CITD REPORT:
BREXIT AND OKLAHOMA

WES WATKINS CENTER FOR
INTERNATIONAL TRADE DEVELOPMENT
School of Global Studies and Partnerships

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BREXIT AND OKLAHOMA

INTRODUCTION

On January 31, 2020, the United Kingdom (UK) formally left the European Union (EU). In leaving the EU, the UK has also renounced membership with the European Single Market and European Union Customs Union (EUCU). The UK is now negotiating a new trade agreement with the EUCU and is at risk of a "no deal exit" if an agreement is not reached by the December 31, 2020 transitional period deadline.[1] The ramifications of the deal, or lack thereof, will be substantial. The UK is consistently one of the top ten leading actors in global trade, importing a total of $651 billion and exporting a total of $464 billion in 2018,[2] and of the top 10 trade partners for the UK, seven were EU member states.[3] Third countries, those trade partners not associated with the EU, anticipate new opportunities to expand their existing relationships with the UK. In this article, we discuss the possibilities that might present themselves to Oklahoma firms.

> "The UK is consistently in the **TOP TEN LARGEST** actors in global trade."

Oklahoma commodity exports to the UK have been increasing in recent years both in total value and as a percentage of total exports, from roughly 2.0% of exports in 2015 to 3.6% in 2019.[4] While this is below the total exports sent to the UK by the United States (4% in 2019), we believe Oklahoma can surpass the US average for trade with the UK if Oklahoma firms and policy makers are prepared to capialize on the Brexit opportunity.

Currently, commodity exports from Oklahoma to the UK are dominated by civilian aircraft parts and manufactured machinery and electrical parts, accounting for nearly 80% of all exports in 2019.[5] Remaining exports include miscellaneous goods, such as medical equipment and chemical industry products and preparations. Agriculture constitutes only a small fraction of exports to the UK, largely due to highly protective non-tariff barriers for agriculture within the EUCU. It is anticipated that many of these protections will remain in place after Brexit, but it is possible that small changes in regulatory arrangements and/or adaptations by Oklahoma farmers could change current trade patterns in this category.

> "Oklahoma can **SURPASS** the US average for trade with the UK if Oklahoma firms and policy makers are **PREPARED TO CAPITALIZE** on the Brexit opportunity"

While services make up the majority of the UK's economic activity, we do not focus on them in this report for several reasons. The first is that the United Kingdom is a net service exporter and a net goods importer.[6] Therefore, there are likely to be more opportunities for Oklahoma firms to export more goods to the UK in the wake of Brexit than there will be opportunities to export services. Second, the largest single sector of service imports by the UK is travel.[7] Given the lack of proximity, the United States as a whole and Oklahoma, specifically, is unlikely to replace travel service trade from the EU. A third reason is that service trade for the UK is partially a result of the UK being the financial hub of the EU. One expected result of Brexit is that the financial center of the post-Brexit EU will transition to another city, taking with it all related service trade. The primary input for services is human capital, which is generally mobile and therefore very likely to transition to other EU locations as new financial hubs are formed. Further exacerbating the situation is the fact that services are not being included in UK-EU Brexit negotiations and therefore could lead to an overall shrinkage of the industry in the UK as it faces trade barriers and staff shortages when EU citizens move

out of the UK.[8] Finally, given the many dissimilarities between trade in goods and trade in services and the added complexities of services trade, services trade is best analyzed in a separate report.

To determine the greatest opportunities for Oklahoma to expand its trade in goods, we use a commodity-level comparison approach. We rely on the Harmonized System (HS) Codes, an internationally recognized industry classification system, to classify the goods we investigate. We analyze a combination of the volume of the commodities currently exported to the UK from Oklahoma, Oklahoma's top worldwide commodity exports that are currently imported to the UK from the EU, and the revealed comparative advantage (RCA) of different commodity exports in Oklahoma. We split our analysis into opportunities Oklahoma has to expand on current exports and a model to identify new opportunities, along with an analysis for how Oklahoma can best capitalize on each of them.

OPPORTUNITIES

Below we highlight several opportunities that were identified as having potential. The first three were chosen based on current trade volumes between Oklahoma and the UK and an attempt to provide a balanced selection of industries: Aerospace, Measurement Instruments, and Agriculture. For each commodity, we identify major actors, the commodity's economic importance for both the UK and Oklahoma, and describe its importance in US-UK trade negotiations. In the final section, we explore areas of overlap. We review Oklahoma's RCA in different industries and, using examples of industries in which Oklahoma does well, we demonstrate how this can be used in conjunction with current imports by the UK from the EU to identify new market opportunities for Oklahoma firms.

