Promote the Midlands' international tradable goods and services.
The region produces goods with reputation of quality of craftsmanship and innovation and services of high quality and efficiency. More than ever, efforts are required to develop Midlands export markets and trading relationships by raising the profile of regional and regional firm strengths and emerging clusters with regards to growth markets. There is new need to discover, develop and maintain international trade links using multiple channels including home and local trade organisations, chambers of commerce, and industrial associations, through peer networks and export trade missions.

Trade support

II. Support exporters to mitigate the new trade barriers that have arisen due to the UK's EU exit.
This report has identified the following challenges that are particularly decapacitating: customs duties and levies, disruption at borders, increases in transportation costs, and additional paperwork. Large firms are more likely to have necessary resources to get advice and support from upskilling own staff, or from own networks and private sectors.

Advice and grants could be offered to small businesses to reduce the financial costs and administrative burdens for businesses. The current public support, especially in-person support, is concentrated to high potential exporters.[1] New and creative ways are needed to reach out to small businesses that do not meet the threshold. A joint approach is necessary and will be the most effective to achieve results. The government should consider ways to coordinate a wide range of existing public and private trade support organisations, creating joined up efforts in the region with the Department of Business and Trade, the British Chambers of Commerce, growth hubs, UK Export Finance, and other bodies and industrial/ business associations that offer support to firms.

III. Aid firms with export decision-making.
This is aimed at all firms, and at all stages of Internationalisation. Sharing knowledge and insights about organisational, operational, external and global factors that impact on the export decisions, as well as the benefits of exporting, would helps firms to consider exporting and prepare for the journey to successful exporting. Inform firms' decision-making regarding the feasibility of exporting, products, markets, and speed of internationalisation by providing timely and consistent macro-, sectoral, and market-specific intelligence and advice. The trade support function of the DBT already covers much of this to assisted firms. More efforts are needed to reach out a wider range of businesses.

IV. Encourage export dropouts to return to exporting.
Understand, encourage, and support firms that recently stopped exporting so they can return to exporting their goods and services. Among the firms that do not export, the firms that dropped out export market are likely the businesses that are close to the productivity threshold of exporting and already had experience of exporting. This makes them more likely to export (again) and hence good target for support.
A separate trade support unit could be set up at local level to identify them and offer specific support.

V. Encourage and inspire new entry to exporting.
New entrants make up an important segment of the UK export pipeline, and it is one that needs to grow. Given the coverage of negative news in the media about export challenges, positive stories need to be told to rekindle and inspire internationalisation aspiration and commitment from business decision makers. A joint project between the Centre for Business Prosperity and the British Chambers of Commerce will develop a new platform of business-to-business network for export support.

VI. Influence UK trade policy to improve the trade relationship with the EU.
It is hugely important to curate and feed back to UK international trade policy makers the challenges that businesses have experienced, and the best practices and tested solutions for these, in preparation for the 2025 TCA review.

Wider policy and support

VII. Reassess the global competitiveness of the region and develop foresights of paths for future growth.
With industrial partners, thinktanks and academia, policy makers must develop scenario and response strategies that consider a range of possible evolutionary paths for the current global market dynamics.

Three important steps are involved:

(i) Reassess the existing strengths and capabilities of the industries in the region and their related sectors in the supply chains. This means not only investigating the products and services that have gained competitiveness globally over recent years, but also locating where growth might happen in the future. This can be done by analysing the product and technology trends of comparable sectors and comparative regions globally in key destination markets.

(ii) Horizon-scan and invest in new growth areas with national and global horizons. This needs to be combined with the existing capabilities of the regions – in tangible, intangible and human capital stocks and flows. Analysing region's knowledge space in what (products and services) it produces, where it innovates, who produces (i.e. labour and skills) and how it produces (clusters, local supply networks and effective supports) would generate valuable insights and foresights. Identifying these areas will allow designing appropriate and timely supports to realise the growth potential through the right mix of regional strategies for promoting industrial development and investment, stimulating R&D and innovation, addressing employment skills and talent problems, and trade promotion measures.

(iii) Rethink regional industrial policy in the context of new globalisation trends. Match the areas of future growth with the areas or related areas of the region's existing strengths in terms of knowledge and skills. Develop regional strategies for upgrading and transitioning in the event that older technologies and sectors become obsolete. Devise the response strategies to transitioning including considerations of not just technology, investment, exports, but also jobs and training, and social equity.

VIII. Adhere to pro-productivity policy agenda.
Productivity is fundamental to enhancing export participation and performance and facilitating learning through exporting. Productivity agenda might have taken a backseat in the discussion of the last a few years in face of the polycrsis and may still do when firms, industries and regions face imminent threats. However, it is important to ensure that productivity remains at the top of policy agenda, for its key role in achieving resilience and growth.

IX. Train, educate and inspire entrepreneurs and managers to go international.
The ambition, confidence, and ability to commit to internationalisation is not only crucial to businesses if they are to engage in exporting, these positive attributes can also improve the capacity of a firm to ride a crisis.

[1]See https://www.gov.uk/guidance/access-international-market-export-support.

1. Introduction

The last few years have been tumultuous for trade. UK firms have had to grapple with the effects of the COVID pandemic, the EU exit, a global recession, supply chain bottlenecks, high energy prices and inflation and the Ukraine war.

The EU exit apart, these challenges have not been unique to the UK but, compared to other developed economies, the UK's recovery from these crises has been underwhelming. In 2022, the UK's trade with the EU (its largest trading partner) was less than in 2019, while over the same period, Germany and the Netherlands grew their trade within the EU by nearly a quarter. The US has also considerably grown its trade with the EU.[2]

Not all UK regions have been affected in the same way or to the same degree. The Midlands regions have been among the UK's hardest hit in trade terms throughout the recent crisis periods. The Midlands region exported goods worth £56 billion in the calendar year of 2019, making up around 16% of all exports of goods by the UK according to the latest ONS UK Trade subnational statistics. However, the following year saw the region's export value reduced by more than 10% in 2020 to £45.6 billion. This was five times higher than the UK's average level of export reduction (around 2%).

Similarly, exports in services by the West Midlands also declined by more than a quarter of value in 2020 (worth £11 billion) compared to 2019 (£15 billion), achieving the steepest decline among UK regions. In 2020 the West Midlands slipped one place to seventh in the national rankings of the total value of exported services. Birmingham, as the top services exporter in the West Midlands, had the sharpest decline in exporting to the EU in 2020, even though its exports to the non-EU countries have been remarkably resilient, maintaining 93% of the pre-COVID level.

Emerging regional trade data for exports in goods in 2021 and 2022 suggest that the growth recovery of the Midlands area has been moderate, reflecting the challenges experienced by firms since the end of the Brexit transition. The recent figures provided by the Midlands Engine intelligence briefing show that the Midlands as a whole has seen a decline of £10 billion in exports over 2019-2021, which could be an under-estimate as most other countries have seen rapid growth in a post-COVID export boom.[3]

Weakened export performance causes deep concerns. Export performance reflects the overall competitiveness of firms and industries in the economy. Further, exporters provide revenues, tax income, and jobs, which are important for economic performance and prosperity. Abundant evidence shows that the contribution of exporting to productivity growth can be significant. The potential beneficial effects of exporting are not restricted to exporters, but spill over to their supply chains. In short, declined export activity potentially reduces the opportunities and scope for learning, which are important for productivity growth. This research responds to the practical urgency of gathering research and intelligence, not only to support the recovery of businesses but also to secure the pathway to longer-term growth in the global markets. We gather data from multiple sources and aggregate the statistics to form a picture to help understand the forces behind the export shortfall the Midlands regions experienced in 2019-2021. Building on research on UK trade dynamics carried out by the Centre for Business Prosperity, we explore the facts and factors leading to the destruction and decline of the region's exports. Lessons are drawn for ways forward to build robust recovery.

[2]See further commentary at https://www.aston.ac.uk/latest-news/eu-uk-trade-and-cooperation-agreement-costly-what-does-uk-need-do-aston-angle.
[3]See Midlands Engine Regional Economic Impact Monitor June 2022 report https://www.midlandsengine.org/wp-content/uploads/2022/06/Midlands-Engine-Monitor-Internationalisation-Edition-v2-1.pdf.

2. UK firms export challenges during 2020-2021: the context

2.1 'Shock treatment': the problems faced by UK firms

BREXIT uncertainty

For many businesses in the UK, the years since the Brexit Referendum of June 2016 have been eventful, uncertain, and challenging. For global trading firms, especially those trading with the EU, there has been a prolonged period of uncertainty about how the UK would leave the EU. Businesses not know if they would be able to continue trading with their EU partners in the same way, and if not, on what terms. This has presented an unparalleled test for their judgement about their current and future business prospects, and the business decisions they would have to make.

Evidence shows that Brexit uncertainty has caused a UK trade decline (Crowley et al., 2019; Douch, Du & Vanino, 2019; Graziano, Handley & Limão, 2020). Some firms exited international trading, while many others redirected their international trade from the largest market at their doorstep to markets that were further afield (Douch, Du & Vanino, 2019).

COVID-19 Pandemic

Brexit uncertainty was therefore the context in which UK firms were entering the next wave of economic and trade shock: the global pandemic. The COVID-19 pandemic caused unprecedented disruption to the world economy in most of 2020 and the beginning of 2021. Although many hoped that the challenges would have lessened by the end of 2020, the effects of lockdowns, social distancing and supply chain disruptions continued, and in some cases intensified during 2021 (ERC, 2021). Firms had to respond to domestic work disruptions during this turbulent period; there were interruptions to global value chains, shipping costs soared, skills and workers were in short supply, and logistics problems abounded (e.g., there was a lack of HGV drivers).

All these affected small businesses disproportionally more. A survey by the Federation of Small Businesses suggests that a significant number of firms chose to stop exporting permanently or temporarily.[4] The UK seems to have been more negatively impacted than its peers by COVID. As we show in previous work, UK trade not only suffered a significant decline in 2020, but it also recovered less swiftly than its main competitors (Du and Shepotylo, 2021)

BREXIT-TCA

The UK formally departed from the EU on 31 December 2020, when the transition period ended and the EU-UK Trade and Cooperation Agreement (TCA) came into effect on 1 January 2021. The TCA sets new rules for trade and cooperation between the two parties, marking significant changes in their future relationship. UK businesses now face post-Brexit obstacles of additional paperwork and certification, compliance with new regulatory requirements, and delays induced by new border checks; all these have placed exporting and importing businesses in an unfavourable position in a fast-changing and fiercely competitive marketplace (Du and Shepotylo, 2021).

Although it remains a challenge to separate out completely the effects of COVID and Brexit, what has become clear is that the new trading arrangement between the UK and the EU has damaged the competitiveness of UK firms in the global marketplace. The UK has not only seen a reduction in exports to the EU (Freeman et al 2022), but its exports to the extra-EU markets have also declined when compared with those of its peers in 2021 and 2022 (Du and Shepotylo, 2022).

The negative effect of Brexit does not seem to disappear, with the export decline continuing into 2022 (Du and Shepotylo, 2022). UK firms' operating conditions worsened in 2022 with energy prices hiked by the Ukraine war, a cost-of-living crisis, and high inflation, which increased costs of production and labour hiring, presenting businesses with new difficulties. As the ERC State of Small Business report comments, it was "crisis after crisis".[5]

Our recent research on UK trade dynamics shows that despite the tariff-free terms for trade in goods as set out in the EU-UK TCA, UK exports experienced a large, negative, and statistically significant decline once the TCA came into force at the end of transition. Non-tariff measures (NTMs), policy measures, other than tariffs, that can potentially have an economic effect on international trade in goods, changing traded quantities, prices, or both (UNCTAD, 2010), are responsible for the adverse effect of TCA on UK trade with the EU, and the magnitude of loss is significant (Du and Shepotylo, 2022).[6] We estimate that increased trade frictions of goods that are subject to sanitary and phytosanitary measures (which especially impacted on the Food and Drink, Wood, and Chemicals sectors) and technical barriers to trade (particularly relevant to Metals, Equipment, Machines and Miscellaneous Industrial products) can explain 70% of the documented total reduction in EU exports in the first half of 2021. The international trade literature suggests that increased NTMs could potentially increase firm's fixed costs and variable costs of trade.

2.2 The aggregate picture and existing evidence

The UK's recent overall trade performance for both imports and exports is illustrated in Figure 1. Since 2020, UK trade has experienced a double-dip decline, the first wave during May-July 2020 and the second in January-February 2021.

Globally, although the COVID-19 and global supply chains problems created challenges that were common to many countries, the UK seems to have been among the worst performers (Figure 2). As Du et al (2022) note, globalisation had a strong comeback in 2022. Global trade has reached the value of global trade reached a record level of about US$ 7.7 trillion in Q1 2022, an increase of about US$ 1 trillion relative to Q1 2021. This is despite the calls from national and international politicians and policymakers for re-shoring or back shoring overseas production, or regionalisation of the global supply chains. Global prices rose sharply, increased by renewed demand for goods, the disruption of production by the pandemic, and the geo-political uncertainty caused by the Russian invasion of Ukraine. However, the UK is an outlier, with zero export growth during 2019 Q1–2022 Q1, as shown in Figure 2 below where the UK exports have not grown and the UK imports have also lagged behind other peers.

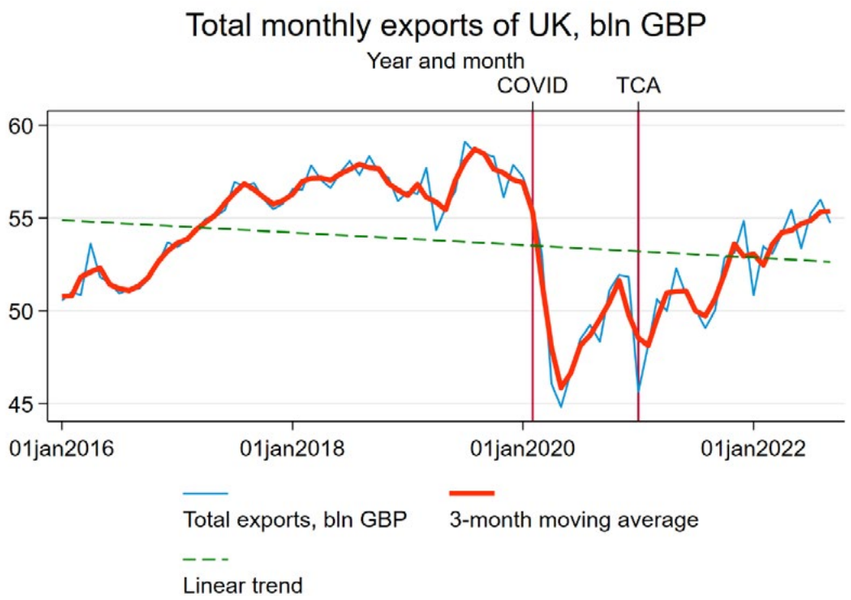
Several studies have shown that the end of Brexit transition and the introduction of the TCA has, through the imposition of new barriers to trading with the EU, had a significant and negative impact on UK trade for both exports and imports during 2021 (Springford, 2021; Freeman et al., 2022; Du and Shepotylo, 2022; Kren and Lawless, 2022), and that the negative impact on exports has persisted into 2022 (Du and Shepotylo, 2023).

[4]See UK small businesses experience reflected by Federation of Small Businesses https://www.fsb.org.uk/resource-report/ready-to-launch.html .

[5]See https://www.enterpriseresearch.ac.uk/publications/the-state-of-small-business-britain-2022-from-crisis-to-crisis/

[6]See our new paper "TCA, Non-tariff Measures and UK Trade" for the Enterprise Research Centre at https://www.enterpriseresearch.ac.uk/wp-content/uploads/2022/06/ERC-ResPap98-TCA-Non-tariff-Measures-and-UK-Trade-Du-Shepotylo.pdf.

Figure 1: Recent UK trade performance



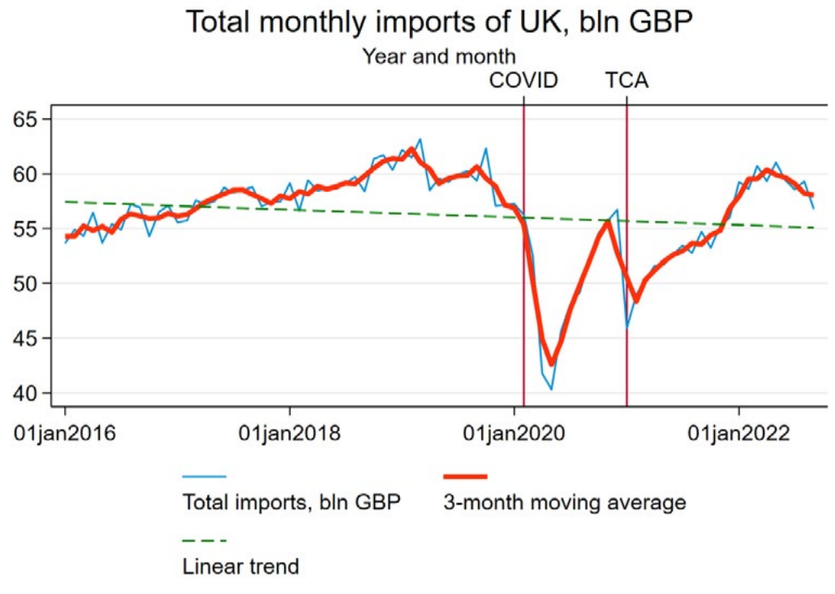
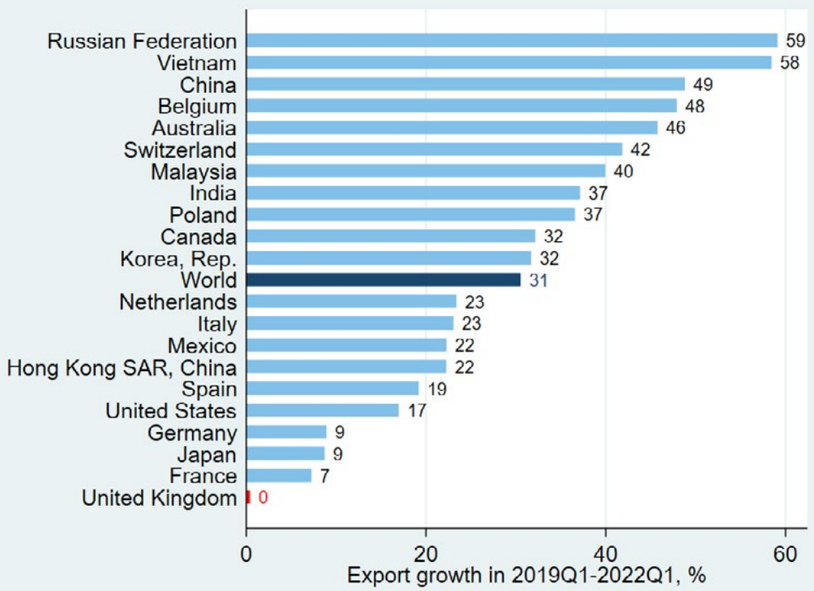
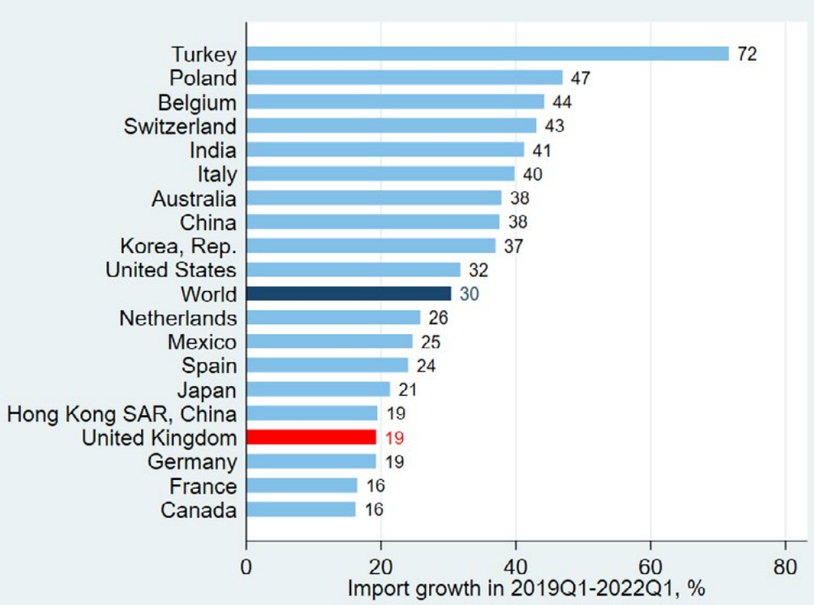


Figure 2: Trade in goods of leading trading countries in 2019-2022





2.3 Firm level evidence and firm experience

COVID and Brexit have clearly been detrimental to exporters. As Benjamin Nabarro, senior associate at Citi Research puts it, "Supply disruption associated with both COVID and Brexit has weighed on UK competitiveness in general, not just on trade flows with the EU".[7] While large-scale micro level data are yet to emerge, smaller scale surveys conducted by various organisations provide useful insights into the likely scale of UK firms' export challenges, and the factors contributing to it. The evidence reveals the significant challenges that UK firms experienced during 2019-2021.

