

Global Talent, Global Reach



An economic analysis of UK architecture exports and the impact of Brexit

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“Architecture directly contributes **£4.8 billion** to the UK economy every year with a further **£1 billion** a year contribution embedded in the exports of the other industries it supports – from banking to museums, transport to IT services.”

Executive Summary and Recommendations

Architecture directly contributes £4.8 billion to the UK economy every year with a further £1 billion a year contribution embedded in the exports of the other industries it supports – from banking to museums, transport to IT services.

Unlike other EU countries, where 97% of architecture is domestically-focused, British architecture is a global success story. At nearly £500 million last year, UK architects' revenue from international work far exceeds that of architects in any other European country. And, unlike the rest of the services sector, the majority of British architecture exports go to countries outside the EU. British architecture exports are truly international, with British practices designing ground-breaking buildings on every continent.

The architecture sector's main asset is its global workforce – over two-thirds of the sector's inputs are labour and one in four architects working in the UK are from the EU. Their contribution to the sector is vital and the risk of losing access to talent and skills from the EU would have a significant impact on UK architecture's ability to compete in both to EU and non-EU markets. Combined with the risk of losing access to the EU's single market, a 'No Deal' scenario could reduce architecture exports by £73 million per year, or 15% of total exports.

However, British architecture stands to benefit significantly from trade deals with new partners. Striking a services trade agreement with just the USA and China could boost exports of British architecture by at least £45 million per year and potentially much more. This could mitigate the risks of Brexit considerably, but only if these deals are implemented before March 2019 or if the UK negotiates a Brexit transition period of sufficient length.

British architecture is at the forefront of innovations in design, technology and sustainability that are transforming the global built environment. The pedigree and the invention of world-famous British practices and the pioneering architecture they create means that architects are uniquely placed to supply a growing global market for smart and sustainable design that could be worth over \$400 billion worldwide by the end of the decade.

As the UK negotiates a new relationship with the rest of the world, the opportunities for British architecture are enormous. One in five architects plans to respond to Brexit by exporting more overseas. Ensuring that British architecture can continue to compete domestically and worldwide and preserving the sector's access to EU and global talent, while opening up new markets via services trade agreements, is critical.

Supporting architects to innovate, collaborate and create in the global marketplace will benefit the whole economy and help build a global Britain.

As a result, the RIBA has developed eight policy recommendations for Government as a blueprint for the continued global success of UK architecture.



A blueprint for global success

1. A post-Brexit immigration system which continues to allow businesses to access the best global talent from the EU and the rest of the world.
2. Continued mutual recognition of architects' professional qualifications with the EU.
3. New mutual recognition agreements for architects in other large markets to support UK architectural exports.
4. New trade agreements with large markets that include trade in services and mutual recognition of professional qualifications.
5. A Brexit deal with the EU which enables UK business and academic institutions to continue to participate in pan-EU research projects.
6. Additional support for research and innovation through grants and tax incentives when EU state aid rules no longer apply.
7. A trade agreement with the European Union that maintains mutual market access and avoids non-tariff barriers.
8. Expanded export support and advice for small businesses, to support more small and medium-sized architecture practices to expand internationally.

Introduction

Background and context

The UK and the EU have initiated formal negotiations on the terms of the UK's exit from the EU. Negotiations about a future trade relationship between the UK and the EU are also anticipated once sufficient progress has been made on the terms of the UK's departure.

There is considerable uncertainty as to what these future arrangements will be; a range of options have been proposed, involving greater or lesser access to the EU's single market and a more open or more closed UK immigration policy.

For a global services sector like architecture, which is reliant on the skills and creativity of highly-specialist professionals and which designs buildings for clients all over the world, the extent to which Britain can access the best available talent and the terms on which it trades with the rest of the world are key variables.

The closer the degree of integration with the EU, the lower the barriers to UK architecture exports to the EU (and vice versa) and the lower the costs to UK architecture of accessing inputs (notably skills) from the EU. The outcome involving the greatest degree of separation from the status quo is a 'No Deal' Brexit, where the UK and the EU continue to trade with each other based on Most Favoured Nation (MFN) terms with no additional trade agreement.

Under all post-Brexit scenarios, the UK has the potential to negotiate new trade agreements in services with non-EU partners. The potential benefits of seeking deeper services trade with the rest of the world is particularly exciting for architecture, given that exports to markets outside the EU account for over 80% of total architecture exports.

Britain's future trade relationship with the EU and the rest of the world has profound implications not only for British architecture and the built environment, but for the whole economy.

This research, prepared for the RIBA by Frontier Economics:

- Identifies and quantifies the ways in which the export of UK architecture contributes to the wider economy
- Estimates the impact on the sector of various Brexit scenarios
- Examines the export potential of the sector under new trade agreements.

Methodology

Frontier Economics have developed an economic framework that maps the different ways in which architecture contributes to the UK economy. These include direct and indirect contributions that can be valued through market transactions (such as the value of goods and services produced at the sector or national level), and direct and indirect contributions that do not occur through specific market mechanisms (e.g. contributions to other sectors or public goods effects). The framework uses a mix of quantitative and qualitative information to measure the economic value associated with these contributions.

Frontier then use a 'what if?' approach to consider the impacts of Brexit. First, we consider a baseline 'No Deal' scenario where the UK leaves the EU with no trade agreement in place. We then measure the impact on the sector of this, and progressively more integrated alternative scenarios.

The approach does not predict an outcome from the Brexit negotiations. Rather, it serves to highlight the economic value at risk to the UK given the impact of each Brexit scenario on UK architecture exports.

We also consider the potential benefits of seeking new trade agreements with key non-EU partners. We model the potential uplift in trade of removing existing barriers to services trade, such as restrictions on foreign entry or the right to practice as an architect, and of establishing services trade agreements.

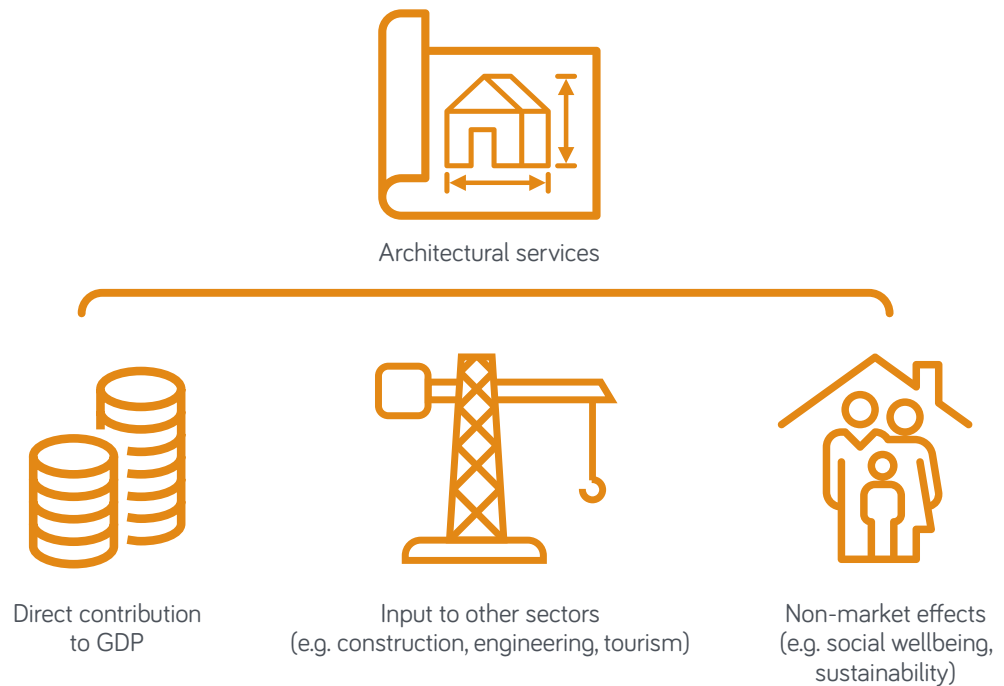
These estimates likely undervalue the potential gains; they are based upon a uniform uplift assumption and the effects of striking new trade partnerships could be much more pronounced in markets where UK architecture exports are currently low.

Based on this analysis and feedback received from architects across the country, the RIBA have developed a series of policy recommendations that the UK Government must implement in order to ensure that the UK architecture remains a global leader.