Opportunities to Expand: *Commodities Currently exported*

Aerospace

Aircraft and aircraft parts make up the lion's share of Oklahoma exports to the United Kingdom. In 2019, goods under the category **HS 88 Aircraft, Spacecraft, And Parts Thereof** alone reached $78 million, representing a whopping 39% of the state's 2019 export value to the UK. However, while an important client for Oklahoma's aviation sector, the state represented only 0.77% of the United States' HS 88 exports to the United Kingdom that year (which totaled $10.039 billion), according to the US Census Bureau.

An important characteristic of Oklahoma's aeronautic exports to the UK is that virtually the entirety of these exports corresponds to civilian aviation. **HS 8800 Civilian Aircraft, Engines, And Parts** represented 97.9% of Oklahoma's aeronautic industry exports to the UK in 2019, highlighting the importance of Boeing manufacturing facilities and its supply chain partners in the state. Firms like Spirit Aerosystems (Boeing's largest supplier and one of the world's largest aerostructures manufacturers), General Electric Aviation and Pratt & Whitney are part of this complex supply chain and contribute greatly to the state's burgeoning aeronautic industry cluster. The presence of British aeronautic firms like BAE Systems and Rolls-Royce, although focused on military aviation technology, also contribute to the state's importance as an aeronautic industrial center.

The global aviation industry has been hard hit by Covid-19 in 2020, and Boeing's most recent commercial aviation market forecast predicts an 11% fall in new commercial aircraft sales between 2020 and 2030.[9] This will likely be reflected in the state's registered export values for 2020 (including in HS 88

exports to the UK), but the industry is expected to return to its growth trend in the longer term. This represents some much-needed positive news for a sector that accounts for 120,000 jobs in Oklahoma[10] and highlights the importance of ongoing US-UK trade negotiations for the state. Oklahoma's export flows to the UK are largely tied to Boeing's success, and its continued presence in the UK and European civil aviation markets will continue to impact Oklahoma exports in the coming decade. This is an important consideration for any potential post-Brexit trade opportunities between the United States and the United Kingdom.

Measurement instruments and medical equipment exports

Another category of exports with promising potential for growth is optical and medical instruments. In 2019, goods classified under **HS 90 Optic, Photo Etc, Medic Or Surgical Instruments Etc.**, worth $20.3 million, were exported from Oklahoma to the United Kingdom. This represented over 10% of the state's exports to the UK and 5.7% of Oklahoma's entire optical and medical instrument exports, which in 2019 totaled $359 million.

A further breakdown of this export category reveals that **HS 9030 Oscilloscopes, Spectrum Analyzers Etc., Parts Etc.** accounted for almost half of Oklahoma's optic and medical instrument exports to the UK. Used to measure and display voltage signals, oscilloscopes find widespread application in medicine (for example in electrocardiograms, emergency room heart monitors and muscle electrical activity monitoring, or electromyography), science laboratories, engineering, telecommunications and in the aeronautic industry. Oscilloscopes are also an important component in military aviation communication systems, revealing a crucial linkage between Oklahoma's military/aeronautic industrial complex and sectors like the medical equipment industry, which makes use of technologies originally developed for the military in the field of medicine. Although the sector is dominated by large market actors based in Oregon, California, Germany and China, local firms like Oscium, founded in 2010 in Oklahoma City and specializing on oscilloscope production, are also growing actors in this field.

Medical goods classified under **HS 9018 Medical, Surgical, Dental Or Vet Inst, No Elec**, Pt were also exported to the United Kingdom from Oklahoma, reaching an export value of $2.052 million in 2019. The ability to sell medical goods in a market as sophisticated and competitive as the UK indicates that Oklahoma firms have a competitive advantage in these goods which could further grow and benefit from targeted support. Local firms like IMMY Immuno-Mycologics, a producer of diagnostic tests and reagents for infectious diseases headquartered in Norman; Martin Bionics of Oklahoma City, specialist in prosthetic sockets; Broken Arrow's Da/Pro Rubber, a manufacturer of high-precision moldings for medical equipment; and prefabricated healthcare product manufacturer Modular Services Company of Oklahoma City, also contribute to the sector's strength by generating large quantities of exports for the state.