One of the earliest efforts is by the Federation of Small Businesses (FSB), which surveyed 1,483 businesses (of which 207 were importers and/or exporters) in March 2021. According to this survey, around one in four small goods-exporting businesses temporarily halted shipping to the EU when the Brexit transition period ended. One in 25 small firms decided to permanently end exporting to the EU when new trading rules came into force at the start of 2021.[8]

A survey conducted at the beginning of 2022 drawing on data from Coriolis Technologies and the Institute of Export and International Trade (IoE&IT) highlights that it was not just small businesses that were damaged. They found that in March 2022 the number of large international exporters in the UK declined by almost 9% in the period between February 2021 and February 2022, versus a drop of just 3% for medium-sized firms. The Coriolis data report a drop of 9.3% in total revenue by exporting businesses between February 2021 and February 2022, again being worse for large businesses. This suggests that the export challenges are not exclusive to small business.[9]

The British Chambers of Commerce aimed to understand the impact of the UK-EU TCA by carrying out regular quarterly surveys in 2021. In a survey of 981 businesses to investigate the impact of TCA one year on from its implementation, it finds that 45% of firms reported difficulties adapting to TCA-related changes in the rules for buying or selling goods, while only 15% reported finding it easy.[10] The same survey also finds that nearly one in four firms (23%) said they faced difficulties in buying or selling services, while 14% found it easy.

The Longitudinal Small Business Survey commissioned by the UK Department for Business, Energy & Industrial Strategy (BEIS) followed 1,706 businesses through 2018 to 2021. It finds that majority of the SMEs in the panel that reported exports in 2018 persisted with exporting in 2020 (79.2%) and 2021 (88.9% of the 2020 proportion), which suggests that one in five businesses that had been exporting in 2019 stopped exporting in 2020, and a further 10% of the remainder stopped exporting in 2021. Not all export exits were permanent, in that of the 97 businesses that had ceased their exporting activities in 2020, more than one in five (20.6%) reported having resumed exporting by 2021. In the meantime, imports patterns have been changing amongst UK SMEs. Of the 11% of businesses in the panel that reported importing exclusively from EU countries in 2018, approximately half continued to import goods and services only from the EU in 2021, while another 12.9% had diversified and sought goods and/or services from outside the EU (BEIS, 2022).

[7]See Financial Times report "Sluggish exports: the 'worrying trend' in the UK economy" at https://www.ft.com/content/beec0a22-dee2-4224-8881-a549d6324b86.
[8]See https://www.fsb.org.uk/resources-page/one-in-four-small-exporters-halt-eu-sales-three-months-on-from-transition-end-new-study-finds.html.
[9]See GTR report on Coriolis and IoE&IT data https://www.gtreview.com/news/europe/uk-exporter-numbers-decline-amid-post-brexit-reshoring/.
[10]https://www.britishchambers.org.uk/news/2021/12/almost-half-of-firms-facing-difficulties-trading-with-eu-under-post-brexit-trade-agreement

3. Stylised facts of the international trade of the Midlands

This section compiles several data sources to build the exporting profile of the Midlands in 2018-2022. We first present the trends of the region's exports of goods, drawing on the ONS UK Regional Trade statistics to compare them with other regions and with the UK as a whole. We then present the trends in trade in services. A sub-regional landscape will show the main driving forces of the overall trends of the Midlands.

3.1 Exports of goods by the Midlands: trends

As reported in Table 1, pre-pandemic, the Midlands region exported goods worth £56 billion in 2019, around 16.5% of the UK's overall exports of goods in this period, an increase of 0.1% on the previous year. It was then one of the UK's most important exporting regions. However, thereafter the Midlands' export value fell steadily, by more than 10% in 2020 to £45.6 billion, with its contribution to overall UK exports dropping to 15.6% in 2020. There was a further decline of 14.6% in 2021, and 14.2% in the first two quarters of 2022. This reduction was six times higher than the UK's average level of export reduction (with the Midlands' three-year change in total exports around 13% compared to the UK overall around 2%).

Looking at the EU exports and non-EU exports separately, we notice that the Midlands' exports rely relatively evenly on EU and non-EU markets. Since 2020, the export reduction has actually been greater in non-EU markets than in the EU. This would seem to suggest that possibly the effects of COVID, supply chain disruption, and other factors weighed more heavily on businesses than Brexit.

Following its unprecedented trade decline in 2020, the Midlands region experienced a moderate recovery during the 2021-2022 period, recording a 5.7% increase in export value. However, the recovery was neither as strong nor as swift as the average recovery across UK regions (which was 11%). The recovery of the Midlands in both EU- and non-EU exports was lower than the UK average. In the case of EU exports, the Midlands grew by only 7% in the twelve-month period, less than half of the UK average of 15.6%. The recovery of non-EU exports was only two-thirds of the UK average. As a result, the share of Midlands exports in the UK fell by around two percentage points during this period.

Both the East and West Midlands were hit hard during the period. But there are differences in the patterns of the two regions. First, West Midlands suffered heavier loss and more delayed recovery in exports than East Midlands. Compared to the 2019 level, the East Midlands had a mild reduction in exports in 2020, down by 3%, better than the national average of 10.6%. The exports decline in 2021 became steeper, down by 17.6%, higher than the UK average. Then East Midlands' recovery was seen in 2022, for the three-year change in exports around 7.3%. By contract, the West Midlands had steeper exports decline than the UK average from the start. It saw exports reduced by 14.3% in 2020, further

down to 18.4% in 2021, which then remained 17.4% down in 2022. Nationally by 2022, the average export reduction is only 1.9%, suggesting robust recovery.

In particular, West Midlands exports declined severely in both EU markets and non-EU markets. The decline in EU exports was 20.8% in 2021 relative to 2019, compared to 14.2% nationally. However, in the next year period when the UK average exports grew by 1.6%, West Midlands exports further declined by 14.8%. This might suggest that leaving the EU might have played a large role in the region's underperformance, although this is not causal evidence. Further, we observe that West Midlands exports to the non-EU markets during this period was also declining at two-digit percentage level over the three-year period. It worsened in 2022 by nearly 20% compared to 2019 exports level. This is a stark contrast with the UK average 5.4% down and 6.8% down for East Midlands. The East Midlands was adversely impacted by COVID pandemic disruptions. However, the region seems to have staged a recovery, especially in the non-EU export markets, seeing a strong recovery in 2021-2022, which is faster than the UK's average level, albeit from a much-reduced base.

Overall, the two sub-regions in the Midlands suffered heavy losses in exports during the crisis period of 2020-2022. By mid-2022, they end up showing a weaker export performance than in 2019; they exported less in value than in the pre-COVID and pre-Brexit period, and contributed less to the UK total exports than they had previously done. In mid-2022 which is when the latest data are available), exports to the non-EU markets were still shrinking for the Midlands as a whole and for the West Midlands in particular. This is in stark contrast to the overall UK landscape of recovery. Given that the UK as a whole lagged significantly behind its European peers during the post-COVID trade boost (Du and Shepotylo, 2022b), this may be a sign of the region's weakened global competitiveness. Clearly, this needs to be verified and better understood.

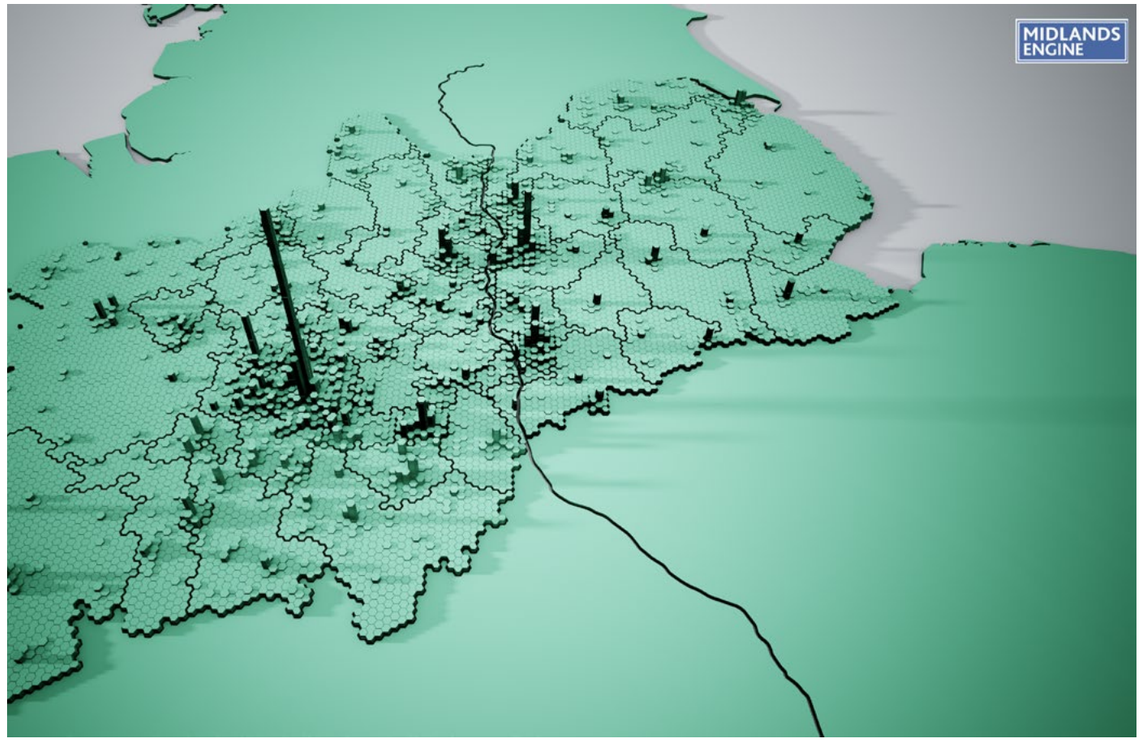


Table 1: Exports of goods of the Midlands, 2019-2022

	Calendar year						Year Q3-Q2				Change %		
	2018	2019	2020	2021	2022Q1&2		Year to Q2 2019	Year to Q2 2020	Year to Q2 2021	Year to Q2 2022	One-year change 2019-20	Two-year change 2019-21	Three-year change 2019-22
Total Exports													
United Kingdom	339,506	340,242	290,620	311,714	175,457		345,090	308,354	301,284	338,411	-10.6%	-12.7%	-1.9%
West Midlands	33,438	31,653	24,610	25,533	13,876		32,086	27,498	26,169	26,490	-14.3%	-18.4%	-17.4%
East Midlands	22,170	24,330	20,726	20,043	11,080		23,539	22,830	19,399	21,832	-3.0%	-17.6%	-7.3%
Midlands	55,608	55,983	45,336	45,576	24,956		55,625	50,328	45,568	48,322	-9.5%	-18.1%	-13.1%
Midlands' Share in UK	16.4%	16.5%	15.6%	14.6%	14.2%		16.1%	16.3%	15.1%	14.3%	-0.2%	-1.0%	-1.8%
EU Exports													
United Kingdom	170,003	168,486	142,623	154,267	92,102		171,434	149,686	147,054	174,177	-12.7%	-14.2%	1.6%
West Midlands	15,015	14,603	11,531	11,750	6,806		15,008	12,370	11,885	12,786	-17.6%	-20.8%	-14.8%
East Midlands	11,391	12,109	9,974	10,210	5,510		11,753	10,669	10,093	10,851	-9.2%	-14.1%	-7.7%
Midlands	26,406	26,712	21,505	21,960	12,316		26,761	23,039	21,978	23,637	-13.9%	-17.9%	-11.7%
Midlands' Share in UK	15.5%	15.9%	15.1%	14.2%	13.4%		15.6%	15.4%	14.9%	13.6%	-0.2%	-0.7%	-2.0%
Non-EU Exports													
United Kingdom	169,503	171,755	147,997	157,446	83,355		173,656	158,668	154,230	164,234	-8.6%	-11.2%	-5.4%
West Midlands	18,424	17,050	13,079	13,783	7,070		17,078	15,128	14,285	13,704	-11.4%	-16.4%	-19.8%
East Midlands	10,779	12,221	10,752	9,833	5,570		11,787	12,161	9,306	10,981	3.2%	-21.0%	-6.8%
Midlands	29,203	29,271	23,831	23,616	12,640		28,865	27,289	23,591	24,685	-5.5%	-18.3%	-14.5%
Midlands' Share in UK	17.2%	17.0%	16.1%	15.0%	15.2%		16.6%	17.2%	15.3%	15.0%	-0.2%	-1.3%	-1.6%

Note: The table is constructed based on the ONS Regional Trade Statistics in goods, all values are in million pounds or % change. The data are available up to 2022Q2 at the time of writing. https://www.ons.gov.uk/businessindustryandtrade/internationaltrade/datasets/subnationaltradeingoods

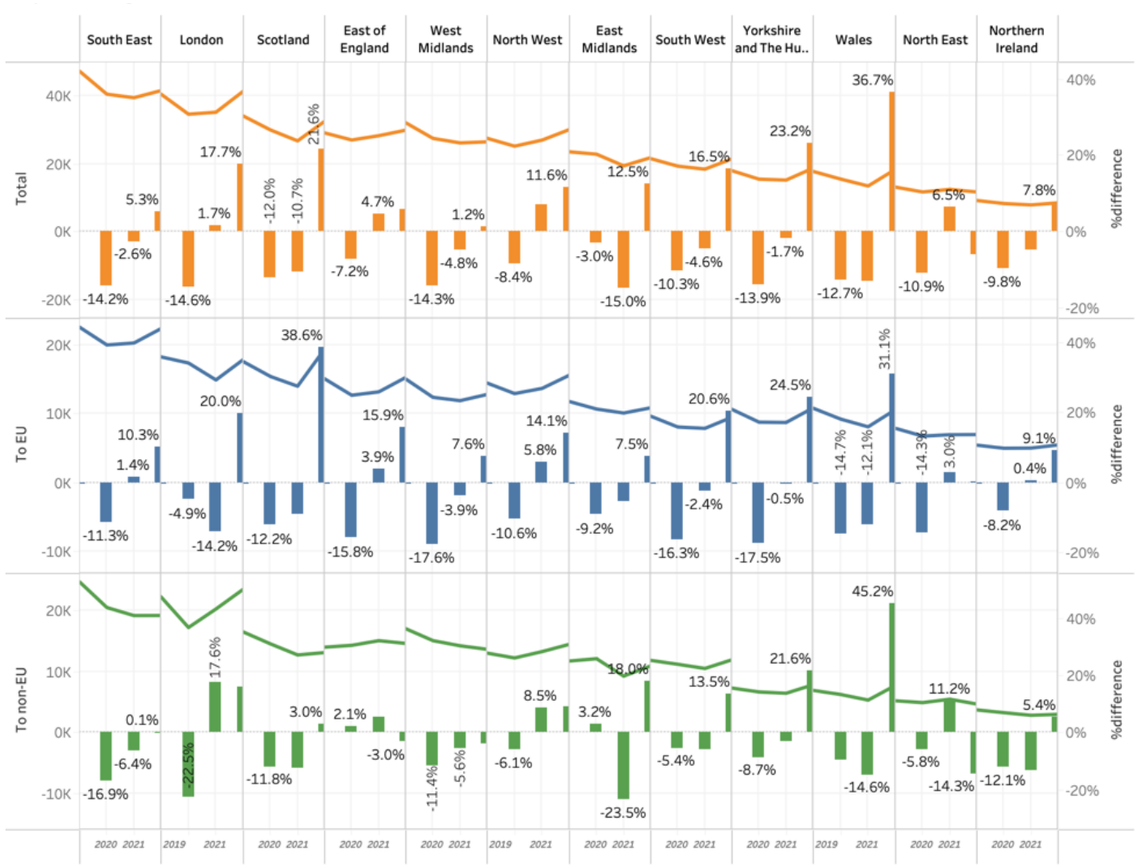
3.2 Comparison with regional peers

A cross-regional comparison shows more clearly that the Midlands region has, in trade terms, been among the UK's hardest-hit during the recent crisis In Figure 3, UK regions are ranked by their total export values from left to right. The dual-axis figure shows the percentage change in year-on-year export value using the right axis. The figure illustrates the short-term trends in regions' total exports, exports to the EU, and exports to non-EU, from top to bottom, depicting the magnitude of the trade disruptions.

Occupying fifth and seventh places nationally in terms of total value of exports, the West Midlands and East Midlands share downward trends in exports, in common with most UK regions. However, the Midlands regions appear to have experienced the steepest decline of all. According to the latest ONS UK Trade subnational statistics (Table 1), the Midlands regions recorded the steepest decline in overall exports value of any UK region, at 13% between 2019 Q3 and 2022 Q2, while the average UK exports in goods fell only by 1.9%. West Midlands also recorded the highest level of fall in overall exports value for any UK region, being around 19% between 2019 to 2021 (calculated by calendar year) or 17% between 2019 Q3 and 2022 Q2 (utilising the most recent data). East Midlands' decline in exports was still large even if it was smaller than that of the West Midlands. Its overall exports reduced by around 18% between 2019 to 2021 by calendar year, and by 7% between 2019 Q3 and 2022 Q2.

Another stark difference is in the pace and magnitude of recovery. The West Midlands stands out as having the lowest exports recovery, achieving around 1.2% in the period up to 2022 Q2, which is lower than any other region, most of which (including the East Midlands) had a double-digit recovery rate (Figure 3). We also notice that the West Midlands' poor performance in the last period can be attributed to non-EU exports, which remain on a downward path, while the region's EU exports achieved a decent recovery (7.6%).

Figure 3: Exports in goods, the Midlands in the UK, 2019 Q3-2022 Q2, £million



Source: The ONS Regional Trade Statistics in goods, all values are in million pounds or % change. The data are available up to 2022Q2 at the time of the writing. https://www.ons.gov.uk/businessindustryandtrade/internationaltrade/datasets/subnationaltradeingoods

Note 1: UK regions definition – The UK is categorised into 12 regions based on the International Territorial level 1 (ITL1). This level includes 9 regions in England, plus Wales, Scotland, and Northern Ireland.
Note 2: Using the left-axis, the regions are ranked by total export value from left to right. The right-axis shows the percentage change in year-on-year export value. Together, the figure illustrates the short-term trends in regions' total exports, exports to the EU, and exports to the non-EU from top to bottom, depicting the magnitude of the trade disruptions.

3.3 Midlands' export of goods: a sectoral picture

We further investigate the sectoral distribution of exports. This reveals three patterns. First, there is strong specialisation and concentration of exporting sectors. As suggested in Figure 4 below, the largest Standard International Trade Classification (SITC) section for exports in the Midlands was Machinery and Transport equipment products, which accounted for over 60% of total exports by both West and East Midlands. The next largest exporting sectors include Manufactured Goods, Miscellaneous Manufactures, Chemicals, Crude Materials, Food, and Live Animal products.

Second, the underwhelming recovery of the Midlands during the recent crisis could be attributed to the decline of exports in the Machinery and Transport equipment sector. Specifically, the West Midlands is an important area for firms that export cars and engines. By end of 2021, the Machinery and Transport equipment sector had recovered to £17bn, up from its 2020 export levels of £16.3bn, but still significantly behind its pre-pandemic 2019 exporting level of £20.3bn. Evidence from quarterly exports data suggests that compared to the sector's UK average exports, the impact of the disruption to trade went deeper in the West Midlands and the recovery was weaker. The most recent 2022 Q2 data show that the exports of the West Midlands decreased after the previous quarter, while the average UK exports of Machinery and Transport equipment increased over the same period.