The economic contribution of UK architecture exports

Overview

The focus of this report is the importance of architecture to the UK economy via trade. This contribution takes place through a variety of channels, as depicted below.



We can identify links between architecture and other economic activities through the supply and purchase of inputs and outputs. These links mainly occur through financial transactions in markets.

They account for indirect contributions made by architecture to GDP, over and above direct ones made by the sector. For example, a change in demand for construction activities leads to a change in demand for architectural services.

Changes to how architecture practices can access skills (e.g. because of a change in immigration policy) will affect the quality and price of inputs supplied to other sectors.

On the right-hand side of the schematic above are contributions that are not (directly) valued through market transactions. For example, architecture contributes to placemaking and the quality of the built environment.

These non-market contributions have direct public good effects, as well as indirect market effects, e.g. because they provide inputs into other sectors. For example, buildings and the built environment contribute to a sense of place – the ‘brand’ of a city or town – that can act as a draw for visitors.

Direct and indirect market-based effects are usually measured through national accounts. They provide a measure of the economic footprint of a sector at a point in time. They do not, however, provide a measure of how much the wider economy would expand or shrink because of changes to the size of a particular sector.

This is because when a single sector expands or contracts, resources are reallocated away from or to other sectors. So, whether changes to the size of the architecture sector have an overall impact on the UK economy will depend in part on whether there are efficiencies associated with architecture relative to other sectors.

As the UK has a comparative advantage in architecture, an expansion of the architecture sector is likely to stimulate growth in the wider economy.

While non-market effects are harder to measure, they are nevertheless of close interest. This is because these effects are closely related to value added by an architect and because, by definition, they are subject to market failures.

Without specific forms of government intervention, there is likely to be an under-provision of, for example, energy efficient buildings, design that improves the quality of the built environment and social housing, which is routinely under-provided by the market.



Architecture adds

£4.8 billion

to the UK economy every year



Architecture's main asset is its **people** – two-thirds of the sectors inputs are labour



The value of UK architecture exports was up to

£500 million

 in 2016

The UK is the biggest exporter of architecture in Europe



The proportion of UK architecture exports to non-EU countries is far greater than the same proportion for UK exports as a whole

Architecture value chain, national accounts and exports

Statistical issues

The Annual Business Survey (ABS) is the main survey used by ONS to prepare national accounts and record the amount of economic activity by businesses in different sectors. Detailed questionnaires on output, employment and investment are given to all large firms and random sample of smaller firms.

The ABS estimates that the architecture sector employs 79,000 people with GVA of **£4.8 billion**¹.

To understand the links between architecture and other sectors it is necessary to supplement ABS data with other sources. These include:

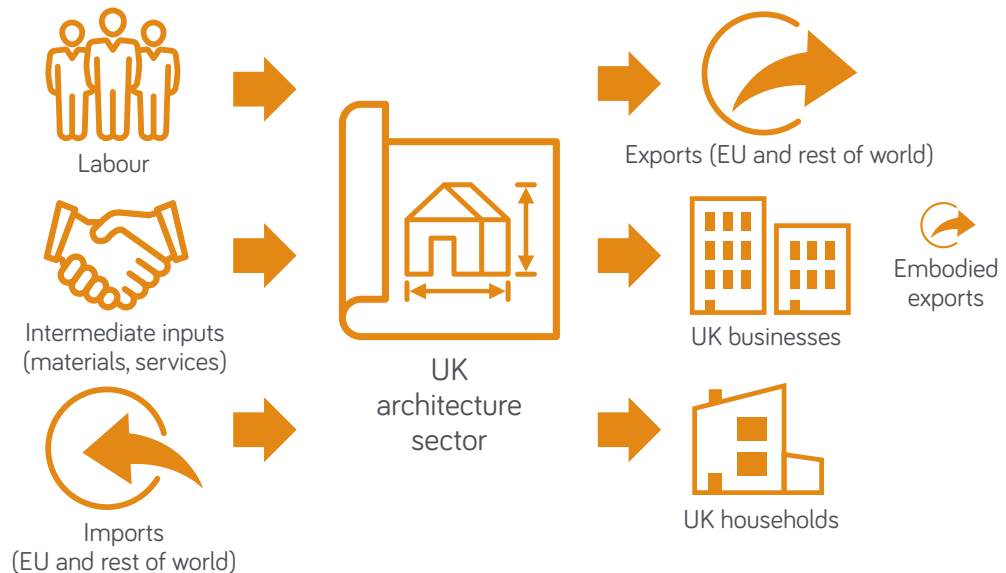
- National accounts data. This identifies links between architecture and other sectors (such as engineering and construction) that use inputs from the architecture. These links mean that in addition to their direct exports, architecture services also export indirectly, as architecture is embodied in the exports of other sectors².
- Trade data. Frontier Economics used a variety of sources:
 - The ITIS is a survey sent to a subset of ABS respondents. It asks businesses about the goods and services they import, including the type of goods and services and the relevant countries.
 - The Department for Digital, Culture, Media & Sport (DCMS) publishes data on the creative industries, including architecture. This is useful for providing a breakdown of UK architecture exports by destination.
 - Eurostat data on architecture services across Europe provides an indication of the share of European architecture activity accounted for by the UK.
 - OECD TISP and EBOPS data: these present measures of bilateral trade, and are useful for measuring the relative importance of different trade partners to UK architecture.
- Information from the Architects Registration Board on the proportion of UK-registered architects from the EU or registered overseas. Presently, that figure is 25%.

¹ These figures relate to the output and employment of businesses in the architectural services sector (industry definition) rather than peoples' occupation. Not all the employees in these businesses will be architects by occupation. Likewise, there will be architects working in businesses in related sectors, for example construction. Analysis of the Labour Force Survey suggests around a quarter of architects by occupation work in other sectors. However, due to the diffuse nature of these other sectors, it is difficult to pinpoint the economic contribution of this element of architectural services.

² The main challenge here is the granularity of reporting. Architecture is reported as part of a larger group including engineering and technical testing and represents around 15% of this category. When data is reported at this level, we assume that architecture and other categories behave similarly, i.e. in a way that maintains their overall share of the category.

Overview of value chain

Below is an overview of the architecture value chain, showing the various inputs consumed by the UK architecture sector and the various uses of architectural outputs.



Source: Frontier analysis of DCMS Focus on Exports, ONS ITIS, ONS ABS, WIOT and OECD TISP data

Inputs

An industry adds value directly using labour and capital and draws on intermediate inputs such as materials, goods and services purchased from other sectors. Architecture is particularly labour intensive, with only 33% of production accounted for by intermediate inputs. This compares with an overall 66% across the wider economy, 48% for services, and 41% for professional services³.

This reinforces the point that architecture's main asset is people, and access to talent is critical for maintaining the sector's pre-eminent global position.

Value Added – Labour and Capital

Architecture accounts for **£4.8 billion** of value added. Capital costs are trivial⁴ so most of the value added by the sector comes from labour. Most of this labour cost is in employing architects⁵, of whom 25% are non-UK EU nationals, who support British practices, fill domestic skills gaps and bring their distinct training and cultural perspectives to enrich UK architecture as a whole.

³ Source: Annual Business Survey 2015. Excludes financial services.

Therefore, nearly £1 billion of the value added by UK architecture can be attributed to EU architects⁶.

Recommendation

The Government must ensure that the post-Brexit immigration system continues to allow businesses to access the best global talent from the EU and the rest of the world.

Intermediate inputs

According to the ABS, the architecture sector spent **£2.4 billion** on materials, goods and services (2015). Input-output tables suggest around half of intermediate inputs used are professional services such as legal or accounting and a further 20% are public administration (e.g. planning, local authority). Travel and insurance are also important inputs. Around 10% of these inputs are from overseas (of which half are from the EU, half from the rest of the world).

Imports of architectural services

The UK also imports architectural services. These have several different uses:

- Intermediate inputs into UK architectural services. For example, a UK architectural practice contracts parts of a project to an overseas company. In this situation, the import acts as a complement to UK production.
- Intermediate inputs into other UK sectors. For example, a construction company purchases architectural services from an overseas company. In this situation, the imports are a substitute for UK architecture and impose a competitive constraint.
- Final consumption by UK households and businesses. As above, in this situation the imports are a substitute for UK production and impose a competitive constraint.

