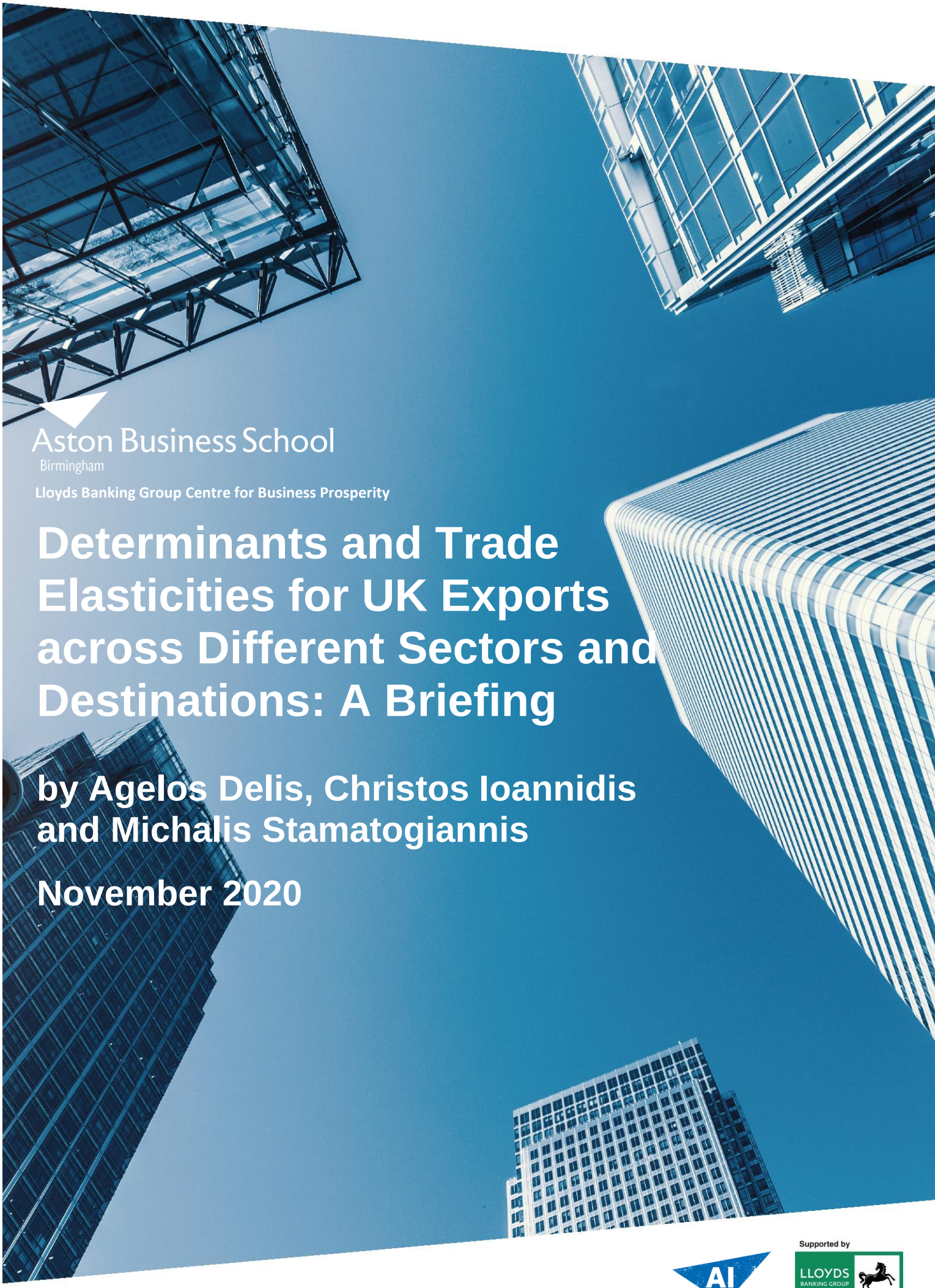

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Determinants and Trade Elasticities for UK Exports across Different Sectors and Destinations: A Briefing

by Agelos Delis, Christos Ioannidis and Michalis Stamatogiannis

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Determinants and Trade Elasticities for UK Exports across Different Sectors and Destinations: A Briefing

By Agelos Delis[1]*,

Christos Ioannidis[1],

Michalis Stamatogiannis[2],

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[1] Economics, Finance and Entrepreneurship Department, Aston Business School, Aston University;
[2] University of Liverpool Management School, University of Liverpool.