Third, the Midlands' export decline appears to be more significant for non-EU than for the EU export markets. This appears to be mainly driven by the West Midlands and by the Machinery and Transport equipment sectors, since the non-EU exports have been recovering in the East Midlands. As at 2022 Q2, West Midlands' exports to non-EU remains on its downward trend.

Figure 4: Exports in goods by SITC sections, the Midlands in the UK, 2020 Q2-2022 Q2, £million

Source: The ONS Regional Trade Statistics in goods, all values are in million pounds. The data is available up to Q2 2022 at the time of writing.

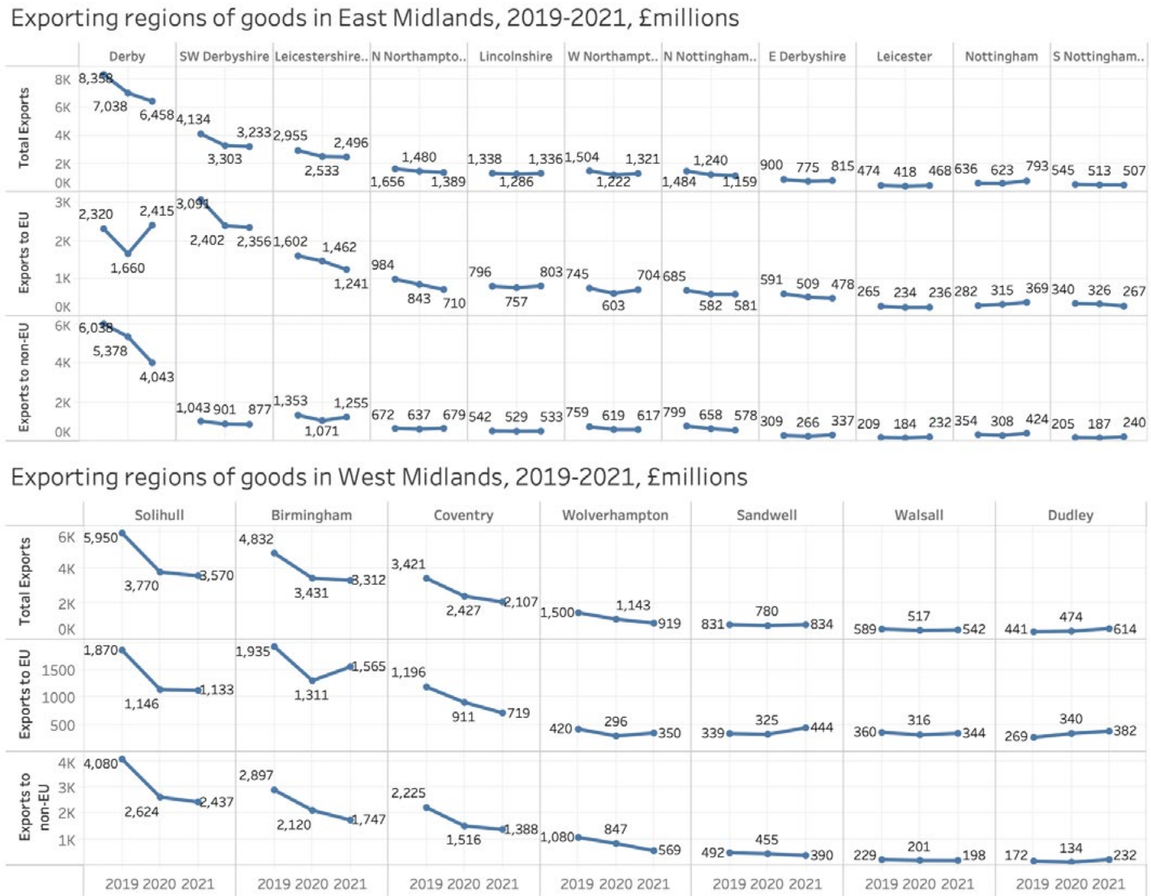
3.4 Sub-regional exports in the Midlands

In Figure 5, we go still deeper by probing the Midlands' sub-regions. Our analysis suggests that the overall statistics could be disguising important details. The sub-regional picture shows the following.

First, Derby takes the lion's share of the total exports of the East Midlands, being responsible for half the region's total exports to non-EU countries. Further, we can observe that the East Midlands' main export decline occurred in Derby because of reduced exports to the non-EU market, given that the region's exports to the EU market bounced back in 2021 after the disruption of 2020. Most other regions flat-lined over the three-year period.

Second, in the West Midlands, Solihull, Birmingham, and Coventry are the main exporting cities. While the patterns of these places are similar, Birmingham had a quicker recovery than Solihull and Coventry, especially in EU markets.

Figure 5: Exports in goods in sub-regions of the Midlands, 2019-2021, £million



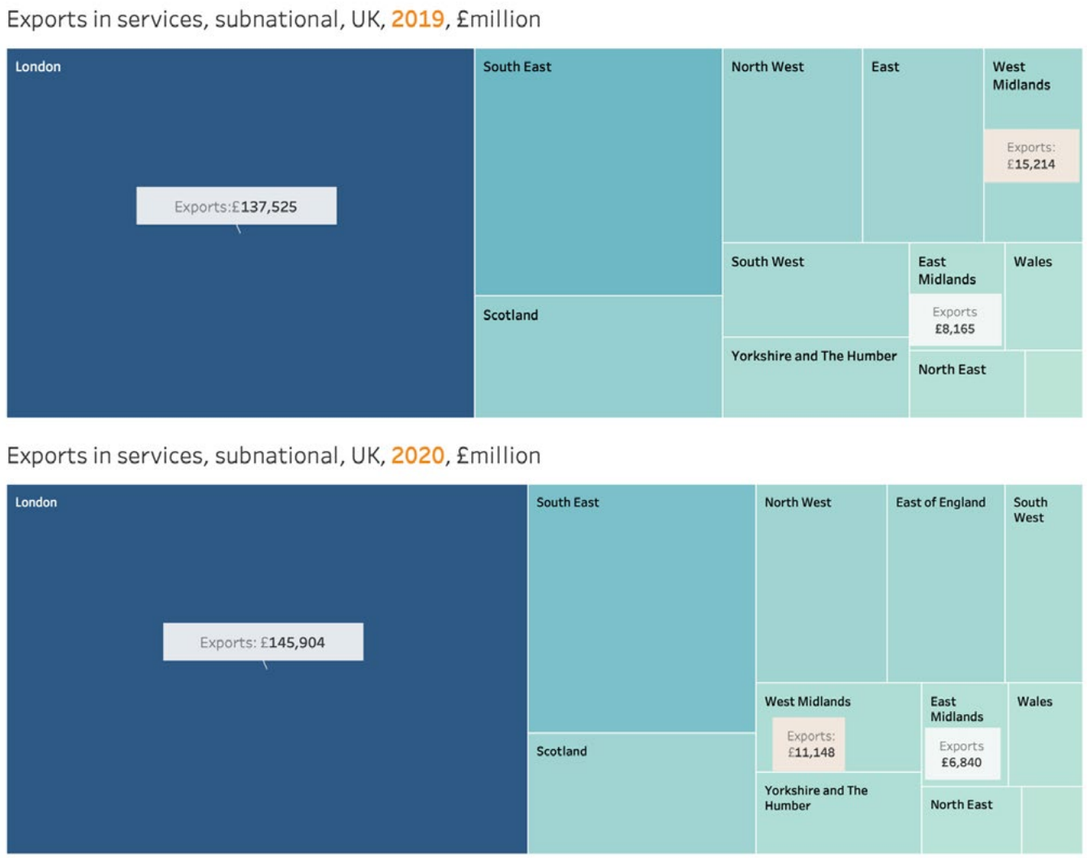
Source: The ONS Regional Trade Statistics in goods, all values are in million pounds. Sub-regions are at the level of International Territorial level 1 (ITL3, Counties and groups of unitary authorities). The data are available up to 2021 at the time of the writing. The 2022 data are expected to be published in June 2023.

3.5 Midlands' services exports

Services trade data is less available at regional level. Based on the most up-to-date data (2020), the value of the Midlands' exported services was nearly a quarter lower in 2020 (£18 billion) than in 2019 (£23.4 billion), which was the worst decline among UK regions (Figure 6). This mainly reflects the COVID pandemic trade shock. Looking specifically at the West Midlands, it exported £11 billion of services in 2020 compared to £15 billion in 2019, giving it the worst decline of all the UK regions (Figure 6) and explaining why the West Midlands slipped down a place to seventh in the UK regions' 2020 contributions to the national value of exported services.

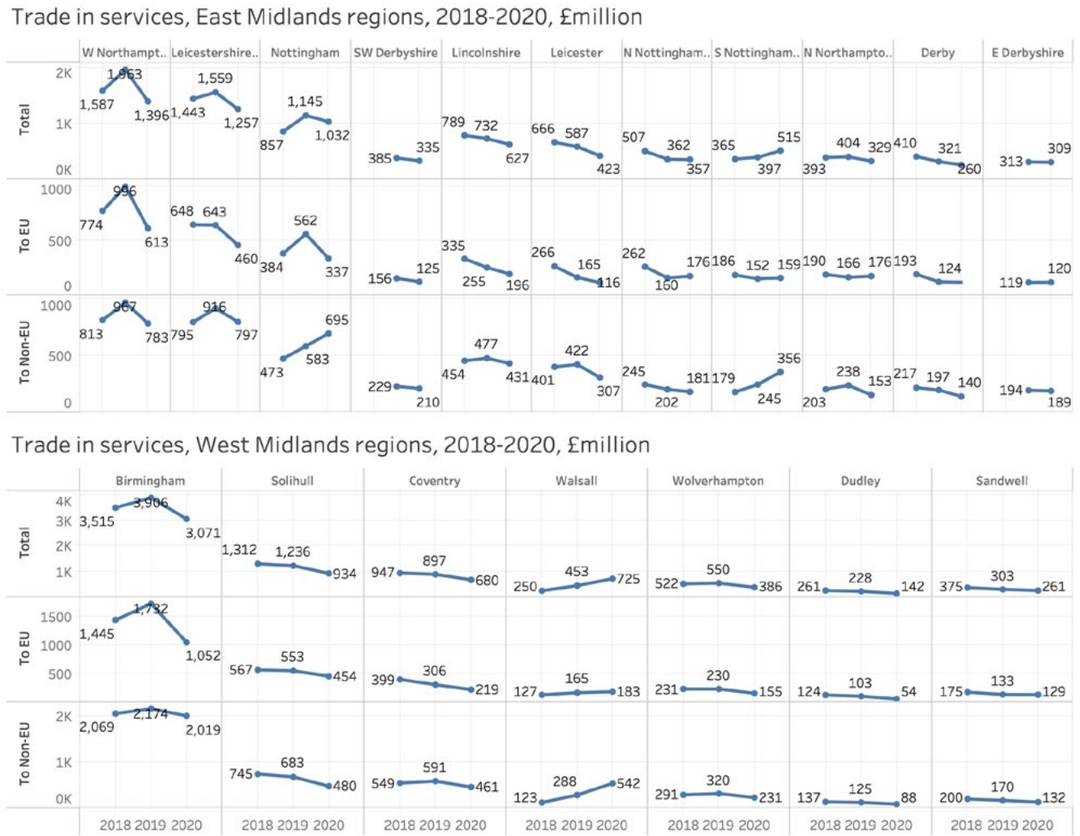
Birmingham, as the top services exporter in the West Midlands, had the sharpest decline in exporting to the EU in 2020, although its exports to the non-EU countries remained remarkably resilient, maintaining 93% of the pre-COVID level (Figure 7). Most sub-regions in the Midlands experienced disruption to their services exports in 2020; this was more serious for EU markets than for non-EU markets, which reflects the stricter travel restrictions during the first year of COVID pandemic. Interestingly, Nottingham, South Nottinghamshire, and Walsall showed growth during the period, indicating that they were not negatively impacted by the pandemic.

Figure 6: Exports in services, the Midlands in the UK, 2018-2020, £million



Source: The ONS Regional Trade Statistics in services, all values are in million pounds. Sub-regions are at the level of ITL3 (Counties and groups of unitary authorities). The data are available up to 2021 at the time of the writing. The 2022 data are expected to be published in June 2023.

Figure 7: Exports in services, in sub-regions of the Midlands, 2018-2020, £million



Source: The ONS Regional Trade Statistics in services, all values are in million pounds. Sub-regions are at the level of ITL3 (Counties and groups of unitary authorities). The data are available up to 2021 at the time of the writing. The 2022 data are expected to be published in June 2023.

4. Firm de-internationalisation in the literature

This section surveys the existing evidence, taken from both the literature and anecdotal sources, on the exporting experience of UK firms during the recent period. The literature in the fields of international economics and international business offers valuable insights on the factors that might explain a firm's decision to pull out of the international markets. Anecdotal evidence, although scattered and not necessarily representative, provides useful pointers for what might explain a firm's exporting decisions. Some organisations, notably the British Chambers of Commerce and the Federation of Small Businesses, have run various surveys and interviews, and reflecting on their findings can help us to understand specific factors behind firms' export challenges and dropouts.

Below, we review the theories and evidence in the existing literature on firm's de-internationalisation, focusing on firm exports.[11] Our discussion centres on the factors, both internal and external, that might explain a firm's decision to reduce exporting. We also review the evidence on firm's export challenges during the examined period, albeit this is fairly limited because data are still emerging.

4.1 Retreating from export markets: the concept

Compared to the literature on firm entries to the international market, the literature on firm retreat or exit is sparse. As a result, we understand much more about the former than the latter. Although a firm's cessation of exporting has different names in the international economics (IE) and international business (IB) literatures (e.g., retreat, withdrawal, exit, or de-internationalisation), it is a recognised phenomenon and has been increasingly shown to be commonplace.

Indeed, internationalisation is not a linear process. Firms tend to experience fluctuations in their level of international market engagement (Welch & Welch, 2009; Vissak and Francioni, 2013; Lafuente et al., 2015), and the intensity of their cross-border activities can go up or down. When the degree of internationalisation decreases, the "de-internationalisation" can be 'full' or 'partial' (Kafouros et al., 2021). Full-scale de-internationalisation refers to a complete termination of firms' international engagements. This contrasts with partial de-internationalisation, where firms continue to operate internationally even though they have reduced their commitments in given markets. In the case of exports, firms that have previously started exporting may reduce the intensity of exporting or they may stop altogether. Further, depending on the level of international commitment, firms can reduce exports or stop exporting for a short period of time, or in the long term, or even permanently (Crick, 2002).

Is exiting from exporting necessarily a bad thing? The tendency is to regard a reduction of global operations as a failure or negative outcome. Some scholars even use the adjective 'disappointed' to describe SMEs that have temporarily discontinued exporting but have plans to re-internationalise in the given market, whereas 'uninterested SMEs' is used to describe those with no long-term intention to re-enter the international market (Crick, 2004). However, given that firms normally internationalise to survive and grow through exploiting market opportunities, de-internationalisation may be seen as a long-term growth strategy, allowing the firm to restructure its international operations in turbulent markets (Freeman et al., 2013). As Turner and Gardiner (2007) argue, in a volatile foreign environment, firms that have strong roots in their home country are more likely to scale back their commitment to an international strategy so they can revert to a domestic focus. This gives them an opportunity to recover and strengthen their capabilities, which is crucial not only to their current survival and growth but also to their potential re-entry.

When it comes to small and medium firms that internationalise, research highlights that they often engage in relatively intermittent exporting for extended periods, and that sporadic exporting is commonplace among UK SMEs, who enter and exit the export markets without a coherent strategy (e.g., Crick, 2003; Love & Ganotakis, 2013; Requena-Silvente, 2005). According to Bernini et al. (2016), exiting the export market is common when firms regard exporting as an opportunistic or accidental phenomenon because they have no solid strategy for internationalisation.

Not all firms that have stopped exporting return to it again. The re-entry decision varies from one firm to another (Kafouros et al., 2022). Some firms are very likely to re-internationalise in a way that is similar to their initial entry, choosing the same entry mode and entry location, whereas other firms might decide to enter a new market using a totally new entry mode. However, re-internationalisation can happen for various reasons. For instance, firms might decide to re-enter the international markets to take advantage of new business opportunities or resources in foreign countries, or to diversify their operations (Javalgi et al., 2011). Furthermore, an improved international market environment can motivate firms to resume their foreign market engagement. Hence, it is useful to understand both the internal firm-specific factors and the external environmental ones that influence firms' decisions about de-internationalisation and subsequent re-entry.

[11]The IB literature discusses de-internationalisation in terms of withdrawing or ceasing to export or engage in foreign direct investment. We only focus on exporting in this study.

4.2 What internal factors explain the firm's export retreat?

As already noted, the literature on the firm's exit is sparse and sporadic. However, the IE literature recognises that firms self-select to engage in exporting only if they become sufficiently productive (see Melitz, 2003 for the theory, and Wagner, 2007 for a survey of the empirical evidence). In essence, self-selection occurs because not all firms are able to either overcome the necessary sunk costs associated with trade activities or to bear the risks associated with entering the foreign markets. Building on this, the "exporter premia" literature suggests that exporters tend to be larger in size, more capital intensive and skill intensive, and they pay higher wages (Frias, Kaplan and Verhoogen, 2009). They also import higher quality material inputs (Kugler and Verhoogen, 2008), spend more on R&D (Aw, Roberts and Xu, 2008; Harris and Li, 2009), produce more products (Bernard et al 2009) and better-quality goods (Amity and Khandelwal, 2009), and even pollute less (Halladay, 2008). In short, better firms export.

There are only a limited number of studies that explicitly address what causes exporters to exit the international markets (Harris and Li, 2011). However, given what we know about the antecedents of export selection, it is reasonable to postulate that in the case of a reverse, the key factor that leads to firm inability to export is low productivity (i.e., low compared with the threshold for entering the exporting market).

The IE literature holds that a change in export status is associated with considerable fluctuations in productivity (Harris and Li, 2011). Therefore, less productive firms are more likely to exit from exporting. This has been found for a sample of Canadian firms between 1993 and 2000; the hazard rate of exit from the export markets declines with establishment size, the number of exported products, and the exporting destinations.

This is, in essence, consistent with the IB literature, which draws on firm-specific factors to explain the firm decision to discontinue exporting. Such factors may be divided into firm attributes, resources, and capabilities; these underpin a firm's competitiveness, which is important for surviving and growing in the intricate international markets. Firm size and age are the main firm attributes. ***Firm size*** reflects the level of accumulated resources and capabilities owned by the firm (Dhanaraj & Beamish, 2003). Compared with their larger counterparts, smaller firms are usually less capital-intensive and have lower productivity levels (Bernini et al., 2016), which puts them in a disadvantageous position to compete in export markets. Bigger firms tend to enjoy higher economies of scale, which keeps down the related costs and consequently lowers the risk associated with exporting (Sandberg et al., 2019). Hence, larger firms are less likely to exit from international market, particularly when domestic demand is increased.

Similarly, ***firm age*** may relate to a firm's exporting performance. Firm age determines the stage of the firm's life cycle, which impacts on its operation. Entrants that are very young or very old (i.e., firms in the declining stages of their life cycle) may be more likely to drop out from the export market (Gkypali et al., 2015). Nevertheless, the terms 'born global' and 'international new ventures' suggest that some very young firms show high levels of commitment to the international markets right from the start of their existence (Cavusgil & Knight, 2015). Another factor that relates to age is firm experience, especially a firm's export experience. Prior ***export experience*** is seen as an important factor that contributes to an SME's decision to re-internationalise. Prior internationalisation experience, also known as learning by exporting, enhances firms by giving them knowledge about the foreign market, the customer base, and the latest technology (Love & Ganotakis, 2013; Salomon & Shaver, 2005). This leads to higher productivity, either directly (Andersson & Lööf, 2009; Wagner, 2007, 2012) or indirectly through the leveraging of human capital, production capability, or innovation (Love & Ganotakis, 2013; Salomon & Jin, 2010; Tse et al., 2017). This accords with evidence that export exit is more likely when firms (SMEs, in particular) suffer from a "liability of newness" due to their lack of export experience (Sui & Yu, 2012; Wang et al., 2017).

The resources that firms possess affect their overseas operations. Limited access to resources, including financial capital and human capital, can handicap a firm when it is facing the fierce competition of the international business environment, especially when this is accompanied by negative productivity shocks (Hagen et al., 2019; Yi & Wang, 2012).