Estimates of the scale of architectural imports vary from circa **£59 million** to **£93 million** per year⁷.

⁴ RIBA Business Benchmarking Survey 2016 finds that premises costs are only around 5% of all expenditure.

⁵ According to RIBA Business Benchmarking Survey 2016: for the benchmarked businesses fee-earning staff costs are were £427 million, out of total staff costs of £492 million (i.e. 87%).

⁶ (GVA £4.8 billion) x (90% GVA due to labour) x (87% architects as share of labour cost) x (25% architects EU) = £939 million.

⁷ ONS ITIS data and OECD TISP data. As these estimates come from different sources and sample frames, there is no reason they should reconcile. The discrepancies might reflect different countries' approaches to preparing the data, for example in how firms are surveyed, or in how products and services are classified.

Outputs

Architectural services are consumed as intermediate inputs by businesses, directly by households, and exported to other countries.

Exports

Exports to Europe are in the region of £70 million to £100 million per annum, while the rest of the world accounts for between £350 million and £400 million of exports⁸.

Tendency to export varies greatly by size. For firms with UK office revenue greater than £30 million, 71% of UK revenue is from overseas projects, whereas for firms smaller than this, this proportion is only 9%⁹. We can therefore distinguish between two distinct segments of the UK architecture sector – one export-oriented and the other domestic-oriented.

EU architects working in the UK are particularly important to the export-oriented segment of the market. Most international architects working in the UK are based in London, and (based on RIBA's Business Benchmarking data) London-based practices tend to be larger by size and revenue, and therefore are more likely to be part of the export-oriented segment of the sector.

Recommendation

The Department for International Trade should expand the scope and range of export support and advice it gives to small businesses, to support more small and medium-sized architecture practices to expand internationally.

Consumption by households

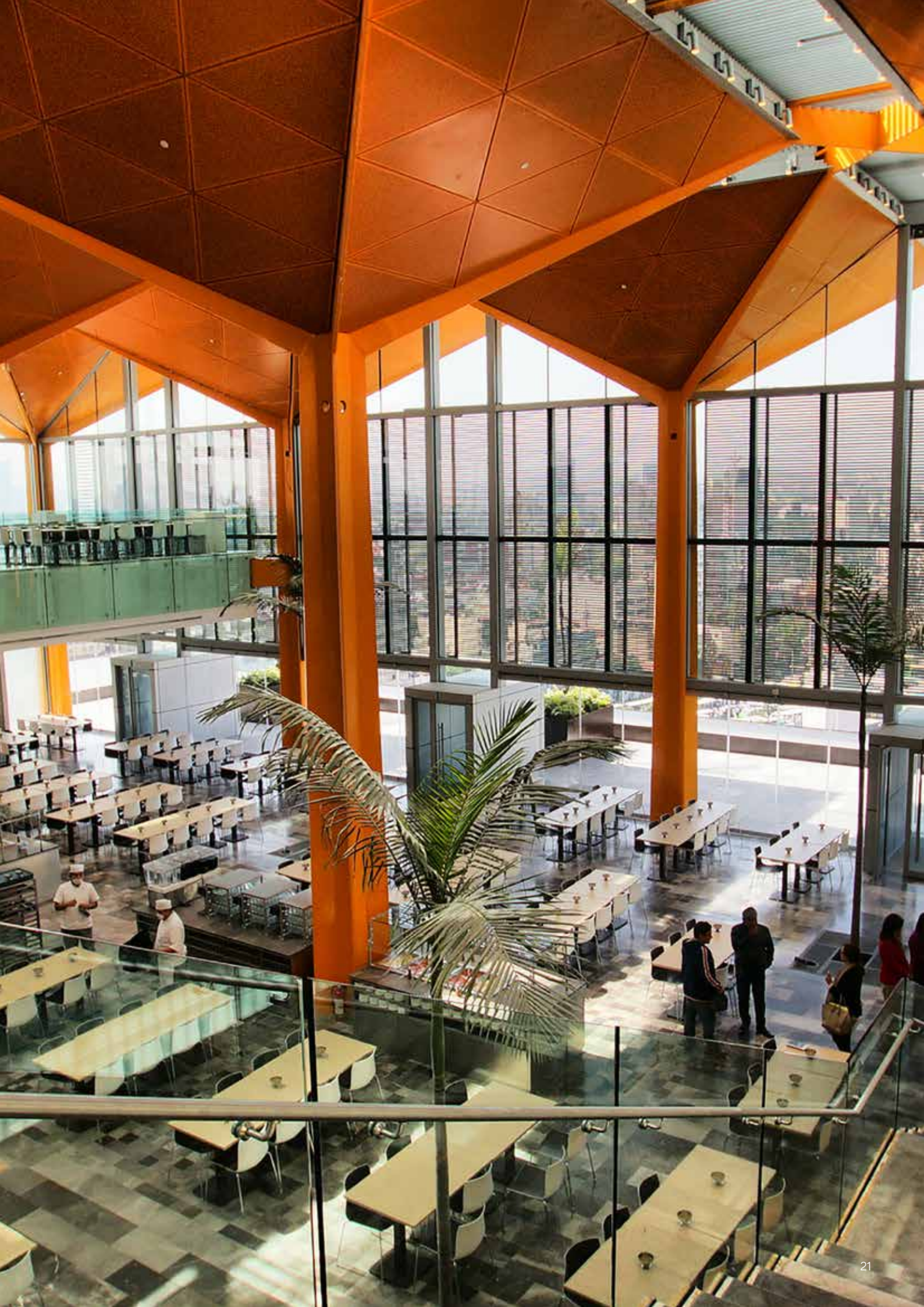
In some cases, households directly purchase architectural services. This is typically for residential development or conversion, as well as small-scale commercial activity undertaken by households (e.g. sole trader activity that falls 'below the radar').

Input-output tables¹⁰ show how outputs are used by households or by businesses. For the wider sector (architecture, engineering, scientific testing) around **£1 billion** per annum is used by households. We assume this household use can all be attributed to the architecture sector, as the engineering and scientific testing components are unlikely to be relevant to households.

⁸ Range is from Creative Industries: Focus on Exports, DCMS (2015-16) and OECD TISP mirror data.

⁹ Frontier analysis of RIBA Business Benchmarking 2016 data.

¹⁰ World Input Output Tables 2014. (N.B. sector includes architecture and engineering)



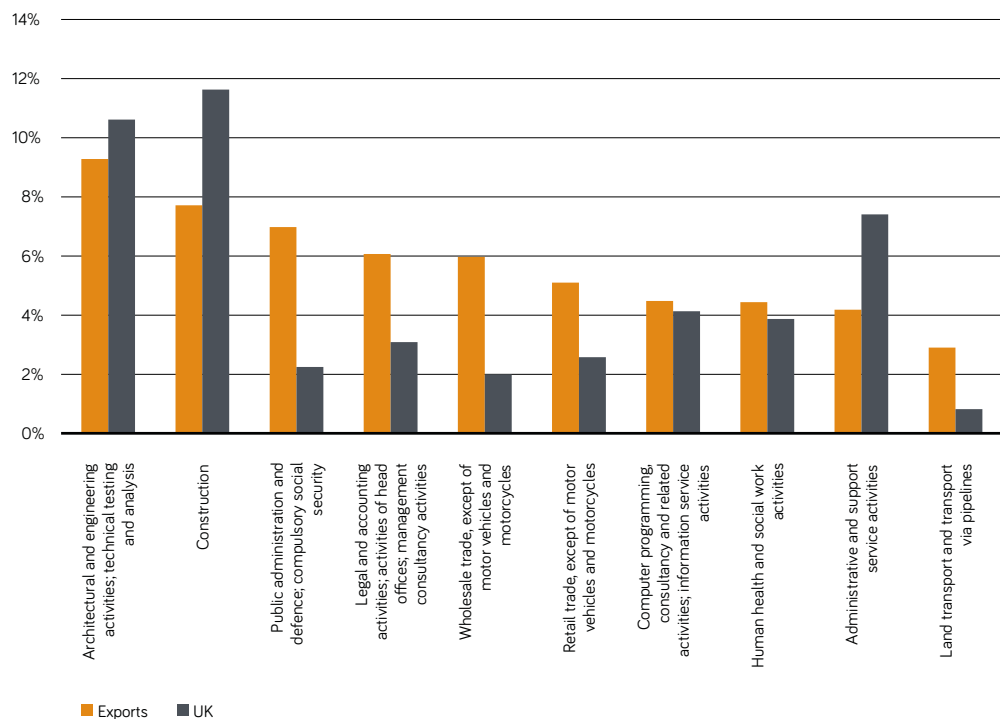
Intermediate use by UK businesses

Once we subtract exports and household consumption from the total output of £7.2 billion, we are left with nearly £6 billion of intermediate demand by UK businesses. The input-output tables suggest this is in a mix of different sectors. A significant proportion is in sectors concerned with delivery of buildings, such as construction and engineering.