Agriculture

As a large importer of food and food products, the United Kingdom might seem like a very attractive market for Oklahoma's strong agricultural sector. In 2019 alone, the UK imported more than $5.37 billion worth of **HS 02 Meat And Edible Meat Offal**, an impressive import value that points to potential opportunities for American and Oklahoman meat producers. However, it is important to point out that 89.2% of the United Kingdom's meat imports that year came from European Union member states, mainly Ireland ($1.3 billion), the Netherlands ($1.3 billion), Poland ($544 million), Denmark ($508 million) and Germany ($503 million). Sheep and goat meat from New Zealand, with a value of $268 million, was the largest exception to this EU-oriented trend. Poultry **(HS 0207 Meat and edible offal of poultry)** was the most imported meat, accounting for $1.5 billion or almost a third of UK meat imports, followed by pork **(HS 0203 Meat of swine)** with an import value of $1.2 billion and beef **(HS 0201 Meat of bovine animals; fresh or**

chilled) with $983 million. Important for US producers, frozen beef **(HS 0202 Meat of bovine animals; frozen)** imports were much lower in comparison, reaching $283 million and hailing primarily from neighboring Ireland. Therefore, the intersections of shelf-life and UK consumer demands will need to be carefully evaluated on a case-by-case basis when further exploring the appropriateness of this market.

Forthcoming negotiations will be a determining factor on increasing meat exports from the United States to the United Kingdom. British bans on ractopamine and growth hormones effectively shut out most US pork and beef from the UK market.[11] Additional barriers include a similar ban on chlorine-washing for chicken[12] as well as other food quality standards, and environmental, and animal welfare guidelines currently in place that were enacted during Britain's time as a member of the European Union. Many of these measures have received continued vocal support from influential actors in British political, farming and consumer sectors in the context of US-UK bilateral trade negotiations.[13] US Trade Representative negotiators, however, are optimistic that a deal can and will be reached.[14]

Another important food category imported by the United Kingdom is dairy **(HS 04 Dairy Prods; Birds Eggs; Honey; Ed Animal Pr Nesoi)**, with imports totaling $3.9 billion in 2019. Of these imports, 97% came from the European Union, with Ireland, France, Germany, the Netherlands, Italy and Belgium standing out as the main suppliers of dairy products to the United Kingdom. European cheese varieties, butters and specialty, origin-denominated products make up much of these imports. Competing in the dairy sector of such an affluent, sophisticated market which demands specific types of dairy products will likely represent a difficult challenge for American dairy producers. With $15.1 million in exports to the United Kingdom, the US occupied the 16th position among dairy product suppliers to the UK and represented only 0.3% of the UK's dairy imports in 2019.

Cereals are another food category in which the United Kingdom stands out as a large importer, with purchases of $1.5 bn of **HS 10 Cereals** in 2019. Only $641 million (or 41.7%) of these imports came from the European Union, pointing to an important window of opportunity for Oklahoman cereal producers. With $615 million, **HS 1005 Maize (corn)** registered the highest import value, and Ukraine, Canada and France were the UK's main suppliers. The second highest import value was rice **(HS 1006 Rice)**, with a value of $530 million and the main sources being India, Pakistan and Spain. Wheat imports **(HS 1001 Wheat and meslin)** totaled $318 million in 2019, and came mainly from Canada, France, Germany and Bulgaria. Although the UK meets 85% of its milling wheat demand through domestic production,[15] recent official forecasts predict a 37% fall in the UK's 2020-21 wheat harvest.[16] Filling this predicted gap of 6 million tons in the UK market will provide an opportunity for wheat producers across the globe. Although not a traditional market for Oklahoma wheat producers because of factors like proximity,[17] this could also represent an opportunity for the state's wheat farmers. The bread wheat most often produced in the Southern Plains region (which includes Oklahoma) would nevertheless have to compete with similar wheats produced closer to the UK, namely France, Germany and the Ukraine. Firms engaged in this trade and active in the state of Oklahoma include agribusiness heavyweights like Chicago-based ADM, Bunge, Cargill and the Louis Dreyfus Co.

Opportunities to Develop: *Commodities with a Revealed Comparative Advantage*

A commonly used metric to determine trade advantage is the revealed comparative advantage (RCA). For state by state comparisons in the US, this metric measures the ratio of a state's exports of a commodity to that state's total exports over the ratio of all states' exports of that same commodity to all exports of all states. Therefore, if the RCA is a value greater than one for any given commodity, an advantage is 'revealed.' Basically, this means that Oklahoma is better than average at producing those products for which the RCA is calculated to be greater than one.

Through a cross-examination of the UK's top 25 imports and the top 30 commodities in which Oklahoma has a revealed comparative advantage, we have identified three commodities at the four-digit level to serve as an example of commodities that have potential for an expanded trading relationship between the UK and Oklahoma. The identified commodities are **HS 8471 (Computers and Units Thereof)**, **HS 8473 (Parts for Office Machine)**, and **HS 8544 (Insulated Wire)**. Although there were other commodities that were present on both lists, we found these three to be the most viable due to the nature of the products and an already existing, albeit weak, relationship with the UK in these markets. This process of cross examination and narrowing down commodities by examining current export relationships also serves as an example of a method by which other export opportunities may be identified in the future.