Furthermore, ***R&D and innovation*** capabilities are deemed to help with firms' effectiveness (Lisboa et al., 2011) and to be crucial for their survival (Esteve-Pérez & Mañez-Castillejo, 2008; Martinez et al., 2019), particularly when they are exporting to complex foreign markets. Such capabilities enable firms to differentiate their offerings from those of their rivals in foreign markets (Love & Ganotakis, 2013).

Consequently, firms that lack the capability to develop and leverage innovation may struggle to become successful exporters. Love and Máñez (2019) argue that a firm's level of export intensity is positively associated with its likelihood to persist in exporting. That is, firms with low international commitments (low export intensity) are disinclined to devote considerable effort to exporting since replacing their domestic sales with international demand would be complex, expensive, and infeasible in the short run. Hence small firms that internationalise are most likely to give up exporting. Moreover, extant research highlights other internal determinants that can force firms towards export withdrawal. These include firms' limited (or lack of) ***access to external finance*** (Rossi et al., 2021), poor collaboration with international partners/ inter-organisational ***collaboration*** (Ganotakis et al., 2022), firm performance (including price/quality ratio) before exit (Chen et al., 2019), and limited ***technological capabilities*** and poor ***human capital*** (Gashi et al., 2014).

4.3 What external conditions push firms out of the exporting markets

There are also external factors, such as less favourable institutions, that cause international SMEs to withdraw from or reduce exporting (e.g., Benito & Welch, 1997; Crick et al., 2020; Jaskiewicz et al., 2021). Kostova et al (2008) point out that the organisational survival of international firms is highly dependent on their alignment with the external environment. The concept of distance is considered to be the first and main dimension of international business.

Distance need not be physical, with ***psychic distance***[12] being an external factor that influences the international entrepreneur's decision to discontinue their activities in a foreign market (Dow & Karunaratna, 2006; Safari & Chetty, 2019). When it comes to international expansion, psychic distance has an effect somewhat similar to geographical distance. However, rather than initially expanding to markets that are geographically close, firms expand to markets that are psychologically similar, which allows them to gain information about the operations in these new markets before they decide to proceed farther (Nordman & Tolstoy, 2014).

From the conceptual point of view, psychic distance derives from the unfamiliar socio-cultural environments and institutions of foreign markets (Child et al., 2002). This is particularly important since it can elevate the internationalisation risks associated with "the liability of foreignness" and the uncertainties stemming from cross-border activities (Johanson & Vahlne, 1977). Puthusserry et al (2014) highlight that psychic distance can cause learning barriers and increase the cost of transactions by barricading against international knowledge transfer. Therefore, and particularly for international SMEs, operating in markets that are perceived as being psychically distant escalates the risk of failure and impedes cross-border expansion.

Furthermore, ***geopolitical institutions*** (e.g., sanctions and embargos) and the current movements of de-coupling between economic partners and its related uncertainty (Duarte Alonso & Kok, 2019; Sampson, 2017) are other important determinants. Such restrictions can be imposed by the home country government, the host state(s), or other international authorities.

For instance, Sadeghi et al (2018) argue that restrictive measures, such as international sanctions/embargoes imposed by relevant authorities, can restrict the global activities of international firms. This is evidenced by the poor performance and even outright failure of international firms that have operated in countries (e.g., Iran and Russia) that were exposed to the uncertainty and hostility of sanctions (Ahadi & Kasraie, 2020). However, business barriers can also be imposed by a host state, such as tariff barriers designed to support domestic industry, or by other geopolitical shocks, such as nationalisation and expropriation. Such barriers can lead to a firm divesting itself from a foreign market (e.g., Orazgaliyev, 2018).

There are yet other challenges that are relevant to the trade activities of countries, and which massively impact on the international operations of firms. For instance, Brexit is an example of a ***trade-relevant measure***. Brexit imposed many challenges on SMEs' operations in European countries, such as regulatory barriers and increased operating costs of operation (e.g., human resources, supply chains, raw material) (Brown et al., 2019) resulting in the reverse expansion of many SMEs. This has been boosted by the COVID pandemic, which put millions of jobs at high-risk of failure.

When navigating the labyrinthine process of internationalisation, firms have always carefully considered the characteristics of the ***business environment of host markets*** by reference to its perceived level of environmental hostility, industrial policies, and competitive intensity and loss of competitiveness (Lo et al., 2016; Zhao et al., 2020). The variable characteristics of the host country are preliminary sources of uncertainty that can significantly challenge the internationalisation performance and strategy of firms (Wu et al., 2015).

For instance, when international firms face impediments (e.g., sector downturn and perceived level of environmental hostility) in the high-risk host country, they have a variety of options open to them; addressing the imperfections in the host country requires them to employ their internal and external resources and mechanisms. They may change their entry mode, limit their operations, or even de-internationalise from the hostile countries (Schwens et al., 2011; R. W. Tang & Buckley, 2020). Deng and Zhang (2018) stress that SMEs are most likely to partially or completely withdraw from a volatile market and expand to more supportive institutions.

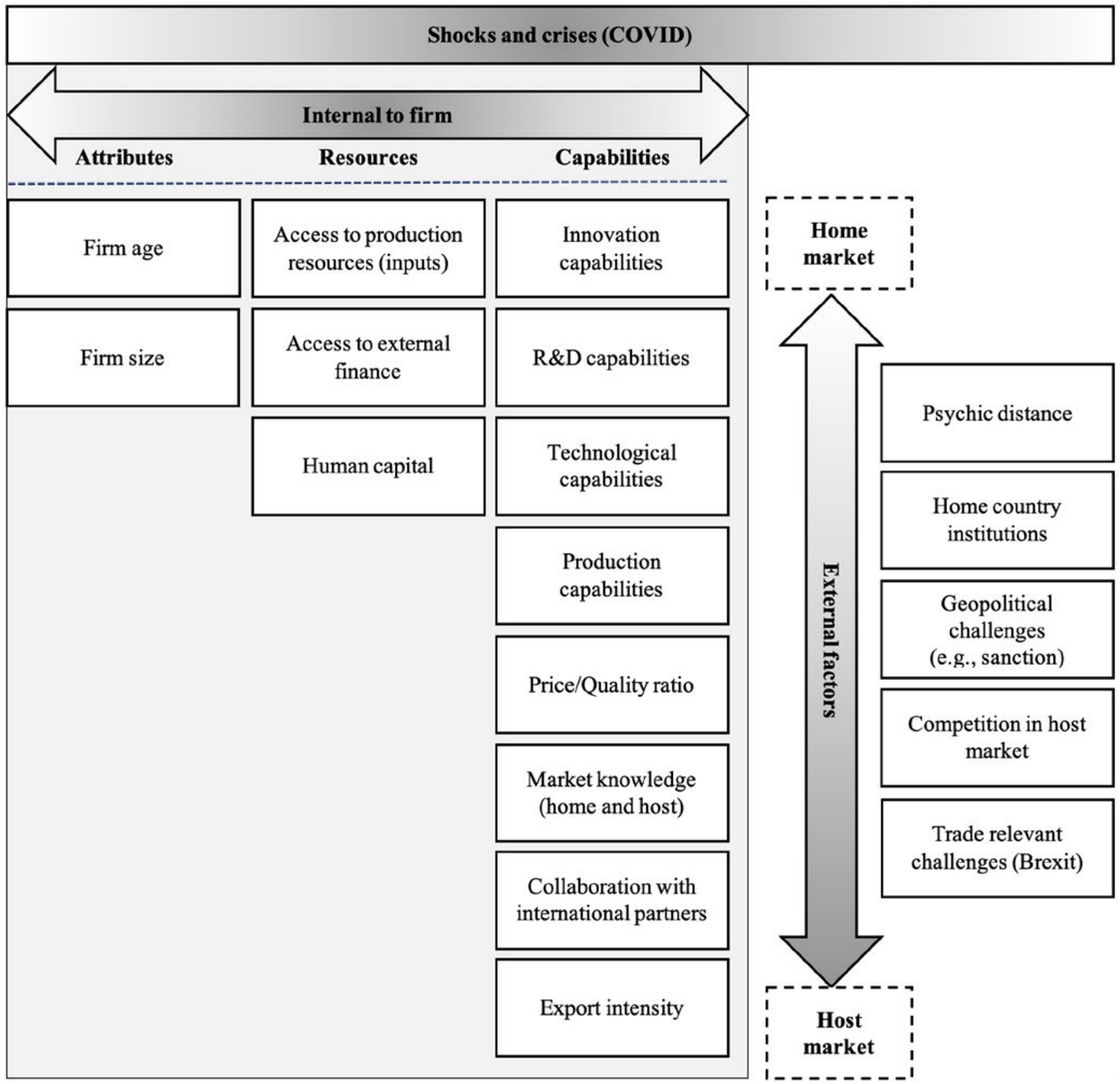
Furthermore, the domestic and international marketing activities of competitors are known to be another crucial factor for the internationalisation strategies of firms (Bowen & Wiersema, 2005). Similarly, for young and small firms, the perceived higher level of foreign-based competition in the host markets intensifies the complexity of their foreign activities (Fletcher, 2001; Freeman et al., 2013), which may result in a loss of competitiveness and, eventually, withdrawal from the given market.

Furthermore, it has been found that the marketing activities of competitors in both the home and host markets are crucial factors that can alter the internationalisation strategies of firms (Bowen & Wiersema, 2005). In particular, for younger and smaller firms, the high levels of perceived competition in the international markets can, directly and indirectly, marginalise them in the given markets because in too complex a situation they tend to deal with a loss of control by focusing on their core advantages (Freeman et al., 2013). This can be intensified by other external pressures imposed by the ***home country's business context*** (Tan & Sousa, 2020).

Here, the institutional environment (the rules and regulations with which businesses must conform if they are to be considered to be legitimate by the state) is relevant. Marano et al. (2016) argue that the home market business context is important in firm decisions making about whether to withdraw from international activities as they significantly impact on international transaction costs and their perceived uncertainty. Note that the institutional pressures may be formal or informal, but they all control the way in which foreign firms interact with the external environment (Cheng & Yu, 2008; Martínez-Ferrero & García-Sánchez, 2017). Formal institutional pressures include regulatory barriers to exporting to a country, while the informal institutions include the norms of social behaviour that may push firm managers to exit a market (Li & Ding, 2013).

[12]In International Business, psychic distance is based on perceived differences between a home country and a "foreign" country regardless of physical time and space factors which differ across diverse cultures.

Figure 8: Contributing factors to the export-reduction or export-withdrawal decision



Source: Authors' illustration based on our own literature review.

5. An Explorative Study of Business Insights and Conditions Surveys (BICS)

In this section, we draw on the Business Insights and Conditions (BIC) Surveys from the Office of National Statistics to study the micro level trade dynamics of the Midlands' exports. The BIC surveys (which are still ongoing) have been sent out fortnightly to around 40,000 businesses since 2020. The surveys ask how businesses have responded to various situations, including export challenges. The survey has varying rates of response for each wave, which results in a highly unbalanced panel. The ONS has adopted best practice methods for weighting the BICS results so they reflect the number of all UK businesses. This ensures that the BICS represents the UK business population.

Up until October 2022 when this analysis began, there were 64 waves of surveys, providing around 58,000 raw firm-wave observations for the Midlands regions. In this analysis, we mainly rely on BICS waves 21 to 64, covering the period from 14 January 2021 to 8 September 2022. The raw data for this period contain over 30,000 firm-wave observations, or around 1,100 firms on average in each two-week wave. The sample's structure and characteristics are discussed in more detail in Appendix: Technical notes.

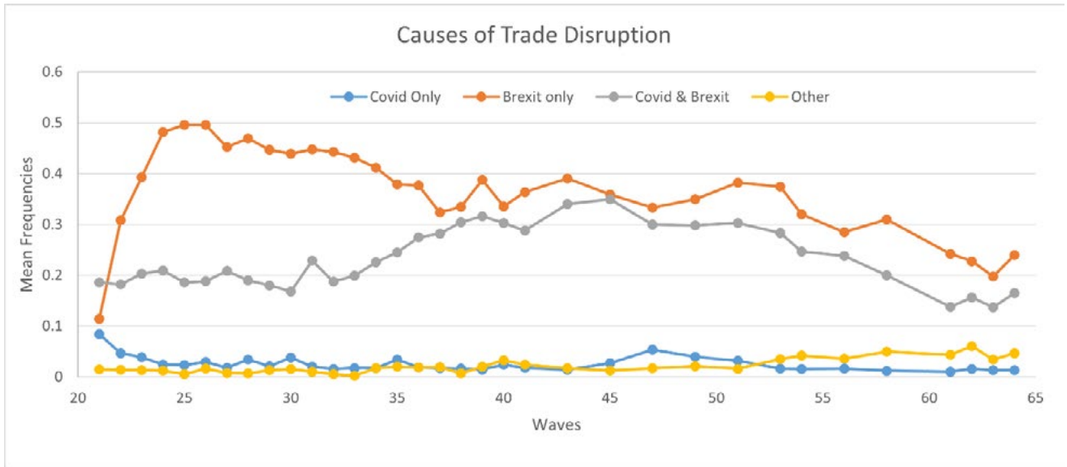
From the raw data of the firms' reports of their trade experience and performance during the examined period, we draw initial observations of the basic trends. These observations are interesting in themselves, even if they are not suitable for inferring causation. However, the regression analysis that follows will build on these initial statistical observations to examine the relationship and nuances between the key variables of interest. Building on our existing work and the linked data between BICS and the the Inter-Departmental Business Register (IDBR) and Business Structural Database (BSD), we analyse the factors that contribute to export reduction and dropout in the Midlands at firm level, controlling for firm heterogeneity in a way that is often not possible in survey-like studies. The key variables of interest include the firm's perceived main causes of export disruption (COVID, Brexit, or both) and the types of export challenge experienced by the firm (e.g., reduced demand, transport and distribution, legal issues, customs and tariffs, export licences). The analysis controls for firm age, size, labour productivity, industry, location, and export markets.

5.1 Data and an initial observation

In wave 21-64 of BICS, which corresponds to the period January 2021 to September 2022, firms were asked to state their trade status and then identify the main causes of their exporting challenges. Note that these responses are self-reported and reflect the firm's perception of the factors that have presented it with export challenges.

More specifically, firms were asked to select just one option from the list of specific perceived causes of the export challenges they experienced:
(1) Coronavirus (COVID-19) pandemic; (2) End of the EU transition period,
(3) Coronavirus (COVID-19) pandemic plus the end of the EU transition period,
(4) Other. Based on the answers given during the examined period, we find that the cause of export challenge that is most frequently selected by Midlands firms is Brexit, followed by both Brexit and COVID. The proportion of firms that felt that Brexit was the cause did reduce over time, gradually dropping from nearly half of the sample at the beginning of January 2021 to its lowest point (20% of firms) in January 2022. This vividly describes the export disruptions that were caused by the end of transition and the implementation of the TCA. Interestingly, of the firms that responded to the question, few declared that COVID was the main and only cause of their export challenges. Most firms admitted that Brexit or Brexit plus COVID were to blame.

Figure 6: Firms' perceived cause for export challenges



Source: The ONS BIC Survey.
Note: The left axis is the mean frequencies of choices by firms in each wave. The x-axis shows the time period for waves 21-64, correspond against the period between January 2021 to September 2022. Wave 46 corresponds to January 2022. The rest of the firms in the sample did not answer the question.

What challenges have Midlands firms encountered? In waves 21-56 of the survey, corresponding to the period January 2021 to May 2022, firms were asked if they had experienced any of the following challenges for exporting goods or services within the last two weeks (or within the last month, as the questions was phrased in surveys from wave 41 onwards):[14]

- Additional paperwork
- Basing some staff in an EU member state to be allowed to work
- Change in transportation costs
- Closure of infrastructure used to export goods or services
- Customs duties or levies
- Destination countries changing their border restrictions
- Disruption at UK borders
- Lack of hauliers to transport goods or lack of logistics equipment
- Reduced demand for products and services
- Work permit or visa restrictions, or lack of mutual recognition of professional qualifications

As we see from Figure 7, the most common problem experienced by firms is "Additional paperwork". More than 60% of firms on average during the sample period chose this as their main export challenge, and at its peak it reached 70% of sample. This seems to reduce after wave 53 (April 2022), dropping to about 50% in May 2022.

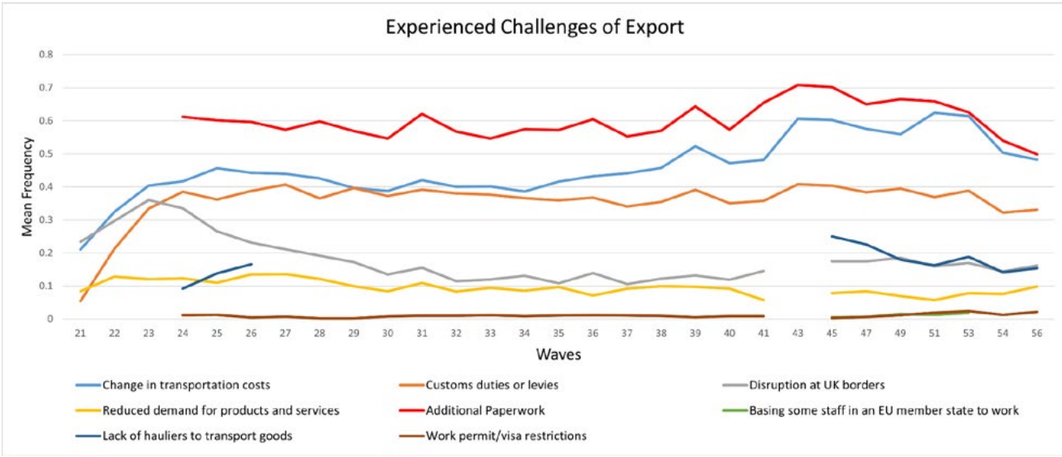
With the global increase in energy prices that began in October 2021 (Wave 41), we observe that change in transportation cost became one of the challenges that firms most report facing. In most waves, more than 40% of firms reported to have experienced this challenge, peaking at 60% of firms in wave 53 (April 2022), putting it on par with "Additional paperwork".

The third most frequently reported export challenge is customs and duties. Unsurprisingly, the rate of firms scoring this saw a sharp rise in January 2021 (which was when the TCA was implemented), and it reach its highest level of 40% of firms in late February 2021. This challenge remained persistent ever since, being reported by 30-40% of firms.

The "disruption at UK borders" is also identified by the surveyed firms as a challenge. The prevalence of border challenges appears to reach a peak during the initial period of TCA implementation in Spring 2021, when one in three firms reported difficulties. Since then, we observe an improvement, with only 10-20% of firms reporting having experienced challenges.

[14]In waves 41-56, the question is asked in one in every two waves.

Figure 7: Firms' experienced export challenges



Source: The ONS BIC Survey.
Note: The left axis is the mean frequencies of choices by firms in each wave. The x-axis shows the time period. The waves 21-56 correspond to the period between January 2021 and May 2022. The figure includes all available information, some of the challenges are not included in the modelling for lack of observations. Answers are not mutually exclusive as firms can choose more than one challenge. If the line is broken, the choice is not available in the wave.

How does the experience of Midlands firms compare with other regions? Table 2 shows that in the Midlands, higher numbers of firms report most of the export challenges compared against other regions, including the North. The differences are more pronounced for "Changes in transportation cost", "Customs duties or levies", "Disruption at UK borders", and "Additional paperwork".

Moreover, what appears to differentiate the Midlands from other regions is how they perceive the impact of Brexit. Nearly 60% of Midlands firms consider Brexit to be the sole or joint main cause of their export challenges, compared with 53% of firms in the North, 52% from East of England, 49% from South, and 32% from London.