The rest is in the sectors that ‘use’ buildings. These businesses directly purchase architectural services from architecture practices. The other services required for delivering the building are purchased directly from other companies, i.e. the company pays an architecture practice to design a building and a construction firm to build it¹¹.

The below chart provides a disaggregated presentation of the use of architectural services by other sectors, as well as the split in terms of sectors in other countries using UK architectural services (exports).

Use of architectural services by other sectors



Source: Frontier Economics analysis of World Input-Output Database 2014

¹¹ There is a question of whether this ‘separate sourcing’ is overstated, for example if the services are separate only from a financial or accounting perspective but are undertaken as a joint project.

The sectors buying in architectural services in turn export goods and services to other countries. These give rise to ‘embodied exports’, as part of the architectural input is used in creating the goods and services that are exported.

For example, a bank hires an architect to design a building for them, from which they then export financial services. The building is a necessary component of that bank’s operations. The architecture sector can therefore lay claim to a portion of that bank’s export value as ‘embodied export.’

These ‘embodied exports’ are around £1 billion¹².

These sectors are internationally traded services sectors. Consequently, changes, including those stemming from Brexit, affecting the policy environment in which they operate, will affect demand for architecture services.

Input-output tables do not capture the value of non-market inputs provided by architecture (e.g. to tourism). We consider these in greater detail later in this report.

Construction, engineering and adjacent sectors

The value chain analysis above splits out architecture from related sectors to demonstrate its specific impact. However, architecture has strong linkages with other sectors involved in delivering buildings, landscape, and infrastructure.

Around a quarter of the architectural output used by businesses is used by firms in the construction, architecture and engineering sectors. This likely understates the ‘true’ amount of linkage between these sectors.

Architects are also employed in sectors other than architecture, e.g. where the primary activity of the business is in a different sector, but where architects are used to some extent in the business’s activities.

This will include businesses in adjacent sectors (those that deliver buildings) as well as businesses with large footprints in terms of retail or office space. The Labour Force Survey indicates that around one third of architects by occupation work in businesses outside of the architecture sector.

These adjacent sectors are significant in terms of exports: **£2.2 billion** in construction and **£7.1 billion** in engineering per year on average.¹³ These figures will include some embodied exports of architecture, e.g. if a construction firm uses architecture in an overseas project. In addition, there may be exports by these sectors which are facilitated by the architecture sector if, say, they are part of a consortium bid.

¹² This assumes that the propensity for using architecture is the same for exported and domestically-consumed output; there is no reason to believe otherwise.

¹³ 2013-15 average from ITIS.

£1 billion

Architecture contributes £1 billion to the UK economy a year through the embodied exports of the sectors it serves

Overview of trade links

The charts on the next page show the size of the UK architecture sector relative to the sector in other EU countries, and the size of UK exports compared to other EU countries.

The UK's architecture sector is one of the largest in the EU – this is broadly in line with the size of the UK economy relative to EU counterparts.

What stands out is that the UK is by far the largest exporter of architectural services, and to a much greater extent than its size relative to other EU architecture sectors.

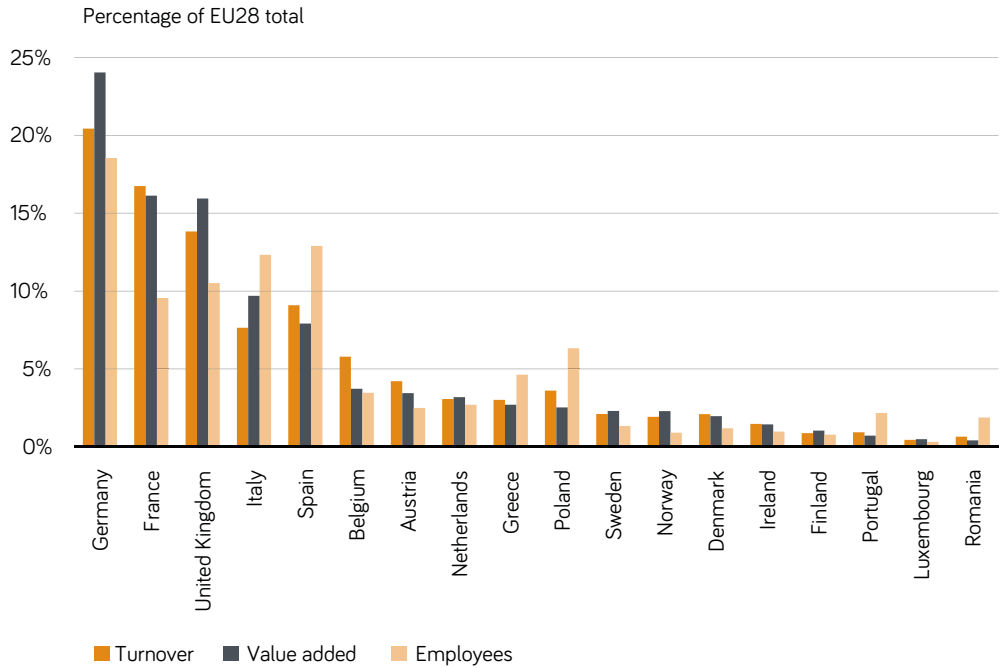
This is very much driven by exports outside of Europe: while the UK is strong in terms of intra-European trade, its exports of architecture to the rest of the world are much higher, and are much higher than the exports of any other EU country to the rest of the world.

In most other European cases architecture is a domestically-focused sector, with 97% of output used domestically and only 3% exported.

So, while the UK has domestic consumption of architecture broadly in line with the size of its economy, the export sector is disproportionately large, particularly with regard to exports to the rest of the world.

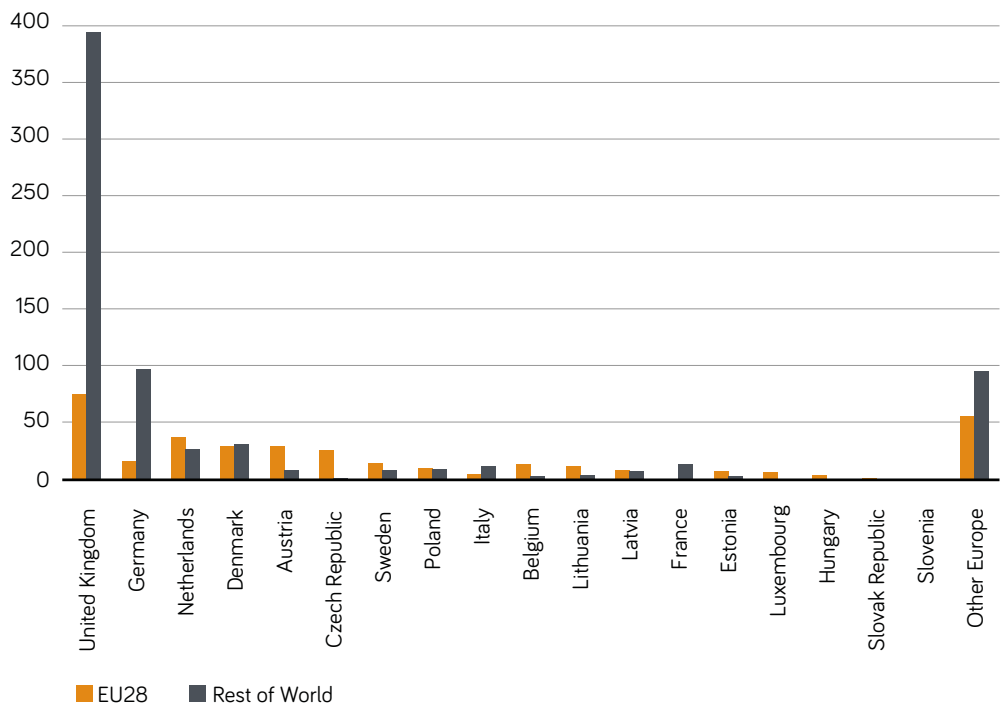
The UK is a global architecture hub in a way that other European countries are not.