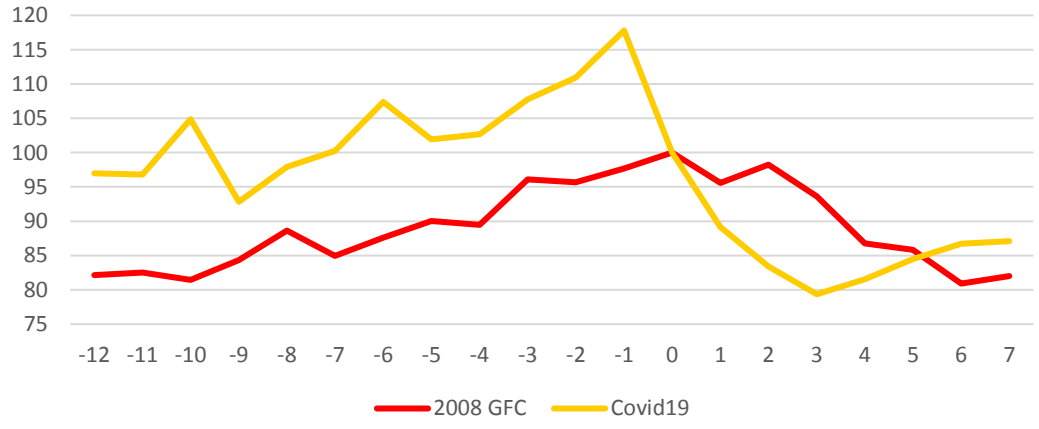
***Contacting author: Dr Agelos Delis, Email: a.delis@aston.ac.uk, Telephone: 01212043247.**

Introduction

The UK and global economies are set for a challenging last quarter of 2020 due to the Covid19 pandemic. The adverse economic effects of the first lockdown in most countries during the spring of 2020 are going to be amplified by an impending winter lockdown. Thus, the UK is entering into its second period of tight restrictions that will dramatically affect its service sector. The effect on the production of goods will be smaller but subdued domestic and foreign demand will have significant effects for British exporters in the short and long runs.

Many analysts[1] were hoping for a "V-shaped" recovery this year in terms of the UK's export performance. But from Figure 1, where we compare UK exports' reaction to the 2008 global financial crisis and the ongoing Covid19 pandemic, it appears that we are probably heading towards a 'W-shaped' recovery for UK exports in the next couple of years[2]. We believe there are three reasons for this. First, the UK is going to suffer a hit on its supply capability with the second lockdown. Second, and putting it at its most neutral, the UK is going to face turbulence as firms across the country prepare for their new environment post-Brexit. Finally, the pandemic has already increased global uncertainty and this may be exacerbated by the tight electoral outcome in the US and the legal actions being taken by the current administration.

Figure 1: UK World Total Exports reaction to Global Financial Crisis 2008 & Covid19



All these reasons, combined with the fact that the UK will start 2021 with its own independent trade policy, make it really interesting to know how the different exports of the UK react to changes in the economy, and what role is played in this by the various UK sectors and exporting destinations. In this paper, we have focused on two types of changes. The first is the real effective exchange rate (REER), which is a