Table 2: Firms' experienced export challenges in different regions

	Midlands		North		East		South		London	
Variable	**Obs**	**Mean**	**Obs**	**Mean**	**Obs**	**Mean**	**Obs**	**Mean**	**Obs**	**Mean**
Perceived Causes of Disruptions:										
COVID only	12,709	0.024	15,332	0.021	6,866	0.034	17,523	0.032	11,038	0.041
Brexit only	12,709	0.354	15,332	0.332	6,866	0.335	17,523	0.298	11,038	0.165
COVID & Brexit	12,709	0.221	15,332	0.201	6,866	0.189	17,523	0.189	11,038	0.154
Others	12,709	0.02	15,332	0.017	6,866	0.019	17,523	0.017	11,038	0.011
Experienced Challenges:										
Change in transportation costs	10,652	0.452	12,968	0.404	5,892	0.397	14,872	0.368	9,401	0.212
Customs duties or levies	10,652	0.354	12,968	0.319	5,892	0.346	14,872	0.301	9,401	0.194
Disruption at UK borders	10,299	0.18	12,538	0.174	5,680	0.155	14,378	0.149	9,073	0.095
Reduced demand	10,299	0.096	12,538	0.074	5,680	0.08	14,378	0.08	9,073	0.076
Additional paperwork	10,652	0.531	12,968	0.486	5,892	0.478	14,872	0.447	9,401	0.261
Basing some staff in an EU member state to work	9,487	0.007	11,612	0.003	5,281	0.002	13,305	0.004	8,402	0.004
Lack of hauliers to transport goods or lack of logistics	10,299	0.057	12,538	0.054	5,680	0.048	14,378	0.038	9,073	0.022
Work permit or visa restrictions	10,299	0.009	12,538	0.01	5,680	0.011	14,378	0.018	9,073	0.019

Source: The ONS BIC Survey.
Note: Export Disruption is the ordered variable, taking value 1-4, with 4 being the most serious disruption. 1 is for firms reporting to have exported more than normal in the last two weeks (or month) compared to normal circumstances, 2 if they exported as normal, 3 if they exported less than normal, 4 if they were unable to export in the last two weeks. All other variables are dummy variables. Sub-regions of England are classified using NUTS1 classification. Midlands covers East and West Midlands; North covers North East, North West, and Yorkshire and the Humber; South refers to South East and South West; East refers to East of England.

5.2 Empirical analysis of firm's export disruption

To understand the factors that might help explain the export disruptions in the Midlands, we specify the following empirical model:

$$Export\ disruption_{it} = \beta_0 + \beta_2 Cause_{it} + \beta_3 Export\ challenge_{it} \times X_i + \beta_4 Export\ destination_{it} + \beta_5 X_i + \beta_6 Sector_s + \beta_7 Regional_r + \beta_8 Wave_t + u_{it}$$

where ***Export disruption***$_{it}$ is firm i's exporting status in the last two weeks (or months) compared with normal expectations for that time of year. This ordered variable takes value 1 if the firm i is exporting more than normal, 2 if exporting as normal, 3 if exporting but less than normal, and 4 if unable to export in the last two weeks. Thus, a higher variable value indicates an increasing degree of export disruption experienced by firm i. Further, we define two binary variables from the export disruption variable to help with the modelling:

a) ***Export Decline:*** Y is 1 if the firm is still exporting but less so than normal or if it has not been able to export in the last two weeks (month), 0 otherwise.

b) ***Export Stopped:*** Y is 1 if the firm not been able to export in the last two weeks (month), 0 otherwise.

On the explanatory variable side, ***Cause***$_{it}$ is a set of variables for the firm's perceived main cause of the export challenges. This is based on the question, "What was the main cause of these exporting challenges?" The answer comes from a broad range of mutually exclusive options: Brexit, COVID, Brexit and COVID, and other challenges. ***Export challenges***$_{it}$ it captures the responses from the question, "Has your business experienced any of the following challenges with exporting over the last two weeks?". The question are not mutually exclusive and firms can choose any or all of the following challenges:

(1) transportation costs, (2) customs duties or levies, (3) disruption at UK borders, (4) reduced demand for products and services, (5) additional paperwork, (6) basing some staff in an EU member state to be allowed to work, (7) lack of hauliers to transport goods or lack of logistics equipment, (8) work permit or visa restrictions, or lack of mutual recognition of professional qualifications. The last four options (5-8) are only available in waves 24 onwards and therefore including them in the model means a loss of observations in the estimation.

We include several control variables. ***Export challenges***$_{it}$ captures firm's export destinations and is based on the question "Which of the following best describes your business's exporting status?" It consists of two dummy variables, "To EU only" and "To both EU and non-EU", with a base group "To non-EU only". Further, X_i is a vector of firm characteristics including size (number of employees in logarithm), age (number of years since firm establishment), and labour productivity measured by turnover per employee in logarithm.

We control for sector, location, and time-specific effects through their respective dummies: sector dummies (s) at Standard Industrial Classification (SIC2) level, regional dummies (r) at NUTS1 subregional level for each of the five regions, and wave dummies (t). These variables are drawn from the linked BSD 2020 data. As the dependent variable is ordered (or binary), the model is estimated by the Ordered Probit (or Probit) estimation method.

5.3 Summary Statistics

The summary statistics for the variables used in our regression analysis for the Midlands are presented in Table 3. The three dependent variables that we rely on in the model are presented in the table. The first is a categorical variable, which indexes export disruption from 1 to 4 (with 3 and 4 indicating disruption). All the other variables of interest are binary (0-1) depending on the selection of the option by the survey respondent. Answers relating to the cause of the export disruption are mutually exclusive, whereas answers to the experienced challenge are not. Firms may report as many challenges as they feel would best describe their experience.

The mean scores for the causes of export disruptions show that 35% of the exporting Midlands firms reported Brexit as the main cause of the trade disruption, and another 22% perceived that both COVID and Brexit were the cause of the disruption.
The export challenges most commonly reported by Midlands exporter firms were additional paperwork (53%), changes in transportation costs (45%), and customs levies and duties (35%).

Finally, firm characteristics, labour productivity, size, and age of the firms are extracted from the BSD data and the first two are used in logarithmic form in our analysis. The mean and standard deviations of these variables suggest that the distribution of the firm characteristics is spread out with a moderate range of values. Likewise, in the analysis, firm ages go from two to 49 years, with an average of 30.6.

Table 3: Summary Statistics of BICS sample for the Midlands

Variable	Obs	Mean	Std. dev.	Min	Max
Export Status (Dependent variable)					
Export Compared to Normal (ordered)	12,410	2.31	0.633	1	4
Export Declined or Stopped, dummy	12,410	0.362	0.481	0	1
Export Stopped, dummy	12,410	0.043	0.202	0	1
Export Destinations (base: non-EU)					
To EU only, dummy	9,696	0.284	0.451	0	1
To both EU and non-EU, dummy	9,696	0.573	0.495	0	1
Causes of Export Disruption (exclusive choices)					
COVID, dummy	12,709	0.024	0.154	0	1
Brexit, dummy	12,709	0.354	0.487	0	1
COVID & Brexit, dummy	12,709	0.221	0.415	0	1
Others, dummy	12,709	0.02	0.142	0	1
Challenges					
Change in transportation costs, dummy	10,652	0.452	0.498	0	1
Customs duties or levies, dummy	10,652	0.354	0.478	0	1
Disruption at UK borders, dummy	10,299	0.18	0.384	0	1
Reduced demand for products and services, dummy	10,299	0.096	0.295	0	1
Additional paperwork, dummy	10,652	0.531	0.499	0	1
Basing some staff in an EU member state to be allowed to work, dummy	9,487	0.007	0.481	0	1
Lack of hauliers to transport goods or lack of logistics equipment	10,299	0.057	0.233	0	1
Work permit or visa restrictions, dummy	10,299	0.009	0.095	0	1
Firm Characteristics					
Labour productivity (log)	25,444	4.755	1.016	0.006	9.71
Firm size (log)	25,514	4.423	1.526	0	10.976
Firm age	25,676	30.621	14.256	2	49

5.4 Findings

Export Stopped

We first examine how export causes and challenges affect the probability that Midlands firms will experience export disruption. We started with the Probit model where the dependent variable is ***Export Stopped*** to examine the likelihood of a firm stopping exporting during the examined period. Table 4 presents the estimates of three models with varying specifications for Midlands firms. This mitigates potential multicollinearity between variables.

We find that exporting to non-EU only over this period is associated with the highest probability of stopping exporting. Firms with an exporting portfolio in both EU and non-EU markets register a significantly higher probability of continuing to export. This is consistent with the idea that market diversification helps diversify risks.
We find that there are two statistically significant factors that impact on export exit.

On the one hand, firms that report a reduced demand for products and services are more likely to have stopped exporting. On the other hand, firms that base staff in an EU member state are associated with a much-reduced likelihood of exiting exporting. Interestingly, perceiving the main cause of export challenges as "Others" seems to increase the likelihood of export exit, more so than "COVID only" or "Brexit only". Although we do not know what "Others" may be, it suggests that the picture could be complex.

The export challenges that the raw data indicate are common to most firms, such as a rise in transport costs or customs levies, are not statistically significant. In addition, there is some evidence that larger firms are less likely to stop exporting, although the estimates are only marginally significant.

Table 4: Export disruptions of Midlands firms: what factors drive firms to stop exporting?
Export Stopped =1

	(1)	(2)	(3)
VARIABLES	**Causes**	**Challenges**	**All Challenges**
Export destination (base group: only non-EU)			
To EU only	-1.0341***	-0.9430***	-0.9476***
	(0.1038)	(0.0945)	(0.0974)
To both EU and non-EU	-1.5732***	-1.4693***	-1.4452***
	(0.1301)	(0.1239)	(0.1219)
Main cause of export challenge (base group: 0 "exporters that did not answer")			
COVID only	0.6811***		
	(0.1818)		
Brexit only	0.2804*		
	(0.1289)		
COVID & Brexit	0.1803		
	(0.1346)		
Others	0.7640**		
	(0.2445)		
Experienced exporting challenges in:			
Change in transportation costs		-0.1456	-0.0916
		(0.1005)	(0.0993)
Customs duties or levies		-0.1182	-0.0825
		(0.0899)	(0.0952)
Disruption at UK borders		0.1338	0.1179
		(0.0952)	(0.0968)
Reduced demand for products and services		0.5348***	0.5526***
		(0.1090)	(0.1108)
Additional paperwork			-0.1544
			(0.1118)
Basing some staff in an EU member state to work			-3.5684***
			(0.6424)
Lack of hauliers to transport goods or lack of logistics			0.0534
			(0.1944)
Work permit or visa restrictions			-0.1315
			(0.5407)
Firm characteristics			
Labour productivity	-0.1325+	-0.1279+	-0.1320+
	(0.0692)	(0.0710)	(0.0728)
Firm size	-0.0938+	-0.0919+	-0.1011*
	(0.0482)	(0.0481)	(0.0494)
Firm age	-0.0044	-0.0039	-0.0037
	(0.0053)	(0.0051)	(0.0051)
Subregion Dummies			
West Midlands	0.1817	0.1707	0.1783
	(0.1151)	(0.1146)	(0.1165)
Constant	0.1431	-0.0461	-0.0143
	(0.6577)	(0.6571)	(0.6720)
Observations	8,230	8,230	7,919

Note: The dependent variable is ***Export Stopped***. It takes value 1 if Export Status not been able to export, 0 otherwise.
Robust standard errors in parentheses *** p<0.001, ** p<0.01, * p<0.05, + p<0.1.

Export Decline

As only a few firms reported having ceased exporting during the surveyed period, we expanded our analysis with a second dependent variable: ***Export Decline***. Here, the dependent variable (Y) is 1 if the firm "exporting, but less than normal" or "not been able to export" in the last two weeks (month), and 0 otherwise. Table 5 reports the estimate of Probit models using variables similar to the previous model.

The results confirm that a higher diversity of export destination (exporting to both EU and non-EU countries) reduces the likelihood of export decline. Firms' perception of the main cause of the export challenges seems to show a pecking order: COVID was the most detrimental, followed by COVID & Brexit, then others, with Brexit trailing behind. Comparing these results against the results from the Export Stopped model, this may suggest that the firms that stopped exporting altogether might have more idiosyncratic reasons that go beyond the common shocks and export disruptions.

However, the factors that result in export reduction are rather more common and may be understood through generic factors. All four export challenges listed in Model (2) are found to be statistically significant in increasing the probability of trade decline. Of these, "Reduced demand for products and services" has the strongest impact, followed by "Customs duties and levies", "Change in transportation costs", and "Disruptions at borders". Finally, the model that includes all the challenges, Model (3), finds similar results to Model (2), but the newly added challenges are not proven to increase the likelihood of export decline.

Table 5: Export disruptions of Midlands firms: what factors drive firms' export decline?
Export Decline =1

VARIABLES	Causes	Challenges	All Challenges
Export destination (base group=To non-EU only)			
To EU only	-0.1395 (0.0876)	-0.1136 (0.0898)	-0.1150 (0.0912)
To both EU and non-EU	-0.1877* (0.0830)	-0.2075* (0.0850)	-0.2054* (0.0868)
Main Cause of export challenge (base group=0 "the firms that did not answer")			
COVID	1.0969*** (0.1184)		
Brexit	0.4430*** (0.0717)		
COVID & Brexit	0.7936*** (0.0802)		
Others	0.8206*** (0.1570)		
Experienced exporting challenges in: (base group=0 "exporters that did not answer")			
Change in transportation costs		0.1914** (0.0638)	0.2012** (0.0680)
Customs duties or levies		0.2910*** (0.0605)	0.2985*** (0.0635)
Disruption at UK borders		0.1664** (0.0605)	0.1936** (0.0624)
Reduced demand for products and services		1.5646*** (0.0848)	1.6000*** (0.0903)
Additional paperwork			-0.0084 (0.0727)
Basing some staff in an EU member state to work			-0.3414 (0.3593)
Lack of hauliers to transport goods or lack of logistics			0.0391 (0.0928)
Work permit or visa restrictions			-0.4265+ (0.2434)
Firm characteristics			
Labour productivity	-0.0960+ (0.0519)	-0.0845+ (0.0503)	-0.0921+ (0.0515)
Firm size	0.0419 (0.0319)	0.0683* (0.0335)	0.0743* (0.0349)
Firm age	0.0022 (0.0030)	0.0013 (0.0031)	0.0010 (0.0032)
Subregion Dummy			
West Midlands	0.0658 (0.0740)	0.0967 (0.0763)	0.1072 (0.0787)
Constant	-0.1833 (0.5264)	-0.1169 (0.4608)	-0.1104 (0.4694)
Observations	9,443	9,081	8,712

Note: The dependent variable is ***Export Decline***. It takes value 1 if Export Status Stopped or Decline, 0 otherwise.
Robust standard errors in parentheses *** p<0.001, ** p<0.01, * p<0.05, + p<0.1.

Export Disruption

Next, we change our model specification to test the sensitivity of our findings. We use an ordered Probit model to estimate the impact of the factors of interest on the likelihood of four levels of export disruption in an ordered fashion. Rather than estimating the probability of a firm stopping exporting or the probability of a firm experiencing export decline, an ordered model estimates the marginal probability of a firm moving from one status to another, say from exporting normally to an export decline, or from export decline to export cessation[15] Arguably this model is more restrictive than a single Probit model as it assumes constant marginal probability between all categories (i.e. levels of export disruption). Put differently, the variables that are statistically significant from the estimate need to be those that can well explain the shifts of likelihood between different levels of export disruption.

Our results identify that the factors impacting on export decline remain relevant in driving the odds of the levels of export disruption. This shows the robustness of the previous model estimates. Overall, the firm perception that "COVID only" was the main cause of export disruption still comes out top, being associated with a higher degree of export disruption with small magnitude of differences. This is followed by "Others", "COVID & Brexit", and "Brexit only". Consistently exporting to the non-EU only is attached to a higher probability of a firm experiencing more serious trade disruptions. Firms that export to both the EU and non-EU markets consistently register being less likely to experience trade disruption, and that disruption is of a lower degree.

The reported export challenges remain important factors for distinguishing the firms' experience of trade disruptions. "Reduced demand for products and services" has the strongest impact, followed by "Customs duties and levies", and "Disruptions at borders", while the reported challenge of "Change in transportation costs" is no longer a statistically significant explanation of the shifts between the four exporting statuses.

As for firm characteristics, labour productivity and firm size has limited effects on the likelihood of having export disruption, and we did not find any significant impact of firm age on trade status. There is no statistically significant difference between West Midlands and East Midlands.

[15]Ordered Probit model uses the proportional odds assumption: all coefficients on the predictors/independent variables are equal for every category of the outcome. Hence, the slopes of the estimated equations are identical.

Note: The table reports the Ordered Probit model estimation of the factors hypothesized to impact on the degree of ***export disruption*** (dependent variable), which takes value 1-4, *** p<0.001, ** p<0.01, * p<0.05, + p<0.10.
Note: The dependent variable is Export Disruption. It takes value 1-4, indicating increasing degrees of export disruption experienced by firms. Specifically, Export disruption takes value 1 for firms reporting having exported more than normal in the last two weeks (or month), 2 if they exported as normal, 3 if they exported less than normal, 4 if they were not able to export in the last two weeks (or month). The model is estimated by Ordered Probit. Robust standard errors in parentheses *** p<0.001, ** p<0.01, * p<0.05, + p<0.1.

Table 6: Export disruptions of Midlands firms: what factors drive firms' export disruption?

	(1)	(2)	(3)
VARIABLES	**Causes**	**Challenges**	**All Challenges**
Export destination			
To EU only	-0.3840***	-0.3936***	-0.3914***
	(0.0786)	(0.0816)	(0.0834)
To both EU and non-EU	-0.4608***	-0.4931***	-0.4879***
	(0.0761)	(0.0784)	(0.0805)
Main cause of export challenge:			
COVID	0.7336***		
	(0.1298)		
Brexit	0.2922***		
	(0.0581)		
COVID & Brexit	0.5699***		
	(0.0636)		
Others	0.6726***		
	(0.1504)		
Experienced exporting challenges in:			
Change in transportation costs		0.0698	0.0928+
		(0.0522)	(0.0556)
Customs duties or levies		0.1982***	0.2064***
		(0.0493)	(0.0526)
Disruption at UK borders		0.1170*	0.1420**
		(0.0473)	(0.0490)
Reduced demand for products and services		1.1115***	1.1124***
		(0.0517)	(0.0528)
Additional paperwork			-0.0381
			(0.0597)
Basing some staff in an EU member state to work			-0.0819
			(0.2168)
Lack of hauliers to transport goods or lack of logistics			-0.0644
			(0.0806)
Work permit or visa restrictions			-0.1934
			(0.1757)
Firm characteristics			
Labour productivity	-0.0665	-0.0567	-0.0720+
	(0.0413)	(0.0407)	(0.0424)
Firm size	0.0191	0.0388	0.0422
	(0.0245)	(0.0254)	(0.0266)
Firm age	0.0017	0.0007	0.0007
	(0.0025)	(0.0026)	(0.0027)
Subregion Dummies			
West Midlands	0.0497	0.0680	0.0811
	(0.0588)	(0.0605)	(0.0634)
/cut1	-2.4098***	-2.5808***	-2.6961***
	(0.3684)	(0.3478)	(0.3594)
/cut2	-0.1310	-0.1651	-0.2119
	(0.3645)	(0.3433)	(0.3541)
/cut3	1.4654***	1.5233***	1.4816***
	(0.3731)	(0.3524)	(0.3631)
Observations	9,471	9,106	8,757

Sectoral Factors

We next examine if there is a sectoral dimension to the challenges that exporters faced during the period. Focusing on the likelihood of export decline (akin to model [2] and the results reported in Table 5), we present the results by split sample in Table 7, identifying some differences in terms of the challenges experienced by manufacturing (NACE sectors 10-33) versus services sectors (NACE sectors 45-99).

First, in the split sample, the firm's perception that "COVID only" was the main cause of their export challenges still drives up the probability of export decline. The COVID factor has the strongest and largest effect for the manufacturing sectors. For the services sector firms, Brexit-related causes appear more important. We find that "Brexit only" has a more statistically significant and larger impact for the services firms, increasing the likelihood of trade decline, while the effect is only marginally significant for manufacturing firms. This may reflect wide variations in the experiences of the firms.

"Reduced demand for products and services" continues to be the most significant challenge for the export disruption of both sectors. It is then followed by "Customs duties and levies" for both. "Change in transportation costs" significantly affects the manufacturing firms, whereas for the services firms, "additional paperwork" is found to have significant and increasing impact on the probability of export decline.

We then plotted the regression coefficients of the export challenges for all Midlands firms, and for the manufacturing and services firms separately. This gave a clear visualisation of the main factors that explain the likelihood of a firm encountering challenges. Less demand for products and services is undoubtedly the most powerful explanation of firms' export challenges, if slightly more so for manufacturing than for services.