Relative size of EU28 architectural services sector



Source: Frontier analysis of Structural Business Statistics 2013, Eurostat

Relative exports of EU28 architectural services sectors (£ million)

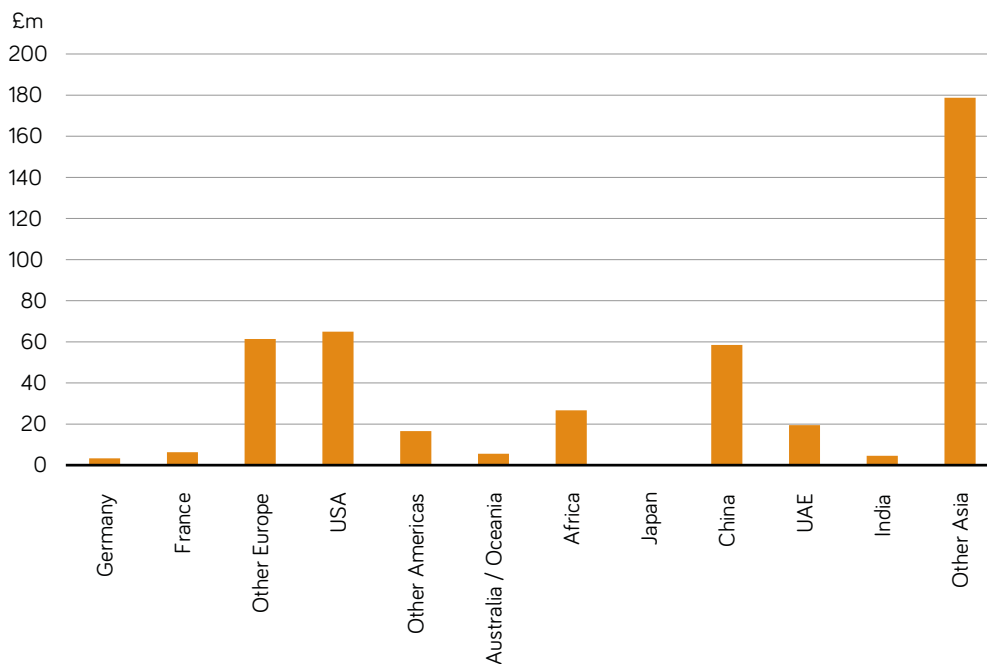


Source: Frontier analysis of Creative Industries: Focus on Exports 2016 and OECD Trade in Services 2015 data

Where do UK architecture exports go?

As noted above, the UK's pre-eminent position as a global hub for architecture is driven by exports outside the EU. The chart below shows UK architecture exports by destination; the largest destination is 'Other Asia,' including markets such as Saudi Arabia, Qatar and Malaysia. This reflects the findings of the RIBA's latest Business Benchmarking data, which shows that 38% of Chartered Practice international revenue comes from projects in the Middle East and 17% from Asia, and only 17% from the EU.

UK architecture exports by destination (2014)



Source: Creative Industries: Focus on Exports 2016 (data relates to 2014)

Note: Further country breakdowns not available from the DCMS data. The specific countries split out in that data are chosen due to the size of their markets vis-à-vis all creative industries, not just architecture.

The direction of UK architecture exports differs substantially from the overall direction of UK services trade, which is dominated by the EU (around 35% of exports), followed by the US (22% of exports).

Exports to the EU are directly exposed to Brexit impacts. But exports beyond Europe will not be sheltered from Brexit impacts. Certain Brexit scenarios will affect the cost of labour and other services that are used by architecture, as well as the overall business environment, and therefore affect the competitiveness of British architecture across all global markets.



Non-market effects

There are several different ways that architecture contributes to the UK economy through “non-market contributions.” For example, direct export benefits to other sectors such as tourism, contributions to energy efficient and sustainable design and public good effects, for example those that improve the quality of a place.

These non-market effects can be further broken down into those that provide direct benefits (e.g. the enhanced welfare of residents/ users of better quality buildings or cities); and those that provide indirect ones (improving location quality can strengthen agglomeration effects e.g. by attracting/ retaining more people and deepening skills markets).

To keep the analysis tractable, we focus our attention on three areas where the non-market effects of architecture appear to be substantial:

- **Sustainable design:** contributing to reducing both the costs of energy inefficient buildings and meeting binding emissions reduction targets
- **Tourism:** the role of architecture in attracting and facilitating tourism in the UK
- **Placemaking:** the social, cultural and economic benefits that architecture can contribute to, through making places more appealing for people to live and work.

We also outline the export potential brought about by these non-market effects. As sustainable design, technological innovation and placemaking form an increasingly large part of the global market for construction, Britain’s pedigree as an early-mover in this field provides an advantage for UK exports, while the appeal of British architecture as a driver of tourism directly contributes to Britain’s export income.

We also consider the extent to which these non-market effects are susceptible to changes resulting from Brexit.

Tourism is worth

£121.1 billion

a year to the UK economy



Britain's modern and historic architecture are important pull factors for tourism to the UK

The global market for smart design will reach

\$400 billion

worldwide by 2020



Half

of new urban buildings in China will be green buildings by 2020



Sustainable design

The built environment is a significant contributor to both climate change and efforts to mitigate it; 30% of the UK's direct and indirect carbon emissions come from its built environment¹⁴.

Sustainable design has a vital role in helping the UK and other nations to meet their binding emissions reduction targets and is an increasing proportion of overall building activity; over half of building activity in the UK is now accounted for by green projects¹⁵.

In addition to the environmental benefits there is also an economic benefit to more sustainable design; better-designed buildings use less energy and save their owners and operators money throughout the building's lifetime, and retrofits of existing buildings designed to reduce their emissions will yield significant savings.

Research by the Carbon Trust, for example, found that a 35% reduction in emissions in non-domestic buildings would benefit the UK by over **£4 billion** a year¹⁶. In addition to these benefits, better and more sustainably-designed buildings have a further social and economic effect through their contribution to health and wellbeing.

The link between our built environment and our physical and mental well-being is increasingly well understood, as is the economic cost of poor health derived from poor quality buildings.

As the necessity to mitigate and adapt the built environment to climate change is increasingly accepted around the world¹⁷, sustainable design plays an important role in many of the key markets to which the UK exports architectural services.

For example, 66% of construction projects in Singapore are green projects and 51% in the UAE, while in 2015 China pledged that half of its new urban buildings would meet green building standards from 2020¹⁸.

The UK architecture sector, as an early mover and innovator in sustainable design, is well-placed to respond to the burgeoning demand for greener and more energy efficient buildings in the global market.

14 Committee on Climate Change, '2017 Report to Parliament – Meeting Carbon Budgets: Closing the policy gap'

15 Powell, Jennifer Baumert (2015), "Green Building Services", Journal of International Commerce and Economics. Published electronically October 2015. http://www.usitc.gov/journals/jice_home.htm.p2

16 <https://www.carbontrust.com/news/2013/09/energy-efficiency-in-non-domestic-buildings>

17 For example, the Global Alliance for Buildings and Construction, initiated by the UN Environment Programme, comprises 23 countries and 64 non-state organisations (sub-national, non-governmental organisations and private sector) from all over the world and is intended to increase the pace and scale of actions designed to facilitate the global transition towards low-emission, energy efficient buildings.

18 http://naturalleader.com/wp-content/uploads/2016/10/UTC_White_Paper_Green_Building_China.pdf



Tourism

Tourism is worth £121.1 billion per year to the UK economy, some 7.1% of GDP – it is one of Britain’s primary exports. The UK tourism sector employs almost 3 million people, and is the third largest sector for employment, accounting for 9.5% of total employment. The average inbound tourist from abroad spends £609 during a visit to the UK.¹⁹

Architecture is an important driver of the UK’s tourist economy. Visit Britain notes that the UK’s strongest tourism dimensions are its “vibrant city life and urban attractions”, ranked 4th, and being “rich in historic buildings and monuments”, ranked 5th²⁰. Both modern and historic architecture are important pull factors for tourism and contribute to Britain’s image overseas.