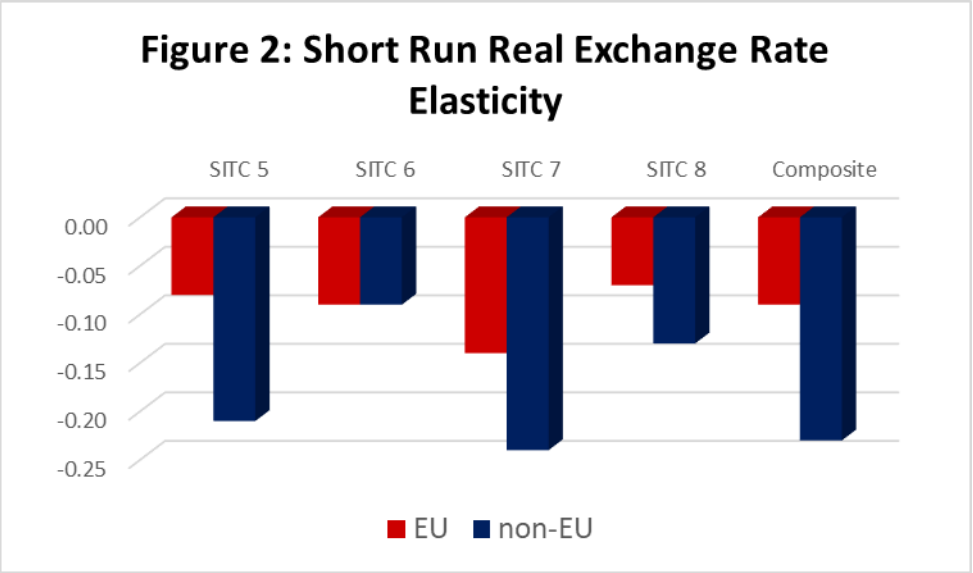
[1] For more details see G.W. Meijerink, B.W.S.B. Hendriks & P.A.G. van Bergeijk (2020). Covid-19 and world merchandise trade: Unexpected resilience. CEPR.

[2] This is under the assumption that a medical development, i.e., a vaccine, will not be functionally available before mid-2021.

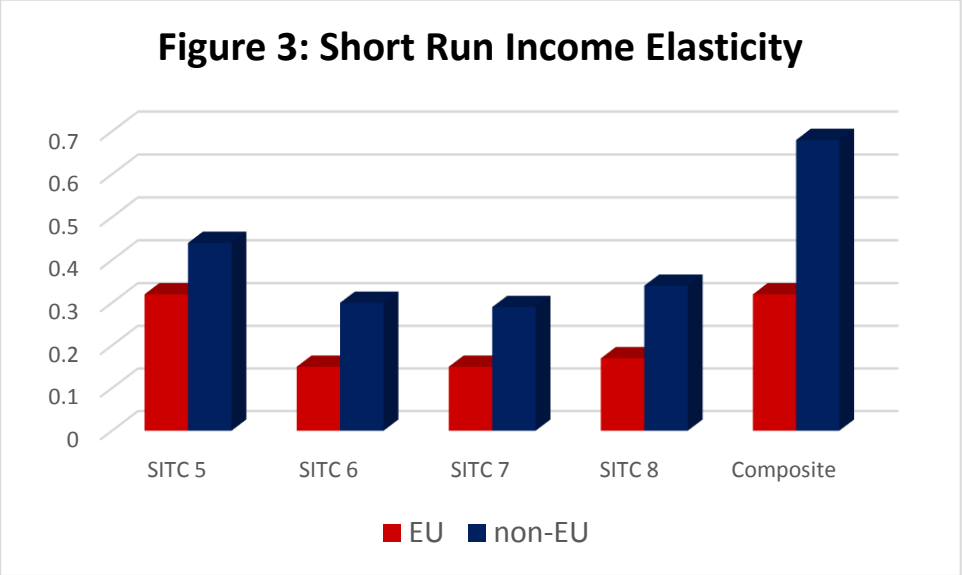
measure of the relative competitiveness of UK exports compared to their counterparts in other countries. An increase (decrease) of REER will mean that the British Pound appreciates (devaluates), hence UK exports denominated in a foreign currency will become more expensive (cheaper) and thus the value of exports will fall (rise). The second variable, foreign GDP, measures foreign demand. We expect that an increase (fall) in foreign GDP will boost (reduce) the demand for foreign (in our case, British) products and hence will result in higher (lower) British exports.