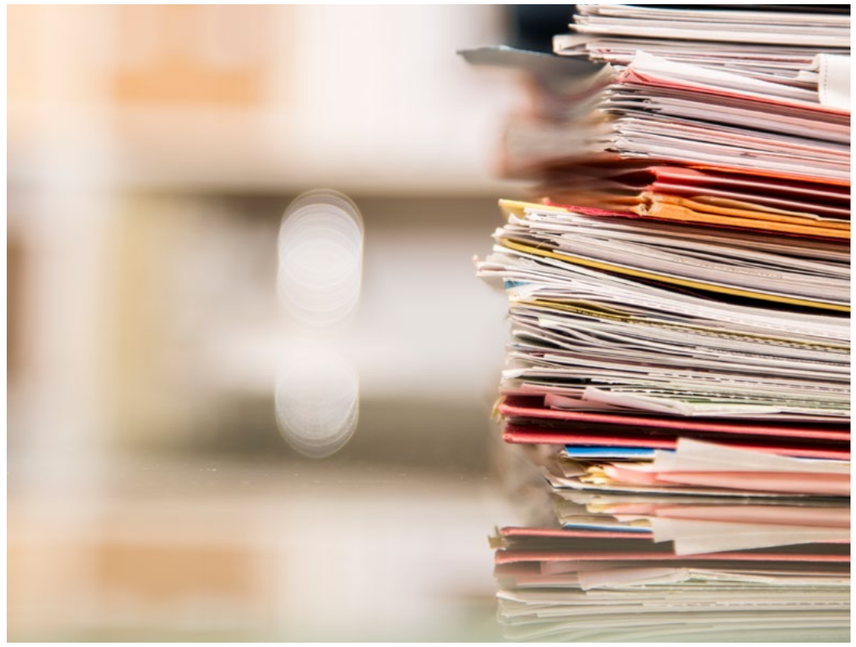
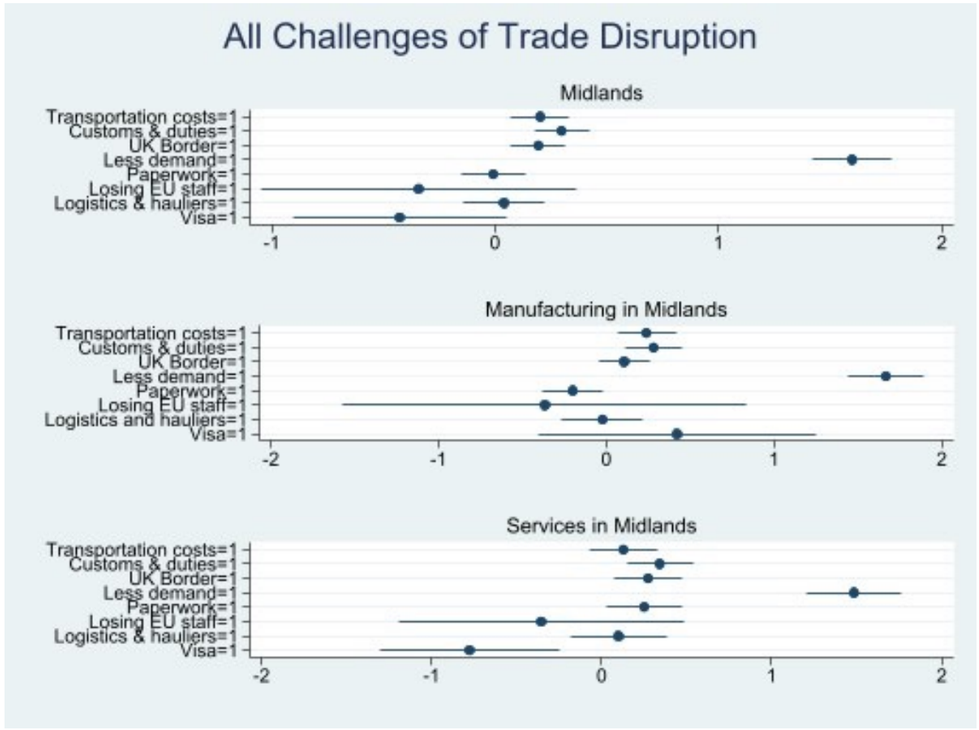


Table 7: Export disruptions of Midlands firms by Sectors: Manufacturing and Services

	Manufacturing			Services		
	1	2	3	1	2	3
VARIABLES	**Causes**	**Challenges**	**All Challenges**	**Causes**	**Challenges**	**All Challenges**
Export destination						
To EU only	0.0082	0.0215	0.0544	-0.3147*	-0.2686+	-0.3103*
	(0.1156)	(0.1185)	(0.1207)	(0.1357)	(0.1385)	(0.1393)
To both EU and non-EU	-0.0552	-0.1160	-0.0880	-0.3435**	-0.3265*	-0.3426**
	(0.1101)	(0.1141)	(0.1166)	(0.1274)	(0.1275)	(0.1306)
Main cause of export challenge:						
COVID	0.9410***			1.1443***		
	(0.1594)			(0.1865)		
Brexit	0.1683+			0.8276***		
	(0.0903)			(0.1148)		
COVID & Brexit	0.6014***			1.0180***		
	(0.0992)			(0.1321)		
Others	0.5630**			1.1468***		
	(0.2041)			(0.2206)		
Experienced exporting challenges in:						
Change in transportation costs		0.1885*	0.2394**		0.1974*	0.1275
		(0.0834)	(0.0883)		(0.1007)	(0.1025)
Customs duties or levies		0.2265**	0.2812***		0.3967***	0.3428***
		(0.0820)	(0.0849)		(0.0946)	(0.0995)
Disruption at UK borders		0.0726	0.1074		0.2582**	0.2730**
		(0.0773)	(0.0792)		(0.0972)	(0.1014)
Reduced demand for products and services		1.6158***	1.6672***		1.4656***	1.4854***
		(0.1064)	(0.1160)		(0.1365)	(0.1410)
Additional paperwork			-0.1995*			0.2502*
			(0.0913)			(0.1146)
Basing some staff in an EU member state to work			-0.3648			-0.3545
			(0.6145)			(0.4265)
Lack of hauliers to transport goods or lack of logistics			-0.0232			0.1001
			(0.1232)			(0.1427)
Work permit or visa restrictions			0.4230			-0.7763**
Firm characteristics						
Labour productivity	-0.0949	-0.0392	-0.0409	-0.1223+	-0.1466*	-0.1561*
	(0.0788)	(0.0805)	(0.0818)	(0.0718)	(0.0661)	(0.0671)
Firm size	0.1087*	0.1437**	0.1508**	0.0176	0.0221	0.0336
	(0.0489)	(0.0533)	(0.0551)	(0.0442)	(0.0458)	(0.0469)
Firm age	0.0062	0.0030	0.0031	-0.0011	0.0017	0.0003
	(0.0040)	(0.0041)	(0.0042)	(0.0049)	(0.0051)	(0.0052)
Subregion Dummies						
West Midlands	-0.0305	-0.0066	0.0051	0.1516	0.1894	0.2074+
	(0.0967)	(0.0991)	(0.1020)	(0.1157)	(0.1202)	(0.1234)
Constant	-0.4175	-0.7637	-0.8233	0.1368	0.3536	0.3978
	(0.4885)	(0.4951)	(0.5119)	(0.4843)	(0.4598)	(0.4670)
Observations	5,069	4,866	4,677	4,045	3,894	3,727

Note: The dependent variable is ***Export Decline***. It takes value 1 if Export Status is Stopped or Declined, 0 otherwise.
Robust standard errors in parentheses *** p<0.001, ** p<0.01, * p<0.05, + p<0.1.



Note: The figure shows the point estimate (dots) and the standard errors (lines) of the estimates from Table 5 and Table 7, with the horizontal line being the magnitude of coefficients. The long lines in general indicate large variance of the point estimates, hence they are statistically insignificant.

Firm Heterogeneity

Are firms of different sizes more prone to export disruption? We explore whether the reported effects in Table 8 differ for firms of different sizes. Specifically, we examine if firm size moderates the impacts of export challenges on export disruptions.

In the interactions with firm size, COVID and the combination of COVID and Brexit remain significant challenges that generate trade disruptions, but we did not find that heterogeneity in firm size significantly changes the likelihood of these factors causing trade disruption. Likewise, most of the interaction terms between export challenges and firm size are not statistically significant, offering no evidence that the challenges might have dissimilar effects across the size distribution of firms. The only exception is that firm size seems to have a moderating effect on the effect of "the lack of hauliers and/or logistic equipment to transport goods".

The positive and significant interaction terms show that larger firms that also lack strong logistics experience more export decline compared to the smaller sized firms, suggesting that large firms might have been more impacted by transportation and logistics disruptions in this period.

Table 8: Export disruptions of Midlands exporter firms

	1	2	3
VARIABLES	**Causes**	**Challenges**	**All Challenges**
Export destination			
To EU only	-0.1290	-0.1013	-0.0973
	(0.0873)	(0.0893)	(0.0906)
To both EU and non-EU	-0.1777*	-0.1956*	-0.1898*
	(0.0823)	(0.0845)	(0.0863)
Main cause of export challenge:			
COVID	0.8073*		
	(0.3492)		
Brexit	0.1173		
	(0.2472)		
COVID & Brexit	0.4674+		
	(0.2722)		
Others	0.0666		
	(0.5500)		
Experienced exporting challenges in:			
Change in transportation costs		0.1583	0.2997
		(0.2141)	(0.2278)
Customs duties or levies		0.0031	0.1016
		(0.2245)	(0.2392)
Disruption at UK borders		-0.1229	-0.0620
		(0.2233)	(0.2397)
Reduced demand for products and services		1.2955***	1.2244***
		(0.3023)	(0.3272)
Additional paperwork			-0.2573
			(0.2128)
Basing some staff in an EU member state to work			-0.5214
			(0.3755)
Lack of hauliers to transport goods or lack of logistics			-0.8924*
			(0.3486)
Work permit or visa restrictions			0.2266
			(0.8079)
Interactions with Firm Size			
COVID * Firm size	0.0627		
	(0.0756)		
Brexit * Firm size	0.0711		
	(0.0528)		
COVID & Brexit * Firm size	0.0706		
	(0.0582)		
Other * Firm size	0.1664		
	(0.1240)		
Change in transportation costs * Firm size		0.0061	-0.0227
		(0.0460)	(0.0496)
Customs duties or levies* Firm Size		0.0634	0.0444
		(0.0488)	(0.0522)
Disruption at UK borders * Firm Size		0.0641	0.0569
		(0.0472)	(0.0506)
Reduced demand for products and services* Firms Size		0.0623	0.0864
		(0.0709)	(0.0781)
Additional paperwork* Firms Size			0.0538
			(0.0467)

Cont. on next page

	1	2	3
VARIABLES	**Causes**	**Challenges**	**All Challenges**
Export destination			
Basing some staff in an EU member state to work * Firm Size			0.0317 (0.0272)
Lack of hauliers/ logistics to transport goods* Firm Size			0.1996** (0.0719)
Work permit or visa restrictions * Firm Size			-0.1456 (0.1721)
Firm characteristics			
Labour productivity	-0.0945+ (0.0517)	-0.0801 (0.0505)	-0.0878+ (0.0517)
Firm size	-0.0096 (0.0450)	0.0259 (0.0423)	-0.0040 (0.0463)
Firm age	0.0023 (0.0030)	0.0012 (0.0031)	0.0011 (0.0032)
Subregion Dummies			
West Midlands	0.0675 (0.0742)	0.0999 (0.0763)	0.1119 (0.0789)
Constant	0.0554 (0.5474)	0.0738 (0.4815)	0.2435 (0.4934)
Observations	9,443	9,081	8,712

Note: The dependent variable is Export Decline. It takes value 1 if Export Status is Stopped or Declined, 0 otherwise. Robust standard errors in parentheses *** p<0.001, ** p<0.01, * p<0.05, + p<0.1.

Regional Comparison

To provide a comparison of the experience of Midlands regions against those of the other regions, we repeated the analyses but used firms from the Midlands' peer regions. Table 9 reports the results. There are major similarities in our findings across regions, which shows the strength of the model for capturing the commonalities of firms' experience across space. Reduced demand for goods and services, and the imposition of customs duties or levies are, for each region, the two main challenges that significantly increase the possibility of export disruptions.

There were variations between UK regions. The challenge of rising transportation costs increases the likelihood of trade decline most significantly for firms in the Midlands and the North of England. This could be explained by the heavy reliance on transportation for the goods exported from these regions.

Additional paperwork significantly increased the probability of export decline in the North, South and East, while the need for work permits and visa restrictions ws one of the causes of disruption for the London area but it did not seem to be a major issue for the Midlands.

As in much else, London stands out as a clear outlier. While the region was not affected by most of the challenges that impacted other regions, the export disruption to London firms was driven by people-related challenges: work permits or visa restrictions.

Table 9: Export disruptions of five regions

VARIABLES	Midlands	North	South	East	London
Export destination					
To EU only	-0.1150 (0.0912)	-0.2643** (0.0805)	-0.1605* (0.0799)	-0.5676*** (0.1249)	-0.2205+ (0.1205)
To both EU and non-EU	-0.2054* (0.0868)	-0.3428*** (0.0780)	-0.2105** (0.0762)	-0.5557*** (0.1132)	-0.2510** (0.0928)
Experienced exporting challenges in:					
Change in transportation costs	0.2012** (0.0680)	0.1503** (0.0561)	0.1044+ (0.0557)	0.1429+ (0.0857)	0.1595 (0.1009)
Customs duties or levies	0.2985*** (0.0635)	0.1431* (0.0583)	0.2143*** (0.0595)	0.3637*** (0.0851)	0.1562+ (0.0945)
Disruption at UK borders	0.1936** (0.0624)	0.1951** (0.0619)	0.1285+ (0.0668)	0.2191* (0.0982)	0.1385 (0.1137)
Reduced demand for products and services	1.6000*** (0.0903)	1.7607*** (0.1110)	1.6106*** (0.0817)	1.8681*** (0.1335)	1.9620*** (0.1175)
Additional paperwork	-0.0084 (0.0727)	0.1977** (0.0612)	0.2741*** (0.0649)	0.3021** (0.0938)	0.1115 (0.0977)
Basing some staff in an EU member state to work	-0.3414 (0.3593)	0.5986 (0.3928)	0.4800+ (0.2545)	-0.4235 (0.5459)	0.0818 (0.3706)
Lack of hauliers to transport goods or lack of logistics	0.0391 (0.0928)	0.2813** (0.0866)	0.0959 (0.0893)	0.1466 (0.1411)	-0.0735 (0.1706)
Work permit or visa restrictions	-0.4265+ (0.2434)	-0.4712+ (0.2804)	-0.0312 (0.2126)	0.4399 (0.2910)	0.4670* (0.1897)
Firm characteristics					
Labour productivity	-0.0921+ (0.0515)	-0.0668 (0.0431)	-0.0098 (0.0355)	-0.0444 (0.0592)	-0.1156** (0.0373)
Firm size	0.0743* (0.0349)	-0.0808** (0.0287)	-0.0574* (0.0270)	-0.0815+ (0.0472)	-0.0061 (0.0351)
Firm age	0.0010 (0.0032)	0.0062* (0.0028)	0.0062* (0.0029)	0.0041 (0.0046)	0.0041 (0.0037)
Subregion Dummies					
West Midlands	0.1072 (0.0787)				
North West		0.0600 (0.1065)			
Yorkshire &Humbler		0.0281 (0.1090)			
South West			-0.0380 (0.0715)		
Constant	-0.1104 (0.4694)	-0.8002+ (0.4414)	-1.1281*** (0.2714)	-0.3985 (0.7580)	0.8029* (0.3520)
Observations	8,712	10,757	12,170	4,749	7,644

Robust standard errors in parentheses *** p<0.001, ** p<0.01, * p<0.05, + p<0.1.
Note: The table reports the Probit model estimation of the dependent variable Y: export decline=1 if export is declining or stopped in the last two weeks (or month). *** p<0.001, ** p<0.01, * p<0.05, + p<0.10.

6. Qualitative evidence about Midlands firms' experience

In addition to the quantitative evidence gathered above, we carried out additional qualitative analysis to gain a deeper understanding of the experiences of Midlands firms. This will provide further insight into the circumstances in which former exporters either stopped exporting or significantly reduced exporting activity.

This allows us to identify additional factors that impacted on the firms' exporting decisions but which BICS data could not provide. In addition, it offers an opportunity to understand the mindsets of business owners and managers when they are formulating and adjusting their internationalisation strategies. Qualitative data collection allows us to analyse interviews to search for similarities or differences in views. We also wanted to identify what, if any, support would be useful to firms if they were to consider more importing/exporting in the future. We could also probe into the specifics of the desired support, which can help shape policy recommendations.

To this end, we identified nine businesses located in the West Midlands with whom we could carry out extended interviews. Interviewee companies were selected for meeting the criteria of disruption of exports and/or imports during the identified time frame. We wanted to collate data based on the 'lived' experiences of the businesses and to see whether there were issues other than the big four (Brexit, COVID, the Ukraine war, and costs of international trade) that had impacted on their strategic decisions to cease or decrease their import/export activity. The companies, all located in West Midlands, agreed to be interviewed on a voluntary basis. Apart from one large multi-national business, the remainder were within the scope of SMEs. Seven companies imported, while the other three imported and exported. These businesses operate in the sectors of Engineering and parts, Furniture, packaging, Timber, IT, Machinery and equipment, and Creative industries, having annual turnovers that ranged from £100,000 to over £2 billion.

Interviews revealed that their challenges were those highlighted in sections 2 and 5 of this report. All businesses have been affected by Brexit, COVID, "other", and the Ukraine conflict in some way. These challenges have affected the business's overall strategy and/or pricing, which has directly increased costs to the customer. Some increases related to import/export taxes, logistics, transportation, raw materials, and the necessity of supporting more flexible working by employees who wanted to continue with some form of home-working post COVID.

All businesses cited an increase in paperwork related to importing and exporting goods, and their lead times for transporting and receiving goods have increased. All businesses, but particularly SMEs, felt there had been a shift in strategic planning so that the focus was more on the short term and having to respond to changes in the environment and economy.

Business preparedness for change

Larger organisations found that they had a long lead time in which to prepare for Brexit. Therefore, aside from the increased paperwork and levies, they experienced a reasonably smooth transition. When these businesses operated across Europe pre-Brexit, they set up sites within the EU so they could trade EU-to-EU as opposed to UK-to-EU. Smaller businesses have had to absorb the increased exporting costs, which has increased their running costs and reduced profitability. Three companies have chosen to use agents to manage the process with two smaller companies buying software to manage the process in-house.

Business-to-business organisations reported reasonable stability or even an increase in trade over the period 2019-21. Factors cited as beneficial included an increase in online shopping, an increase in supply chain security, and being able to pick up referrals or contracts from businesses that did not trade overseas or had ceased to do so. Businesses that had a large amount of stock available at the start of the pandemic fared better as they did not have the same logistic issues and could charge premium prices for items in short supply. Two companies that traded with Russia have since ceased to do so because of the Ukraine conflict, and they have had to source raw materials from elsewhere.

One business expressed the view that some companies around the West Midlands had scaled back production during COVID, and that service companies had panicked a little by deciding that they could not service customers. Some of these companies probably did not self-identify as key suppliers, so they downscaled activities. Consequently, such firms lost business-to-business customers and found it difficult to win them back. Former customers have found UK manufacturers in other regions, or they have decided to trade in China/Far East if that proved cheaper.

Corporate EU strategy

As firms now operate under an UK-EU trade relationship that is defined by the TCA, it is crucial that those who trade with the EU have an appropriate corporate EU strategy. Of the businesses we interviewed, the more mature businesses (i.e., those that have been trading for 10+ years) seem to have had more robust crisis/risk strategies, in which funds were set aside to allow them to weather economic difficulties. Larger businesses that imported/exported to European destinations considered that the long lead time to Brexit allowed a change in their trading strategy. Some moved to a different country while the remainder set up hubs in Europe to offer EU-to-EU trading. In contrast, the interviewees who had not foreseen the economic downturn or the global recession have seen their importing/exporting hit hard.

Diversification and trade diversion might also be part of an effective strategy for coping with Brexit. Some interviewees expressed the hope that HRMC would be streamlining the import/export paperwork so that the system was more efficient, and that the costs of importing and exporting to the EU would thus reduce. Indeed, at least four of the businesses point out that if this were not to happen, they would, in the long term, have to look further afield for their products and/or raw materials.