More specifically, the built environment is key to establishing a sense of place in our cities and towns – the ‘brand’ of a location which serves as part of its appeal as a tourist destination.

For example, the iconic modern skyline of London, characterised by skyscrapers like The Shard and Canary Wharf, is an important signifier of the city’s identity as a 21st century global city, while the historic architecture of Bath from its Roman baths and 18th century Palladian buildings was key to it being designated a UNESCO World Heritage Site.

In both cases, the built environment is critical in attracting visitors and conveying the sense of place which drives tourism to the city.

Quantified evidence on the economic contribution of architecture via tourism is relatively limited. A recent report based on data for London suggests that just under 3% of domestic overnight and just over 4% of domestic day visitors to London undertook activities related to architecture.

If similar proportions apply to international visitors (a conservative assumption given that it is likely that the built environment plays a greater role in attracting international visitors, as discussed above) and apply these proportions to expenditure data, the average contribution of architecture related tourism to London’s GVA was estimated at between **£383** and **£454 million** per annum.²¹

19 Tourism Alliance, ‘UK Tourism Statistics 2016’

20 <https://www.visitbritain.org/britain%E2%80%99s-image-overseas>

21 Wingham, Mark (2017), London’s Architectural Sector, GLAEconomics Working Paper 86, p44

CASE STUDY

The Jaguar Land Rover (JLR) Engine Manufacturing Centre, designed by Arup Associates, is located on 185,000 square metres of brownfield land near Wolverhampton and accommodates 1400 staff. The site includes production areas, office space, social support space and a community education centre.

The facility, designed completely in Building Information Modelling (BIM) is one of the largest ever to achieve a BREEAM Excellent environmental assessment. Its sustainable features include natural ventilation, naturally lit office and production spaces, extensive water recycling and the largest photovoltaic rooftop array in the UK. The array's 21,000 PV solar panels provide enough energy to supply 30% of the facility's energy needs, equivalent to 1,600 homes.

The JLR EMC won an RIBA West Midlands Regional Award and an RIBA West Midlands Sustainability Award in 2017, with special recognition given to Arup's ability to provide a fully coordinated design while introducing innovative low energy solutions.

“Sustainable measures applied at this scale become record-breaking achievements”

RIBA West Midlands Awards Panel



Placemaking

Placemaking has both social and economic value, and architecture has a vital role in driving the quality of our surroundings. Better places provide a direct improvement in wellbeing for local residents and workers, by ensuring that the places they live and work are well-designed, attractive and functional. In addition to this important direct benefit, better-designed places have a further indirect benefit by attracting more people or businesses to that place.

There is a well-established literature on the economic benefits of attracting skilled workers and businesses to an area, which can result in productivity improvements through ‘agglomeration’ effects that enhance economic performance.²²

There are three main ways architecture contributes to placemaking:²³

- **Housing:** high quality, affordable housing helps boost jobs by making an area a more attractive place to live and work. This then contributes to productivity benefits through agglomeration.
- **Businesses:** similarly, the price and quality of buildings available for businesses can influence business location choices and attract trade into an area.
- **Local built environment:** the quality of the local built environment, for example amenities such as leisure facilities and green space, also adds to the quality of a place and helps attract people and business.

Architecture also contributes to 21st century placemaking through technological innovation, such as the increasing use of Building Information Modelling (BIM) in design and the rise of Smart Cities. BIM allows every aspect of a building to be modelled digitally and worked on by anyone, reducing risk and minimising rework and abortive costs, and allowing for more integrated, collaborative building. Smart Cities are further driving technological improvements to the places we live by using digital technologies to make buildings and places more efficient, improving not only our buildings but also infrastructure and making places more liveable and resilient.

Architecture is at the forefront of these technological innovations in design and placemaking, and British architecture has been an early mover in embracing these developments, notably in incorporating BIM into design.

The UK Government believes that the global market for smart design and urban systems will reach \$400 billion per annum by 2020 and that the UK should aim to secure 10% of this market²⁴; enabling architects to compete and thrive in this global market will be critical for achieving this goal.

²² Agglomeration benefits relate to the productivity improvements from an increased density of skilled workers and businesses. These include, benefits such as sharing common resources, scale and specialisation, improved matching of workers and firms, and knowledge spillovers. It is important to note that a variety of factors influence agglomeration effects as well as quality of place, such as access to skilled workers and transport connections. For further discussion, see: Frontier Economics (2016), ‘Assessing the productivity benefits of improving inter-city connectivity in Northern England’

²³ Communities and Local Government (2011), ‘Updating the Evidence Base on English Cities’.

²⁴ Department for Business, Innovation & Skills, Smart Cities: Background Paper, October 2013



CASE STUDY

In 2010 a devastating fire virtually destroyed Hastings' Victorian pier. Bought by a community trust and paid for by the Heritage Lottery Fund and crowdfunding efforts by the community, the restored Hastings Pier was designed by dRMM architects. A masterpiece of regeneration, the restoration has turned a smouldering pier in disrepair and decline into a vibrant public space.

dRMM is a global practice. Its projects include residential housing, office spaces and schools in addition to public spaces such as Hastings Pier. The majority of architects and designers that restored Hastings Pier were either born or trained internationally, bringing a global skillset to support a British community asset and regenerate an iconic local landmark.

“The architects and local community have transformed a neglected wreck into a stunning, flexible new pier to delight and inspire visitors and local people.”

Ben Derbyshire, RIBA President

CASE STUDY

Dalston Works, a 10-storey, 121-unit apartment complex in London, is world's largest building constructed from cross-laminated timber (CLT). The landmark project is just one-fifth of the weight of a concrete building of equivalent size and, due to its low weight, the building is taller than was believed to be feasible on its brownfield site.

The timber frame has 50% less embodied CO2 than a traditional concrete frame and the building will be carbon-negative for the first few years of its use. Construction was completed in just 374 days, with the prefabricated frame constructed off-site and delivered in pieces before being assembled; reducing the number of deliveries during construction by 80%.

The project helps address London's urgent need for high-quality, high-density housing whilst also being an innovative and pioneering use of engineered wood.



Access to export markets

We have also seen that the UK exports architecture services to a variety of global markets. At a general level, access to export markets is likely to have effects on architecture that are similar to those observed in other sectors. These include productivity gains that are associated with exporting. Indirect gains include the development of skills and exposure to different practices, acquired through exposure to world markets, which then spill over into architecture services generally, whether in the UK and overseas.

As has been noted, sustainable design and quality placemaking play an important part in a number of key markets to which the UK exports, notably in Asia.

To the extent that UK architecture was an early mover in these developing trends, this enhances its competitiveness in these markets and provides a comparative advantage for UK exports of architectural services. Moreover, its ability to compete in these markets is likely to stimulate innovation and knowledge spillovers that further enhance design in the UK.

“Brand UK”

UK architecture embodies standards for excellence around the world; world-famous British architecture practices like Foster + Partners, Zaha Hadid Architects and Grimshaw Architects design ground-breaking buildings on every continent. This pedigree has supported UK architecture’s status as a global hub for the profession; as we have already seen, UK architecture exports greatly outstrip the size of the sector relative to other EU economies and this is contributed to by the star power of British architects and the iconic buildings they create.

This global architectural pedigree also generates favourable reputational effects for other sectors. This relates to the question of soft power i.e. the notion that certain activities or assets can positively influence perceptions of a country and, amongst other things, enhance market opportunities for the products of that country.

Recent research has focused on the effects of changes in indices of soft power on exports, and found that a 1% increase in the positive perceptions of exporters by an importing country increase bilateral exports flows by 0.5%.²⁵

The UK regularly appears at or near the top of soft power indexes and has a strongly positive global reputation. British architecture, responsible for iconic buildings across the globe, is cited as one factor among a number that contributes positively to the UK’s soft power by influencing perceptions of the UK²⁶.