After using this method to decide on which commodities to examine for opportunity in Oklahoma, we took a macro-level look at which countries the US will be competing against for an increase in market share on these goods if supply chains from the EU to the UK are disrupted. Then we examine the market at the state level and identify the most viable path for Oklahoma exporters to grow their sales of these commodities to the UK. In all of this, it will be important for US trade organizations and firms to initiate and facilitate relationship building.

Country Outlook

The largest supplier of the three identified headings **(HS 8471, HS 8473, and HS 8544)** to the UK is China, and supply chain shuffling due to Brexit will not likely impact Chinese supply. However, for items under the **HS 8471** and **HS 8473** headings, other key suppliers besides the US and China are all in the EU (Netherlands, Germany, Czechia, Poland, Ireland, Hungary, France). This means the gap Brexit may leave behind is certainly worth investigating. Other suppliers that could feasibly compete with the US to fill in the EU gap for these commodities are Vietnam, Thailand, Malaysia, S. Korea, the Philippines, and Mexico. These countries already export large quantities of these goods to the UK as shown below (Figure 1 & 2).

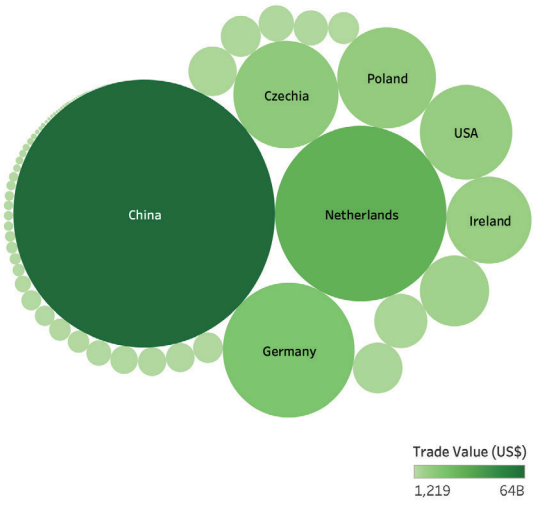

Figure 1: Countries from which the UK Imports HS 8471

In order to increase market share in these goods, US companies will need to understand what other countries they will be competing against in the UK market and use that information to create a more competitive response to the market fluctuation. For instance, if Oklahoma suppliers of **HS 8544** know that they will be competing against suppliers in Vietnam for UK market share, they can better respond both in production adaptations and relationship building with UK importers.

While **HS 8544** is more evenly dispersed among suppliers to the UK (shown in Figure 3), the overall the trade value is considerably less. China is still in the lead in exporting goods under this heading, but by a much smaller margin. The bubble plot below shows that countries like Turkey, Egypt, Morocco, and India are the next largest non-EU competitors that will likely also try to fill in trade losses from the EU. However, the US is the second largest exporter of this good to the UK and is well positioned to adapt. Oklahoma could benefit from this increased demand, but it will take careful planning to capitalize on this opportunity and gain an increase in market share.

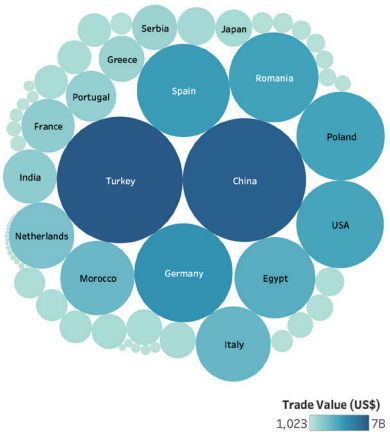

Figure 3: Countries from which the UK Imports HS 8544

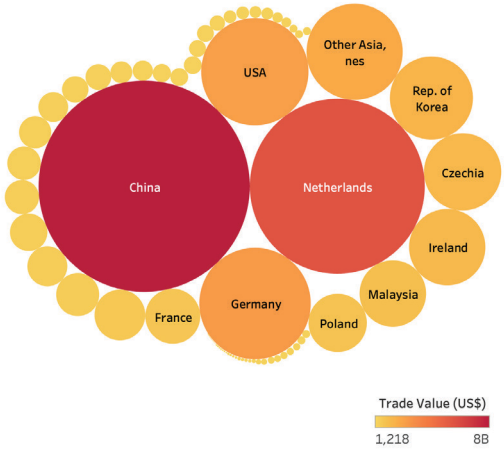

Figure 2: Countries from which the UK Imports HS 8473

Oklahoma Competitiveness

As previously discussed, Oklahoma has a revealed comparative advantage in producing goods under the headings **HS 8471, HS 8473, and HS 8544.** However, this only means that Oklahoma is superior at producing these goods relative to other US states, and that they are important commodities for the state. It does not imply anything regarding the total market share of any given good.