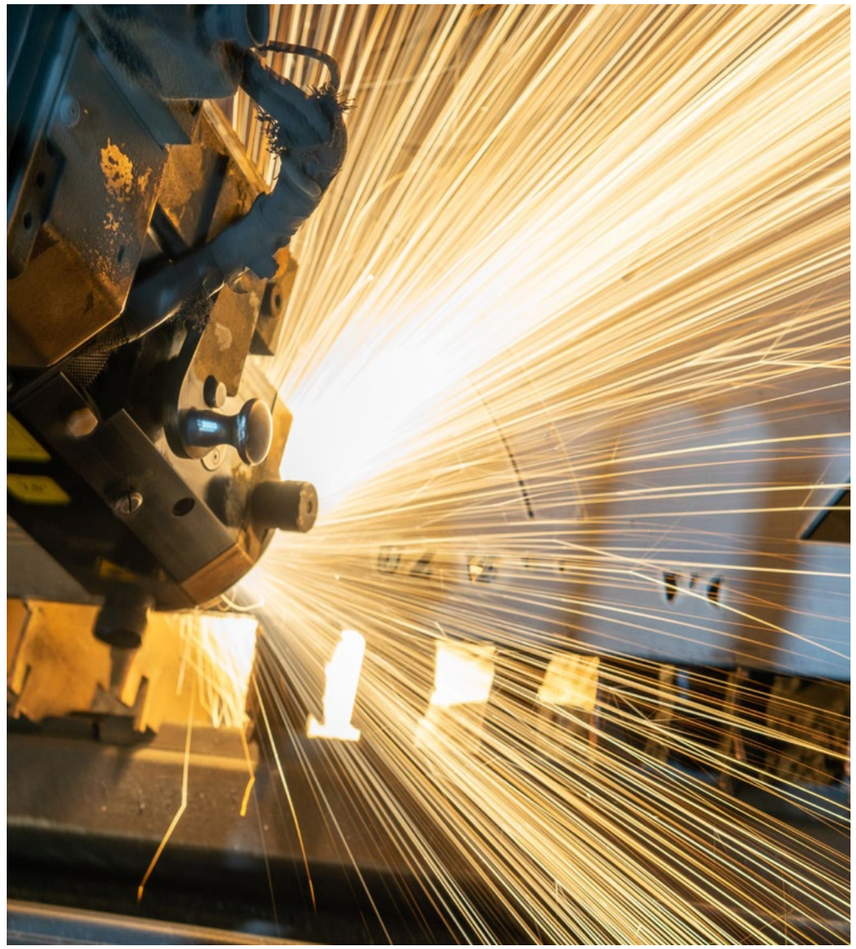
New ways of working

Managing and adapting to new ways of working has been a common challenge for firms. Some firms have found that a number of their employees did not return to the workplace once the COVID-19 restrictions had been lifted. In all cases, the businesses felt that this had a negative effect on their business or their relationships with other businesses, given that the speed of communications and transactions had been reduced (the previous response rate of 12-24 hours was now generally 48-72 hours).

Public support

All businesses in this sample had taken advantage of COVID-related government support schemes but they were less aware of any current or future offers of government support related to trade. One business felt that over the past couple of years, there has been a government strategy to focus on investments in the North as part of the government's levelling up campaigns. That CEO was worried that perhaps the West Midlands was being overlooked. Another felt that businesses were now going elsewhere to source products and services that they had previously obtained from the West Midlands, commenting that given the increases in manufacturing and general labour costs in the West Midlands and UK in general, "sourcing from other countries helps businesses keep their rising costs down".

It was also noted that UK businesses seem to be offering a reduced level of support to their clients. The trend for international companies to have sites in the UK means that they are able to offer faster, cheaper services with better ongoing support.



7. Discussion

By combining evidence from aggregate statistics at national, regional, and sub-regional levels with empirical evidence from the ONS BIC surveys, and qualitative evidence from interviews with firms, we provide a comprehensive picture of the state and reality of the Midlands regions' international trade during the period 2019 Q3 to 2022 Q2.

Overall, the Midlands suffered heavy losses in exports during the crisis period of 2020-2022. By mid-2022, its export performance was weaker than it had been in 2019. It was exporting less in value than it had during the pre-COVID and pre-Brexit period, and it was contributing less to the UK's total exports than it had previously done.

While most regions have been afflicted by the COVID pandemic and the UK's EU Exit during 2020 and 2021, the Midlands have been disproportionally impacted and we see the attendant consequences in a regional landscape characterised by large trade contraction and slow recovery. That trade contraction was more serious for non-EU markets than for EU markets, and most pronounced in the Machinery and Transport equipment sector. The two regions show varied rates of recovery. While the East Midlands showed signs of bouncing back in 2022, the West Midlands has not reach that stage yet. The challenges experienced were likely driven by a confluence of factors including, but not limited to, the UK's EU exit. The largest export reduction in Machinery and Transport equipment reflects the importance of the Advanced Manufacturing and Engineering sectors to the region, and the significant challenges experienced by exporters in the sector following the dual shocks of COVID and Brexit. Our evidence shows that full recovery remains elusive and suggests the need to investigate more deeply the reasons behind the weak demand and trade decline of the sector.

Globally, COVID, Brexit and the accelerating pace of net zero progress have sped up the shift towards battery power. The forthcoming age of electrification threatens the UK's automotive industry (The Economist, 2023) and has profound implications for regions like the Midlands. According to the Society of Motor Manufacturers and Traders, the UK fell from 13th in the car making league table in 2016 to 18th five years later in 2021. In 2022, the situation did not improve; indeed, the overall production levels of British factories have made 2022 the worst year since 1956. This might be an indicator of a general trend that will be more lasting than a short-term setback. Clearly, it is now crucial that policymaking is forward-looking and prepares for the worst-case scenario; otherwise the possibly perpetual decline of some of the region's key sectors might have devastating implications on jobs, growth, and prosperity.

In terms of the services trade, what we know from the aggregate statistics is limited due to data availability (up to 2020). It was clear that the pandemic disruption was severe in the Midlands, given that the region's export values dropped by nearly a quarter to make it the worst hit region in the UK. Fortunately, Birmingham, as the region's main services hub, showed resilience outside of the EU markets, while Nottingham City, South Nottinghamshire, and Walsall have shown growth during the pandemic period. These findings need to be followed up as soon as more recent data become available.

Firm export challenges

Drawing on evidence from BICS, our empirical analysis offers a number of insights about factors that might explain the significant trade disruptions experienced by Midlands regions during January 2021 to September 2022.

First and foremost, **reduced demand** for products and services appears to be the most important reason for the export decline and disruption experienced by Midlands firms. Reduced demand for exports is in itself informative for producers in that it is concrete feedback from the market.

However, it remains unclear why demand has reduced. In general, the demand for exports is influenced by a variety of economic, social, and political factors. The economics literature on trade elasticities advises that a key factor driving changes in export demand could be relative price, which is the price of the 'home' good in the foreign market relative to the price of the exported good in the overseas market. Other factors include product quality or innovation, consumer preferences, availability of substitutes, and trade policies, as well as macroeconomic conditions and foreign income (Feenstra, 2018). Of these many variables, some are particularly pertinent to the West Midlands.

Inflation in the costs of producing exported goods increases their relative price and reduces the competitiveness of the products in the overseas market. Since January 2021, the persistent depreciation of sterling has meant that many firms have found it prohibitively expensive to import the goods and services they rely upon to produce goods and services.[17]

During this period, the soaring energy price and cost-push inflation have forced up wages and have also caused the costs of energy and production materials to increase sharply. Firms would have been pressurised to increase price, which means that their products and services become less competitive. Depending on how substitutable their products and service are, they are likely to lose customers. Many firms might have maintained the price contractually or voluntarily, in which case they were exporting with thinner profit margins.

In the Greater Birmingham British Chamber of Commerce's (GBBCC) survey on exporter sentiments in 2022 Q1, more than one in two business organisations in the region reported experiencing pressures to increase their prices during the period. That figure is even higher for manufacturers, with price pressures being mostly attributed to raw material costs. Price pressure heated up during the second quarter of 2022, when inflation reached a 40-year high of 9.4%. Rising costs, persistent uncertainty, and geopolitical threats weighed on businesses, dwindling business confidence, and this could have directly dampened investment and trade. These suppositions are entirely consistent with the findings of the FSA and CBI surveys discussed in section 2.3.

Moreover, exporters have had to meet additional trade costs, imposed by the need to comply with new rules and procedures, the safety and security certificates that must accompany consignments' customs documentation, additional paperwork, and hiring and training staff or agents to deal with the administrative burdens caused by the TCA. Again, firms will have either raised their prices or absorbed the additional costs. In either case, their competitiveness is harmed.

Increased **trade barriers and frictions** following implementation of the TCA at the end of the Brexit transition have given rise to trading disruptions during the examined period. Most notable of these are the increased customs duties and levies and the disruption at borders. According to the British Chambers of Commerce, evidential easements on proof of origin through certain simplified documents ceased on 31 December 2021. Firms began to be asked by national customs authorities for fuller documentation to prove that their goods satisfied the product-specific rules of origin necessary for qualifying for zero-tariff treatment. Firms that could not prove the origin of their goods must pay duties.[18] Our results imply that while disruptions at borders may subside over time, the customs duties and levies are likely to stay.

Hence, this type of challenge will remain for the foreseeable future unless there are significant changes to the EU-UK trading relationship.

The barriers can differ between manufacturing and services. While manufacturing sectors are more affected by increases in transportation costs, traders in the services sectors are more significantly affected by "additional paperwork". Much of the increased friction at the border and the additional paperwork reflect the real challenges presented by trade barriers that have been newly erected by the implementation of the TCA for the products and services that are prone to non-tariff measures (Du and Shepotylo, 2022) or services restrictiveness.

The additional paperwork burden has been reported widely. For instance, the GBBCC reported a sharp increase in the issuance of trade documentation in the GBBCC International Trade Index 2022: "The total number of documents issued in Q1 2022 increased by 12% compared to the previous quarter to 6407, as well as an 11% increase in the number of businesses using documentation services." There is even higher level of increase in documentation issued to businesses trading with EU member states during this period.

The trade-reducing effect of increased non-tariff measures is still more severe in for services where 'technical' measures are applied (Du and Shepotylo, 2022). These include regulations, standards, and testing and certification, and they are primarily related to sanitary and phytosanitary (SPS) and Technical Barriers to Trade (TBT) measures. Given their areas of specialisation, the Midlands traders are more affected by TBT measures. Higher administrative costs and regulatory uncertainty have caused Machinery & Transport Equipment to experience a deep decline in UK-EU trade since 2021, despite having had a grace period for the rules of origin for many of the sector's goods.[19] Bailey and Rajic (2022) provide more detail about the adverse impact of TCA on the automotive industry.

This constitutes a real concern and an obvious area for policy development, given that these underlying shifts threaten Midlands firms' strong integration in Europe's supply chains in an age when businesses operate the just-in-time model to maintain high efficiency and low profit margins. If UK businesses can no longer maintain their low cost and high efficiency advantages, the potential for disintegration becomes more than likely. Recent decisions to move future investment away from the UK by BMW and Arrival highlight a heightened risk for the UK because these departures are concrete examples of the threat to the job and value creation potential of the manufacturing sectors.[20]

[17]See the movement of currency and inflation time series at https://www.economicshelp.org/blog/170996/economics/the-effect-of-fall-in-pound-sterling/.

[18]See an excellent review of the export challenges UK firms experienced since Brexit in "The Trade and Cooperation Agreement: Two Years On, Proposals for Reform by UK Business" by British Chambers of Commerce, https://www.britishchambers.org.uk/media/get/The%20Trade%20and%20Cooperation%20Agreement%20-%20Two%20Years%20On.pdf.

[19]See statistics provided by https://group.atradius.com/publications/economic-research/brexit-disrupts-UK-EU-trade-june-2021.html.

[20]See https://arrival.com/uk/en/news/arrival-announces-high-voltage-battery-module-assembly-plant-in-charlotte-nc. Also see (Bailey, 2022)

These sectors have historically tended to provide high paid jobs, many of which are in geographic areas of high discontent (Billing et al, 2019).

A firm's internationalisation strategy matters in times of uncertainty and disruption. Overall, exporting to both the EU and the extra-EU reduces risks, especially for services exporters. We find that exporting to non-EU only is the riskiest option because these firms are more likely to experience a higher degree of export disruption and stop exporting, holding other factors constant. Geographic export diversification is known to bring benefits, such as economies of scale (Hitt, Hoskisson, & Hicheon, 1997), economies of scope, and synergies in different functional areas (Capron and Hulland, 1999, Hill and Hoskisson, 1987). The diversification of market reach not only reduces risks (Palich, Cardinal, & Miller, 2000), it also offers real options for future market expansion (Allen and Pantzalis, 1996).

Apart from product and services market diversification, we find that basing staff in EU member states helps Midlands firms to reduce the risks of stopping exporting. This is consistent with anecdotal evidence that UK firms consider relocating to EU countries to be a reasonable response to the export challenges they have encountered since the beginning of 2021, which include returned goods, additional and considerably higher level of taxes and duties, and additional documentation and other costs. By setting up warehouses, distribution centres, or sometimes even a significant part of their business operations in the EU, UK firms can continue to export there.[21] Given that the EU represents the UK's main export market and that it is where their major clients are located, it is not surprising that UK firms find that setting up EU subsidiaries offers a working solution to the newly erected trade barriers. Such removals are evidence that business will find a way, but the home countries of these pragmatic firms will cease to benefit from the previously provided employment, tax revenues, and future growth dividends.

Moving on to firm **heterogeneity and perception**, our analysis shows that in this sample, larger firms are less likely to drop out of export market than the smaller firms, but they are more likely to encounter export decline, and are more likely to be affected by shortages and disruptions to logistics. Moreover, we find that being productive helps. More productive firms in the services sectors are, on average, less likely to experience export disruptions, which gives them resilience in hard times. This shows that the fundamentals of exporting capability originate with productivity, and that it is that same capability that will help firms overcome export challenges and disruptions.

Overall, we do not find a strong firm heterogeneity effect in our empirical modelling. This may imply that the differences between firms of different sizes, ages, and productivity levels do not statistically separate the experiences of export challenges in this empirical setting. This result could also suggest that the empirical approach of linking annual data of firm characteristics with higher frequency series such as the BICS may not be sufficient for modelling firm heterogeneity. Thus, the interpretation of firm heterogeneity should be carried out with caution.

A firm's own perception about the main causes of export disruption matters. Quite consistently, the firm's perception that "COVID only" has been the main cause of export disruption is associated with a higher probability of export decline or with a larger degree of export disruption. This is followed by "Others", "COVID & Brexit", and "Brexit only". This result suggests that the during the examined period, COVID pandemic factors were the most disruptive for Midlands' traders. Splitting sectors, Brexit becomes the more important perceived cause of export disruption among services firms, though not for manufacturing firms. Nevertheless, it is noteworthy that perception is inherently subjective, and the factor that firms identify as the cause of their export disruption might not be the actual main cause. One must be cautious when interpreting this finding.

Furthermore, the factors driving firm's export disruptions are similar across the West Midlands and the East Midlands. While the Midlands share most similarities with the North, they experience the same challenges as other regions in the UK. Transportation costs and disruption at borders are more pronounced risks for Midlands and the North, largely due to the manufacturing specialisation. But the most important challenges, reduced demand and customs duties and levies, are common to all regions.

Our qualitative evidence shows that in addition to the above factors, **business preparedness** for change makes a discernible difference to a firm's export fortunes. This is consistent with recent evidence drawing on the British Chambers of Commerce Trade Survey of 395 UK exporters conducted during July and August 2022. That analysis reveals that business confidence and taking steps to prepare for change really do matter to export performance (Du, 2023). Business confidence and the ability to prepare for change are interlinked. Preparedness requires the mentality to expect and adapt to changes, but also depends on the ability to sense and forecast changes, to integrate, build, and reconfigure internal and external resources to address and shape rapidly evolving business environments. Preparedness is a synonym for a firm's dynamic capability.

For policymakers, this highlights not only the importance of reducing information frictions but also the imperative for training and education to improve management capabilities. Given that business confidence is partially formed from the facts relating to a firm's operating environment, coupled with the rational expectations that come from how the picture of the future is presented (e.g., by government/media), it is crucial that accurate facts are communicated effectively to firms. Hence, business-facing government units and organisations like Midlands Engine can play an important role.

For businesses, our findings emphasise the need to improve firms' capabilities to assess and predict their business conditions and to take action to prepare for changes in an uncertain environment. This is especially the case for small businesses. The ability to predict business conditions accurately and prepare for uncertainty accordingly is the bedrock of business confidence, which goes on to drive decisions about resource allocation and future investment. Firms that are in the early stages of entrepreneurship and small businesses that are constrained by resources are particularly vulnerable, which clearly identifies the areas in which training and intervention can make a difference.

[21] There are a lot of reports sharing similar stories. See for example https://www.theneweuropean.co.uk/brexit-news-uk-companies-relocate-eu-brexit-7872324/.

Limitations

While firms surveyed in the BICS are designed to be nationally representative, they may not be representative at regional level. Interpretations of the seen effects should be made with caution. A key variable (the main cause of a firm's exporting challenges) is contingent upon the firm's self-reflection on four possible factors. The estimates of the effect of the variables should not be definitively interpreted as the effect of Brexit, or COVID or both. Rather they reveal interesting perspectives from the experience of the owners, entrepreneurs, and managers of Midlands firms. The true effects of the shocks are expected to be larger than this analysis suggests.

What else do we need to know?

This project is the first effort to conduct detailed analysis of the region's firms' export challenges. While we provide a comprehensive set of stylised facts and analysis on the state and challenges of the Midlands' exports, there are important questions we could not address here, but should address in the near future.

First, what policies and measures might be helpful to bring firms that have recently exited the international markets back to exporting? At any given point in time, some firms would stop exporting temporarily, some would quit exporting completely, and others would be entering or re-entering export market. Firms that re-enter the export market after withdrawing (i.e., intermittent exporters) are commonplace even in normal times (Bernini, Du, & Love, 2016). They have assumed greater significance in recent years as the COVID-19 pandemic severely disrupted global trade and pushed many firms out of the international markets (Martins, Farinha, & Ferreira, 2021). Building on this study's findings, further analysis is required to understand more deeply how a firm's export decisions (including the decision to stop exporting) are made, taking into account macro-, firm- and individual manager and entrepreneurial perspectives.

In this study, we build on our previous works that identify the impact of macroeconomic and trade policy shocks (Du and Shepotylo, 2022; Du et al., 2022) by highlighting firm-level factors that explain export disruptions. We touch upon managerial and entrepreneurial considerations in the decision-making process through qualitative analysis from interviews with businesses. But we could not say we have got to the bottom of any area. More work is necessary to understand how individual entrepreneurs and managers' perception, ambition, risk attitude, and network influence might lead to different export decisions and commitment, and ultimately export performance. This is a key area of research for our follow-up work.

Related to this is an acute need to understand the significant reduction in the number of export varieties in the UK firms' basket of exported goods (Du and Shepotylo, 2023). Our previous work finds that the UK has experienced a significant contraction in its trading capacity in terms of the variety of goods being exported to the EU due to the TCA. An estimated loss of 20-42% of product varieties over the 15 months since January 2021, combined with an increased concentration of export values to fewer products, signifies some serious long-term concerns about the UK's future exporting and productivity (Du, et al., 2023).

There is no specific estimate at regional level yet. We thus need to understand if the lost export varieties are due to the exited exporters and/or to the streamlining of export varieties by firms. We also need to understand the implications of this trend on a firm's competitiveness and learning opportunities through exporting, as these will impact on future productivity growth. Second, we have only scratched the surface of understanding the decline in the overseas market performance of the region's key industries. The confluence of factors that have pushed this trend is hard to completely disentangle. However, it is likely that the technological evolution hastened by the COVID pandemic is reshaping the global market structure, such that previous industrial leaders are losing competitive advantages. Together with rising trade protection and state interventionism, as well as fluid geopolitical factors, this means there is an urgent need to rethink the region's industrial policy so it can support businesses to sustain, upgrade, and recreate competitiveness. It also suggests the importance of taking precautions against the trend's negative implications: the direct and indirect impact on jobs, revenue, and industrial supply chains.