25 Andrew Rose (2015), “Soft Power Raises Exports”, <http://voxeu.org/article/soft-power-raises-exports>
26 Portland Communications (2017), *The Soft Power 30, A Global Ranking of Soft Power*, p 44

Dependencies between non-market effects, exports and Brexit

There are two main mechanisms through which there are dependencies between non-market effects of architecture and changes potentially resulting from Brexit.

These relate to access to skilled labour, and access to export markets.

Access to skilled labour

As we have seen, the UK architecture sector attracts architects from across the EU and the rest of the world. This access to skilled labour will have an impact on each of the non-market effects we have outlined.

The UK's advantage in green building and placemaking is driven by the unmatched culture of excellence and innovation in UK architecture, which is facilitated by its global workforce.

Being a magnet for international talent is central to the success of UK architecture; over 80% of architects say that it is critical for the profession's future.

Recommendation

The Government should aim to secure a deal with the EU which enables UK business and academic institutions to continue to participate in pan-EU research projects.

Recommendation

The Government should examine what additional freedoms to support research and innovation could be created through grants and tax incentives when EU state aid rules no longer apply.

Brexit Impact Analysis

Modelling the impacts of Brexit on UK architecture

In the previous sections, we identified some of the distinctive features of the UK architecture sector which will be impacted by Brexit:

- UK architecture is more export oriented than its EU counterparts, and its markets are more global than services sectors in the UK generally.
- UK architecture has a significant reliance on skills from the EU.
- Indirect exposure to impacts on sectors which use architectural services.
- A high share of exports to global markets means that we need to consider the impact of trade deals that might occur between the UK and the rest of the world.

We now move on to model the impacts of Brexit for architecture by focusing on changes to restrictions affecting services trade in architecture. We draw on recent work by the OECD looking at the impact of services trade restrictions and other trade policy measures on the levels of trade between countries. This gives an indication of how far trade flows might change in response to changes in trading relationships and the impact of different trade deals.

The OECD Services Trade Restrictiveness Index (STRI) measures the ease of services trade with a country using a scorecard approach. This assesses several specific criteria looking at different types of restriction, for example whether there is a cap on foreign equity holdings or a requirement for staff to be nationals. Scores relating to individual restrictions are then aggregated to give an overall score, with 0 indicating a totally free economy and 1 indicating a totally closed economy.

We also discuss in further detail the nature of restrictions affecting UK architectural exports. Then we consider how exports might be affected if these restrictions were to change, both overall and in relation to specific trading partners.

Restrictions affecting UK architectural exports

£73 million of exports a year are at risk due to Brexit

Restrictions affecting exports fall into several different categories:

- Restrictions to foreign entry
- Restrictions on the movement of people
- Other discriminatory measures
- Barriers to competition
- Regulatory transparency

Services trade agreements could boost trade with: USA by £24 million, China £21 million, UAE £7 million and India £2 million

Some things matter more to some sectors more than others. For example, with financial services or air transport, the main factor is ease of foreign entry, e.g. whether an airline can fly in that country or a bank is allowed to set up operations. Different sectors' scorecards therefore give them different weights in line with this.

It is worth noting that the OECD Services Trade Restrictiveness Index (STRI) calculation does not take account of any bilateral agreements with specific countries, e.g. the fact that the UK has free movement with respect to the EU but not with respect to other countries.

The weightings for different sectors are shown on the page opposite. In the case of professional services such as architecture movement of labour is much more important, as these sectors are labour-intensive.

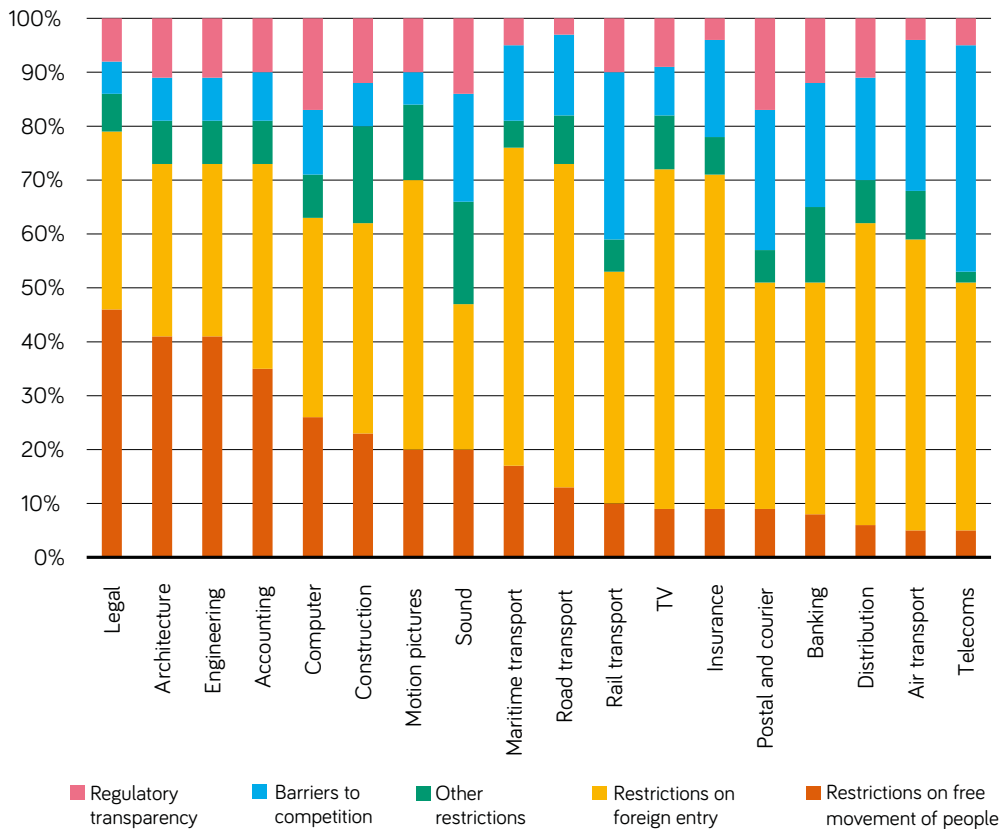
Architecture has the second highest weight attached to movement of labour of any service sector.

This reinforces the point that access to skills is critical for architecture.

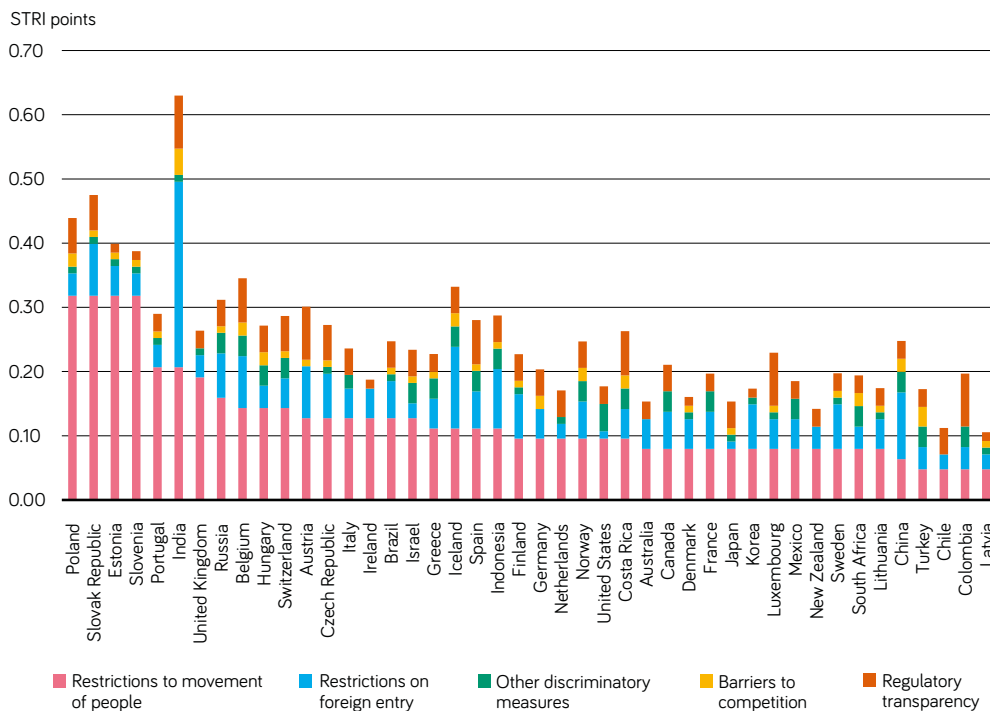
The STRI scores of the UK and other OECD and associate countries are shown opposite. In terms of overall restrictiveness facing the architecture sector, we see that the UK is broadly 'middle of the pack' vis a vis OECD and associate countries, coming in at 16th of 44 countries²⁷. However, the UK is relatively more restrictive in terms of restrictions on the movement of people, being the seventh highest.