Findings

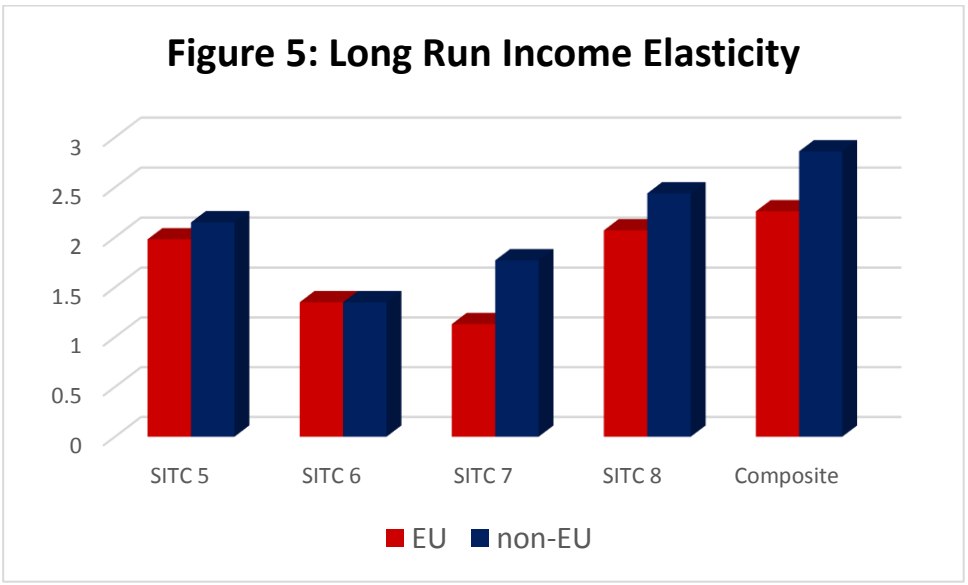
In this paper, we estimate the immediate (short run) and equilibrium (long run) responsiveness (elasticity) of British exports by sector and destination to changes in British competitiveness (REER) and foreign income (GDP). We use monthly exports data from January 1998 to January 2020 for five SITC sectors and two destinations: EU countries and non-EU countries.



If we compare Figures 2 and 3 with Figures 4 and 5 respectively, we see that the immediate impact of changes on either REER or foreign income is always smaller than the long run impact. The explanation for this is that there are some rigidities in the British economy that do not allow a full immediate adjustment of exports in the aftermath of a change to the external environment. Both short run elasticities are below one (in absolute terms). This implies that the short run reaction of UK exports is always smaller than the change in either REER or GDP.



As we see from the comparison of Figures 2 and 3 and Figures 4 and 5, the absolute values of the REER elasticities are always smaller than those of the income elasticities, irrespective of the sector or destination or time frame. This implies that a change of, say, 10% in REER will have a smaller impact on British exports than if foreign income were to experience an equiportionate change (i.e., 10%).



Both non-EU elasticities for each industry in the short and long run are always[3] greater in absolute value compared to the EU elasticities. This is evident from Figures 2-5, where we observe that the dark blue column (non-EU) is longer than the red (EU) one. This is consistent[4] with the recent literature on the

[3] The exception is Sector SITC 6 'Manufactured goods classified chiefly by material'. For this sector, the long run foreign income elasticity is exactly the same across destinations. However, long run REER elasticity is greater in absolute values when selling to EU countries compared to exports to non-EU countries.

[4] Under certain realistic condition related to the difference in responsiveness between EU and non-EU countries of change of

effect of global value chains (GVCs) and economic integration on the magnitude of the REER elasticity of exports. Countries that have firms that are more interconnected, i.e., they are embedded in GVCs, have lower elasticities of REER compared to countries that are less integrated. Furthermore, it is well known that the UK and EU have strong economic ties due to their relationship as members of the EU.

It is evident from Figures 2, 3, 4, and 5 that there is a heterogeneous response on UK exports across sectors and destinations when there is a change in either REER or foreign income. From Figure 2, it is clear that the highest effect on UK exports of a change on REER will take place in sector SITC 7 'Machinery & transport equipment'. A one percent increase in REER will result in a short run drop of 0.24% and 0.14% in UK exports from this sector to non-EU and EU countries, respectively. Turning to Figure 3, we observe that the Composite[5] sector is the one with the highest export responsiveness with respect to foreign demand in the short run, having an elasticity of 0.32 for the EU and twice that figure for non-EU countries. For the long run equivalent elasticities from Figure 4 and 5, we see again that SITC 7 has the largest REER elasticity, being greater than one for both EU and non-EU, whereas the Composite sector has income elasticity of the highest magnitude, greater than two for both destinations.