Related to this is the very important question of where the next growth areas might be in the region. This means not only investigating the products and services that have gained competitiveness globally over recent years, but also locating where growth might happen in the future. Identifying these areas is a first step to designing appropriate and timely supports to realise the growth potential through the right mix of regional strategies for promoting industrial development and investment, stimulating R&D and innovation, addressing employment skills and talent problems, and trade promotion measures.

We do not focus on the trade policy side of the discussion in this report since that is more relevant at national level.[22] However, it is important to note that the future industrial recovery and development post the EU exit will depend on improvements in the UK-EU trade relationship and cooperation. From the regional perspective, it is hugely important to curate the experiences of businesses that have encountered challenges, to identify their best practices and tested solutions, and to feed these back to UK international trade policy makers in preparation for the 2025 TCA review.

While businesses and business-facing trade advisors on the ground might feel that such efforts are unavailing, real systemic changes are only possible by engaging with the 2025 review.

[22] Some discussions on the trade policy improvements following the UK's EU exit can be seen in Du and Shepotylo (2022) and Du et al (2022).

8. Nine-point policy recommendations

Given the range of issues discussed above concerning the current status and realities of the region's trade with the EU and non-EU markets, we propose an nine-point recommendation for actions that can revive and support the exports of the region, which include recommendations focused on trade promotion, trade support, further recommendations more broadly focused on regional industrial policy, firm productivity, and competitiveness.

Market the Midlands

I. Promote the Midlands international. tradable goods and services.
The region produces goods with reputation of quality of craftsmanship and innovation and services of high quality and efficiency. More than ever, efforts are required to develop Midlands export markets and trading relationships by raising the profile of regional and regional firm strengths and emerging clusters with regards to growth markets. There is new need to discover, develop and maintain international trade links using multiple channels including home and local trade organisations, chambers of commerce, and industrial associations, through peer networks and export trade missions.

Trade support

II. Support exporters to mitigate the new trade barriers that have arisen due to the UK's EU exit.
This report has identified the following challenges that are particularly decapacitating: customs duties and levies, disruption at borders, increases in transportation costs, and additional paperwork. Large firms are more likely to have necessary resources to get advice and support from upskilling own staff, or from own networks and private sectors. Advice and grants could be offered to small businesses to reduce the financial costs and administrative burdens for businesses. The current public support, especially in-person support, is concentrated to high potential exporters.[23] New and creative ways are needed to reach out to small businesses that do not meet the threshold.

The UK provides some of the best export support services in the world. The UK Department of International Trade (now part of the Department of Business and Trade, DBT) in the Midlands has already been doing excellent work with the businesses that came forward for support. However, there is a genuine need to spread its reach to businesses that might not yet have taken initial steps towards exporting. To achieve this, it will need to mobilise a wide range of public and private trade support organisations, creating joined up efforts with the British Chambers of Commerce, Growth Hubs, UK Export Finance, and other bodies and industrial/ business associations that offer support to firms. The issues that firms encounter may not be restricted to the procedural and technical difficulties of exporting, but could be related to business models, operations, marketing and general business management. There is a compelling case for taking a joint approach to business support, offering a variety of specialisations.

III. Aid firms with export decision-making.
This is aimed at all firms, and at all stages of Internationalisation. Sharing knowledge and insights about organisational, operational, external and global factors that impact on the export decisions, as well as the benefits of exporting, would helps firms to consider exporting and prepare for the journey to successful exporting. Inform firms' decision-making regarding the feasibility of exporting, products, markets, and speed of internationalisation by providing timely and consistent macro-, sectoral, and market-specific intelligence and advice. The trade support function of the DBT already covers much of this to assisted firms. More efforts are needed to reach out a wider range of businesses.

IV. Encourage export dropouts to return to exporting.
Understand, encourage, and support firms that recently stopped exporting so they can return to exporting their goods and services. Among the firms that do not export, the firms that dropped out export market are likely the businesses that are close to the productivity threshold of exporting and already had experience of exporting. This makes them more likely to export (again) and hence good target for support. A separate trade support unit could be set up at local level to identify them and offer specific support.

V. Encourage and inspire new entry to exporting.
Each year firms enter the export market for the first time and there is evidence to suggest that Brexit uncertainty between 2017-2019 led to a reduced entry to exporting services in the UK (Du et al., 2023). New entrants make up an important segment of the UK export pipeline, and it is one that needs to grow. Given the coverage of negative news in the media about export challenges, positive stories need to be told to rekindle and inspire internationalisation aspiration and commitment from business decision makers. A joint project between the Centre for Business Prosperity and the British Chambers of Commerce will develop a new platform of business-to-business network for export support.

VI. Influence UK trade policy to improve the trade relationship with the EU.
It is hugely important to curate and feed back to UK international trade policy makers the challenges that businesses have experienced, and the best practices and tested solutions for these, in preparation for the 2025 TCA review.

Wider policy and support

VII. Reassess the global competitiveness of the region and develop foresights of paths for future growth.

With industrial partners, think tanks and academia, policy makers must develop scenario and response strategies that consider a range of possible evolutionary paths for the current global market dynamics. Three important steps are involved: (i) Reassess the existing strengths and capabilities of the industries in the region and their related sectors in the supply chains. This means not only investigating the products and services that have gained competitiveness globally over recent years, but also locating where growth might happen in the future. This can be done by analysing the product and technology trends of comparable sectors and comparative regions globally in key destination markets.

(ii) Horizon-scan and invest in new growth areas with national and global horizons. This needs to be combined with the existing capabilities of the regions – in tangible, intangible and human capital stocks and flows. Analysing region's knowledge space in what (products and services) it produces, where it innovates, who produces (i.e. labour and skills) and how it produces (clusters, local supply networks and effective supports) would generate valuable insights

[22] Some discussions on the trade policy improvements following the UK's EU exit can be seen in Du and Shepotylo (2022) and Du et al (2022).

and foresights. Identifying these areas will allow designing appropriate and timely supports to realise the growth potential through the right mix of regional strategies for promoting industrial development and investment, stimulating R&D and innovation, addressing employment skills and talent problems, and trade promotion measures.

(iii) Rethink regional industrial policy in the context of new globalisation trends. Match the areas of future growth with the areas or related areas of the region's existing strengths in terms of knowledge and skills. Develop regional strategies for upgrading and transitioning in the event that older technologies and sectors become obsolete. Devise the response strategies to transitioning including considerations of not just technology, investment, exports, but also jobs and training, and social equity.

VIII. Adhere to pro-productivity policy agenda.
Productivity is fundamental to enhancing export participation and performance and facilitating learning through exporting. Productivity agenda might have taken a backseat in the discussion of the last a few years in face of the polycrses and may still do when firms, industries and regions face imminent threats. However, it is important to ensure that productivity remains at the top of policy agenda, for its key role in achieving resilence and growth.

IX. Train, educate and inspire entrepreneurs and managers to go international.
The ambition, confidence, and ability to commit to internationalisation is not only crucial to businesses if they are to engage in exporting, these positive attributes can also improve the capacity of a firm to ride a crisis.

9. Conclusions

This study has analysed data on the Midlands regions' international trade performance during the period of 2019 Q3 to 2022 Q2. Our findings confirm the unprecedented challenges that Midlands firms have experienced in this period, and their disproportional impact on its trade performance and slow recovery.

The Midlands' loss of trade in goods was more serious in non-EU markets than in EU markets, and most pronounced in the Machinery and Transport equipment manufacturing sector. The two regions show varied rates of recovery. While the East Midlands showed signs of bouncing back in 2022, recovery in the West Midlands has been weak. The Midlands has also seen considerable trade disruption during the pandemic, losing nearly one-quarter of its export value to make it the worst hit region in the UK.

Reduced overseas demand for products and services has been the most important reason behind export decline and disruption in the Midlands. This is followed in importance by increased trade barriers and frictions following the implementation of the EU-UK Trade and Cooperation Agreement (TCA) at the end of the Brexit transition. The most notable of these barriers are the increased customs duties and levies, and the disruption at borders. Further, increases in transportation costs have negatively impacted manufacturing firms, while traders in the services sectors are more significantly affected by "additional paperwork". On the other hand, we can draw useful lessons from successful firms' internationalisation strategy and tactics. Exporting to both EU and non-EU markets reduces risks, especially for services exporters. Overcoming EU trade barriers by basing staff in EU member states helps too.

Not all firms are equally affected. The firm's internal capacity and resources matter as larger firms are less likely to stop exporting. Productive firms are more capable of mitigating serious export disruptions. In addition, business preparedness for change makes a discernible difference to export performance.

Overall, this study has laid out the stylised facts about the status of the Midlands' exports and identifies the challenges firms have experienced in recent years. It confirms that the region must re-assess its internationalisation strategy by looking beyond the traditional sources; this is a critical time for rethinking globalisation, reassessing the competitiveness of UK plc., and seeking out alternative markets and growth areas. It highlights the compelling need to continue efforts to remove the non-tariff trade barriers that hamper UK firms' capability to trade with the EU and with the rest of world, given that non-EU trade might also have been affected.

While improvements in the EU-UK trade relationship will take time, this means that now is the prime moment to develop firm capabilities and competitiveness domestically, which will help them to export when conditions are right. This will build up business confidence and the preparedness for change.

Policymaking needs to be agile in the age of fragmented globalisation. All the lessons we have learned highlight the value of timely evidence gathering and of conducting in-depth analysis of trends and shifts. This will inform knowledge creation, so that lessons may be extracted as quickly as possible from a range of sources and experiences. Those lessons will then feed into business and policy decision-making. For this purpose, Midlands Engine is well placed to take the leading role.

References

Allen, L. and Pantzalis, C., 1996. Valuation of the operating flexibility of multinational corporations. Journal of international business studies, 27, pp.633-653.

Andersson, M., & Lööf, H. (2009). Learning-by-exporting revisited: The role of intensity and persistence. The Scandinavian Journal of Economics, 111(4), 893–916.

Arkhangelsky D., Athey, S., Hirshberg D. A., Imbens G. W., and Wager S, 2021. Synthetic Difference-in-Differences. American Economic Review, 111(12):4088–4118.

Bailey David, 2022, BMW slams the breaks on electric MINI production at Oxford, UKICE, 21 Oct 2022, https://ukandeu.ac.uk/bmw-slams-the-brakes-on-electric-mini-production-at-oxford/

Bailey, D. and Rajic, I., 2022. Manufacturing after Brexit. UKICE, January 2022, https://ukandeu.ac.uk/research-papers/manufacturing-after-brexit/.

BEIS, 2022, Longitudinal Small Business Survey: panel report – UK, 2018- 2021, Official Statistics, 30 September 2022

Benito, G. R. G., & Welch, L. S. (1997). De-Internationalization. Management International Review, 37, 7–25.

Bernini, M., Du, J. and Love, J.H., 2016. Explaining intermittent exporting: Exit and conditional re-entry in export markets. Journal of International Business Studies, 47, pp.1058-1076.

Bernini, M., Du, J., & Love, J. H. (2016). Explaining intermittent exporting: Exit and conditional re-entry in export markets. Journal of International Business Studies, 47(9), 1058–1076. https://doi.org/10.1057/s41267-016-0015-2

Billing, C., McCann, P. and Ortega-Argilés, R., 2019. Interregional inequalities and UK sub-national governance responses to Brexit. Regional Studies, 53(5), pp.741-760.

Bowen, H. P., & Wiersema, M. F. (2005). Foreign-based competition and corporate diversification strategy. Strategic Management Journal, 26(12), 1153–1171. https://doi.org/10.1002/smj.499

Brown, R., Liñares-Zegarra, J., & Wilson, J. O. S. (2019). The (potential) impact of Brexit on UK SMEs: regional evidence and public policy implications. Regional Studies, 53(5), 761–770. https://doi.org/10.1080/00343404.2019.1597267

Capron, L. and Hulland, J., 1999. Redeployment of brands, sales forces, and general marketing management expertise following horizontal acquisitions: A resource-based view. Journal of marketing, 63(2), pp.41-54.

Capron, L. and Hulland, J., 1999. Redeployment of brands, sales forces, and general marketing management expertise following horizontal acquisitions: A resource-based view. Journal of marketing, 63(2), pp.41-54.

Cavusgil, T. S., & Knight, G. (2015). The born global firm: An entrepreneurial and capabilities perspective on early and rapid internationalization. Journal of International Business Studies, 46(1), 3–16. https://doi.org/10.1057/jibs.2014.62

Chen, J., Sousa, C. M. P., & He, X. (2019). Export market re-entry: Time-out period and price/quality dynamisms. Journal of World Business, 54(2), 154–168. https://doi.org/10.1016/j.jwb.2019.01.001

Cheng, H. L., & Yu, C. M. J. (2008). Institutional pressures and initiation of internationalization: Evidence from Taiwanese small- and medium-sized enterprises. International Business Review, 17(3), 331–348. https://doi.org/10.1016/j.ibusrev.2008.01.006

Crick, D. (2002). The decision to discontinue exporting: SMEs in two U.K trade sectors. Journal of Small Business Management, 40(1), 66–77. https://doi.org/10.1111/1540-627x.00040

Crick, D. (2003). The international entrepreneurial decision of UK SMEs to discontinue overseas activities: A research note reporting practices within the clothing industry eighteen months on. Journal of International Entrepreneurship, 1(4), 405–413.

Crick, D. (2004). U.K. SMEs' decision to discontinue exporting: An exploratory investigation into practices within the clothing industry. Journal of Business Venturing, 19(4), 561–587. https://doi.org/10.1016/S0883-9026(03)00032-6

Crick, J. M., Crick, D., & Chaudhry, S. (2020). Entrepreneurial marketing decision-making in rapidly internationalising and de-internationalising start-up firms. Journal of Business Research, 113(November 2018), 158–167. https://doi.org/10.1016/j.jbusres.2018.11.033

Crowley, Meredith, Oliver Exton, and Lu Han. 2019. "Renegotiation of Trade Agreements and Firm Exporting Decisions: Evidence from the Impact of Brexit on UK Exports." CEPR Discussion Paper 13446

Deng, P., & Zhang, S. (2018). Institutional quality and internationalization of emerging market firms: Focusing on Chinese SMEs. Journal of Business Research, 92(August), 279–289. https://doi.org/10.1016/j.jbusres.2018.07.014

Dhanaraj, C., & Beamish, P. W. (2003). A Resource-Based Approach to the Study of Export Performance. Journal of Small Business Management, 41(3), 242–261. https://doi.org/10.1111/1540-627X.00080

Du, Jun. and Shepotylo, Oleksandr, 2022. Brexit and Services Trade New Evidence from Synthetic Diff-in-Diff Approach. Available at SSRN 4020712.

Du, Jun, Shepotylo, Oleksandr and Yuan X, 2023, How Did the Brexit Uncertainty Impact on UK Trade in Services? Research Paper Centre for Business Prosperity

Du, Jun, 2023, Business Confidence, TCA Adaptation, and Export Performance, ERC Insight Paper, https://www.enterpriseresearch.ac.uk/wp-content/uploads/2023/02/ERC-Insight-Business-Confidence-TCA-Adaptation-and-Export-Performance-Du.pdf

Du, Jun, Satoglu Emine Beyza and Shepotylo Oleksandr, 2022, TCA, Non-tariff Measures and UK Trade, ERC Research Paper 98.

Du, Jun, Satoglu Emine Beyza and Shepotylo Oleksandr, 2023, How did Brexit affect UK trade? Contemporary Social Science, forthcoming, https://doi.org/10.1080/21582041.2023.2192043

Duarte Alonso, A., & Kok, S. (2019). Dynamic capabilities in the context of Brexit and international wine business: An exploratory two-country study. Thunderbird International Business Review, 61(2), 277–290. https://doi.org/10.1002/tie.22011

Esteve-Pérez, S., & Mañez-Castillejo, J. A. (2008). The resource-based theory of the firm and firm survival. Small Business Economics, 30(3), 231–249.

Feenstra, R. C. (2018). Advanced international trade: theory and evidence. Princeton University Press.

Financial Times (2021). "Sluggish exports: the 'worrying trend' in the UK economy." Retrieved 22/11/2022, from https://www.ft.com/content/beec0a22-dee2-4224-8881-a549d6324b86.

Fletcher, R. (2001). A holistic approach to internationalisation. International Business Review, 10(1), 25–49. https://doi.org/10.1016/S0969-5931(00)00039-1

Freeman, R., Manova, K., Prayer, T. and Sampson, T., 2022. Unravelling deep integration: UK trade in the wake of Brexit. Work. Pap., Lond. Sch. Econ., London.

Freeman, R., Manova, K., Prayer, T. and Sampson, T., 2022. Unravelling deep integration: UK trade in the wake of Brexit. Work. Pap., Lond. Sch. Econ., London.

Freeman, S., Deligonul, S., & Cavusgil, T. (2013). Strategic re-structuring by born-globals using outward and inward-oriented activity. International Marketing Review, 30(2), 156–182. https://doi.org/10.1108/02651331311314574

FSB (2021). "One in four small exporters halt EU sales, three months on from transition end, new study finds." Retrieved 22/11/2022, from https://www.fsb.org.uk/resources-page/one-in-four-small-exporters-halt-eu-sales-three-months-on-from-transition-end-new-study-finds.html.

FSB. (2021). One in four small exporters halt EU sales, three months on from transition end, new study finds. Retrieved from https://www.fsb.org.uk/resources-page/one-in-four-small-exporters-halt-eu-sales-three-months-on-from-transition-end-new-study-finds.html

Financial Times. (2021). Sluggish exports: the 'worrying trend' in the UK economy. Retrieved from https://www.ft.com/content/beec0a22-dee2-4224-8881-a549d6324b86

Financial Times . (2022). Brexit trade friction caused 15% fall in UK-EU exports in first half of 2021. Retrieved from https://www.ft.com/content/2f63ef97-8d49-47a4-accd-4fb2e7ee9a5a

Ganotakis, P., Konara, P., Kafouros, M., & Love, J. H. (2022). Taking a time-out from exporting: Implications for the likelihood of export re-entry and re-entry export performance. Journal of World Business, 57(5), 101349. https://doi.org/10.1016/j.jwb.2022.101349

Gashi, P., Hashi, I., & Pugh, G. (2014). Export behaviour of SMEs in transition countries. Small Business Economics, 42(2), 407–435. https://doi.org/10.1007/s11187-013-9487-7

Gkypali, A., Rafailidis, A., & Tsekouras, K. (2015). Innovation and export performance: do young and mature innovative firms differ? Eurasian Business Review, 5(2), 397–415. https://doi.org/10.1007/s40821-015-0030-4

GTR (2022). "UK exporter numbers decline amid post-Brexit reshoring." Global Trade Review. Retrieved 22/11/2022, from https://www.gtreview.com/news/europe/uk-exporter-numbers-decline-amid-post-brexit-reshoring/.

GTR. (2022). UK exporter numbers decline amid post-Brexit reshoring. Global Trade Review. Retrieved from https://www.gtreview.com/news/europe/uk-exporter-numbers-decline-amid-post-brexit-reshoring/

Guardian, T. (2022). Brexit led to 14% fall in UK exports to EU in 2021, trade figures say. Retrieved from https://www.theguardian.com/politics/2022/jun/30/brexit-uk-exports-fall-eu-goods-services

Hagen, B., Zucchella, A., & Ghauri, P. N. (2019). From fragile to agile: marketing as a key driver of entrepreneurial internationalization. International Marketing Review, 36(2), 260–288. https://doi.org/10.1108/IMR-01-2018-0023

Hill, C.W. and Hoskisson, R.E., 1987. Strategy and structure in the multiproduct firm. Academy of management review, 12(2), pp.331-341.

Hill, C.W. and Hoskisson, R.E., 1987. Strategy and structure in the multiproduct firm. Academy of management review, 12(2), pp.331-341.

Hitt, M.A., Hoskisson, R.E. and Kim, H., 1997. International diversification: Effects on innovation and firm performance in product-diversified firms. Academy of Management journal, 40(4), pp.767-798.

Hitt, M.A., Hoskisson, R.E. and Kim, H., 1997. International diversification: Effects on innovation and firm performance in product-diversified firms. Academy of Management journal, 40(4), pp.767-798.

Jaskiewicz, P., Block, J., Wagner, D., Carney, M., & Hansen, C. (2021). How do cross-country differences in institutional trust and trust in family explain the mixed performance effects of family management? A meta-analysis. Journal of World Business, 56(5), 101196. https://doi.org/10.1016/j.jwb.2021.101196

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