Like many Oklahoma goods, the largest importers of Oklahoma products under the **HS 8544** heading are Canada and Mexico. However, the largest importer of goods under both the **HS 8471** and **HS 8473** headings from Oklahoma is the Netherlands. We dug into the numbers to understand more about what might be happening in this supply chain. As stated earlier, **HS 8471** includes computers and parts thereof, and **HS 8473** includes parts for **HS 8470-HS 8472 (computers and other office machinery such as cash registers etc.)**. Investigation of these industries leads us to believe that Oklahoma is not an original manufacturer of these items, as most are made in Asian countries, but rather that Oklahoma is a distributor of used electronic products (UEPs), classified as working electronic products and parts to be refurbished and resold, or as non-working goods to be recycled into scrap materials, which include items under the **HS 8471** and **HS 8473** headings.

There are a few major firms in Oklahoma that are doing this type of business including Hi-Tech Assets and LifeSpan. In a report from 2013 by the United States International Trade Commission, Hi-Tech Assets testified that "more than 40 percent of its items sold for reuse were exported" and LifeSpan commented that "less than 10 percent of its material is exported directly, but the other 90 percent is indirectly exported into the global commodities market."[18] There are also other companies that have offices in both Oklahoma and the Netherlands that deal in computers and electronic parts such as Rockwell Automation, HP, and Gexpro which might be distributors of new or refurbished computers and other office machine products.[19] The Netherlands then plays a large role in exporting these goods to other countries in the EU, namely the UK. The major question for Oklahoma firms is whether the Netherlands is adding value to these products before distributing them. If they are not, or if the value added is minimal, then it is possible that Brexit will allow a more direct line to the UK market, potentially eliminating resellers in the Netherlands, which could cut costs for Oklahoma distributors as well as end users in the UK.

UK demand for products under the **HS 8471, HS 8473, and HS 8544** has stayed more or less consistent over the past five years, while the amounts Oklahoma has exported of each 6-digit commodity to the UK over this same time period has varied quite broadly. At first, it seemed that this may be due to a lack of capacity on Oklahoma's part, however, Oklahoma exports large amounts of these goods, just not to the UK, leading us to believe that capacity is not the issue. Rather, we think the key ingredient for growth in these industries in, terms of the UK, is relationship building so that future demand is better communicated. It is possible that there has not been significant enough relationship building between the firms of Oklahoma and the UK due to neither side having a vested interest in the other (Oklahoma firms have larger buyers, and UK firms have larger suppliers), but the significant shock to the system that Brexit will cause could be a great opportunity to expand on relationships that already exist but may have been inconsistent or experienced little growth in the past. Specifically focusing efforts on building stronger ties and communication between UK and Oklahoma firms that deal in products under these three headings could give our state a competitive edge over other states that might not be paying as much attention.

WHAT'S NEXT?

With Brexit rapidly approaching, Oklahoma businesses who wish to expand their exports to the United Kingdom need to start investigations now. After examining current trade relations between the UK and Oklahoma, we identified four main takeaways. First, Oklahoma should leverage large firms such as Boeing in negotiations. This aligns with recent economic theory which argues that high productivity at the firm level drives the majority of trade and since large firms are more likely to have developed efficiencies, they generally make up most of international trade.[20] Therefore, by leveraging large firms, Oklahoma will demonstrate greater economic importance and be better poised to negotiate for greater levels of liberalization. Second, clusters of production of goods such as those related to medical instruments and military bases can lead to highly beneficial spillovers in a local economy, which can create comparative advantages in additional industries. It is imperative that Oklahoma work to identify and promote these type of industry clusters as it looks to expand its trade relationship with the UK. Third, non-tariff barriers will be important to consider, but harder to work around, despite potential large changes in trade barriers with the EU. This factor may still leave the EU with an advantage in industries such as agriculture. If Oklahoma farmers want to take advantage of any new market opportunities in this regard, they will need to be adaptive. Lastly, there is a great deal of opportunity for new actors when there are trade barrier changes of the magnitude of Brexit. Using RCA alongside investigations of current trade with the EU and supply chain mapping, Oklahoma firms should actively explore new opportunities to trade with the UK.

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