Over the time period in our sample, British firms had a greater expansion of sales to countries outside the EU than to the EU countries. This can be seen clearly from Table 1: for each individual time period and thus for the overall time period, UK export growth was higher for non-EU countries. Hence, over the years the non-EU market grew faster and became more important to UK exporters.

***Table 1*: Average Growth Rate of Total UK Exports by Destination**

	EU	Non-EU
Feb 1998- Nov 2007	0.34%	0.65%
Dec 2007 - Jan 20013	0.26%	0.81%
Feb 2013 - May 2016	-0.11%	0.40%
Jun 2016 - Jan 2020	0.49%	0.90%
Feb 1998 - Jan 2020	**0.27%**	**0.69%**

Implications

It is important to understand that the immediate effect on British exports of a change in the REER or foreign GDP will be relatively small, and that this will be the case for all sectors and destinations.

exchange rate on export prices and the volume of exports, respectively.

[5] The Composite sector is the sum of SITC 0, Food & live animals; SITC 1, Beverages & tobacco; SITC 2, Crude materials, inedible, except fuels; SITC 3, Mineral fuels, lubricants & related materials; SITC 4, Animal & vegetable oils & fats; and SITC 9, Commodities, not classified.

However, the effect's magnitude will become greater as time passes. This is evident from our estimations of both elasticities in the short and long runs, broken down by sector and destination. Hence, when exporters want to know how their export revenue will be impacted by a change in the exchange rate or the economic activity of a partner country, they should look at both the immediate and the long run effect.

An effect on UK exports arising from a change to the REER or foreign income is not uniform across sectors or destinations. Exports produced by specific sectors or destined for specific countries will react differently to the same external change. In this paper, we produce estimates on how exports react to changes in foreign demand or competitiveness across different sectors and destinations. This is an important piece of information for businesses and policy makers since post-Brexit UK will have its own independent trade policy and new policy targets could be set based on sectoral comparative advantage.

The REER elasticities were invariably lower than the income elasticities across sectors and destinations. Assuming that for most sectors the UK is a small open economy, i.e., it cannot affect world prices, then this implies that the value of its currency is determined in world markets. Hence, sectoral UK exports are principally determined by foreign external factors, most specifically foreign demand (since the effect of a change in the REER will always be much smaller than the one arising from foreign demand). Hence, when firms construct measures of export risk, they should place more emphasis on potential changes in the economic cycle abroad rather than on changes to the Pound's exchange rate.

From Figures 1 to 4, it is apparent that exports to non-EU countries are more volatile than EU exports when responding to changes in either REER or foreign income. This implies that post-Brexit, the exports to EU countries will gradually become more volatile as the UK economy slowly disintegrates from the EU.

The precise new level of EU export volatility with respect to the REER or foreign income will be positively related to the speed with which the UK diverges from EU standards and regulations. However, they are unlikely to become as volatile as the current non-EU exports because of the close geographical proximity, similar cultural background, and very similar rules and regulations governing goods production that were shaped during UK's participation in the EU during the last half century. Hence, UK exporters will be faced with a trade-off when choosing which market to sell to. They could choose to sell to a more stable EU market at the cost of slower growth or they can enter the more dynamic but volatile market outside of the EU. The extent of the trade-off involved will depend on how closely integrated the UK remains with the EU post-Brexit.

The trade-off explained above is becoming increasing important for two additional reasons. The first is related to the fact that Europe and North America are entering into the 2nd wave of the pandemic and many countries have already announced lockdown measures that will adversely impact on the global economy and foreign demand, and in turn on British exports. The second concerns the increasing

possibility of a No Deal Brexit, which will affect, inter alia, the future economic relationship between the UK and EU. As previously noted, the degree of economic interdependence of the two partners will have implications for their trade. Hence, a No Deal Brexit will result in a significant reduction of British exports to the continent. Thus, a No Deal Brexit will result in increasing uncertainty for British exporters in the already unsettled and volatile Covid19 environment.

Aston Business School
Birmingham

Aston University, Aston St, Birmingham B4 7ET
www.lbpresearch.ac.uk