²⁷ UK has 26 points overall, versus a simple average of 25 points and median of 23 points.

Relative STRI weightings for service sector industries



STRI weightings of architectural services sectors in OECD countries



The UK's relatively high restrictiveness regarding the movement of people is due to the following restrictions that are not observed among many of the peer countries:

- Quotas on independent services suppliers
- Labour market tests for contractual services suppliers
- Requirement for foreign professionals to practise locally for at least a year
- Requirement for foreign professionals to take local exam
- Six month limit on duration of stay for intra-corporate transferees, contractual and independent services suppliers (average is two years)

Currently, these restrictions are largely bypassed in relation to EU nationals, primarily through the mutual recognition of architects' professional qualifications under the Professional Qualifications Directive²⁸. However, at the point at which free movement of EU nationals ends, these restrictions would then become active. The extent to which these restrictions then affect EU nationals will depend on the terms of the Brexit deal agreed with the EU and whether this gives EU citizens any additional benefit beyond MFN status.

There is also a large degree of variation in the restrictiveness of trading partners. For example, India places very heavy restrictions on foreign entry, and many of the Gulf states have stringent restrictions on commercial presence and free movement.

28 The ARB does not directly recognise any qualifications from outside the United Kingdom (ARB prescribed qualifications) other than those listed under the Professional Qualifications Directive 2005/36/EC when held by EU nationals.



Msheireb Museum, Doha, Qatar.
McAslan + Partners.
© Edmund Sumner

By contrast, the US and Australia (particularly) are relatively open to services, in terms of non-preferential access. China is 18th in overall restrictiveness. It is among the most open in terms of free movement, but is one of the most restrictive jurisdictions in relation to foreign entry.

Recommendation

The Government must ensure that mutual recognition of architects' professional qualifications with the EU is retained as a priority.

Recommendation

The Government should seek new mutual recognition agreements for architects in other large markets to support UK architectural exports.



Impacts of Brexit scenarios

Summary of key modelling findings

- The impact on architecture exports to the EU of a 'No Deal' Brexit moving to MFN trading terms with EU would be a fall in exports of 29% (worth around £20-30 million per year)
- Brexit scenarios with a closer level of integration will lead to smaller reductions depending on the content of the agreement. Access to talent is the key differential between scenarios. A deal which involved, for example, increased restrictions on intra-corporate transfers could reduce exports to the EU by around 7%.
- UK architecture relies significantly on skills from the EU; increasing restrictions on access to skills post-Brexit acts as a tax on UK architecture exports to the EU and the rest of the world.
- Rescinding free movement would reduce exports by around £53 million per year, nearly evenly split between EU markets and non-EU markets.
- Adding these to the market access effects, the cumulative costs of a 'No Deal' Brexit scenario would reduce architecture exports by up to £73 million per year, of which over a third is attributable to a fall in exports to non-EU markets because of knock-on effects via access to skills.
- Service trade agreements with large partners would yield significant benefits in terms of UK exports. For example:
US £24 million; China £21 million; UAE £7 million and India £2 million²⁹
- The findings suggest that for architecture, a 'No Deal' Brexit could be offset or mostly offset if the UK can agree FTAs with one major trade partner (e.g. the US or China) or engage in substantial unilateral liberalisation on a MFN basis. But this assumes that the FTA can come into full implementation at the point of Brexit, which may not be realistic unless there is an extended transition period agreed between the UK and the EU.

²⁹ Note that these estimates are derived from applying reductions in restrictions to historical trade. They likely underestimate gains in markets in which increasing demand driven by other factors such as increasing prosperity and population growth are projected to boost demand. The results also assume that the agreements are immediately implemented in full. In practice, this is unlikely.

Our Brexit scenario analysis takes the form of a ‘what-if?’ analysis, considering the specific characteristics of the architecture sector, notably: its labour-intensity, reliance on global talent and the dominant role played by exports to non-EU markets.

As far as EU-trade impacts are concerned:

- We consider a Brexit outcome that would replicate the status quo in terms of services. This need not necessarily mean continued EU membership; but would require an agreement that replicates current single market arrangements.
- We then model a ‘No Deal’ scenario in which the UK and the EU revert to trading on MFN terms with each other.
- We then consider intermediate scenarios between ‘No Deal’ and the status quo, defining these intermediate scenarios in terms of changes to specific restrictions on services trade.
- The analysis is presented in terms of the value of exports to the EU that may be impacted.

As far as impact on trade outside the EU is concerned:

- We model the impact on UK architecture exports of increased restrictions on access to skills from the EU because of Brexit. This scenario is consistent with a ‘No Deal’ scenario, but also several others in which restrictions on the movement of labour apply (e.g. a free trade agreement between the UK and the EU).
- We model the impact on UK architecture exports of trade liberalisation undertaken with respect to non-EU jurisdictions. This is consistent with any Brexit scenario in which the UK can negotiate trade agreements in services with the rest of the world.
- We combine econometric estimates of the percentage change in trade implied by a trade deal with total UK trade by destination to get cash estimates of the impacts of different Brexit scenarios.

Econometric approach

We draw on work by the OECD, which uses a gravity model approach to estimate services trade between countries, controlling for their size, distance, common language, and other factors. The term 'gravity model' is used because of the strong pattern that trade between countries increases with their size (mass) and proximity.

The gravity model also estimates the effects of services trade restrictiveness, and the effects of trade agreements. This is done by adding in terms for the importer's STRI, the exporter's STRI, and a binary variable to measure whether the countries are in a services trade agreement, or are both in the EEA (signalling deeper services integration).

The results are estimated over a dataset covering 42 countries and 12 different services sectors³⁰. The analysis gives the following results:

- A services trade agreement increases trade by **36%**
- Intra-EEA trade is **4%** higher
- A percentage point increase in the services trade restrictiveness of the exporting country reduces trade by **1.8%**
- A percentage point increase in the restrictiveness of the importer reduces trade by **0.4%**

These impacts multiply. For example, both partners being in the single market (i.e. having a services trade agreement and trading with an EEA partner) increases trade by 41.5% with that partner.

There are several points to emphasise:

- While the services trade agreement and EEA terms are bilateral, the STRI effects are estimated on a uniform Most Favoured Nation (MFN) basis, i.e. do not vary with who your trading partner is. The UK has 26.5 points of STRI overall, though the restrictiveness would be much lower than this for trade with EU countries due to free movement, etc.
- The effect of a services trade agreement between two countries does not reduce a country's STRI to zero. The boost in trade from a services trade agreement is the same as a 16-point reduction in STRI, i.e. less than removing the UK's 26.5 points of STRI. This is consistent with the observation that services trade agreements do not go all the way in removing barriers to trade.

³⁰ Due to lack of country-to-country trade data, architecture is not included. The pooled results give an average effect over the included services sectors. By construction, with their different weightings, the STRI indices are intended to measure restrictiveness on an even basis between sectors, so that a given change in restrictiveness should produce the same response irrespective of sector. Analysis is also run at sector level. Here a degree of variation is observed, which would either reflect quirky patterns in the data (such as measurement error), or the scope for further refinement in how the indices are weighted.

- The exporter STRI has a much larger effect than the importer STRI. This may seem counterintuitive if restrictiveness is conceived of as 'keeping out imports.' However, the fact that own STRI effects dominate reflects the principle that in a price-taking open economy, a tax on imports becomes a tax on exports. In addition:
 - Services trade barriers are not necessarily discriminatory, but may also impose administrative burden on home firms, or act as a signal of it.
 - Imports expose home firms to competition. This may provide a competitive spur, so that they become more efficient and thus become better exporters.
 - Exporting firms need to use services inputs. Imports and access to labour increase the range of available inputs.
 - A more open location increases attractiveness as a hub for serving neighbouring markets.

Impact of Brexit on UK-EU trade

Scenarios in which an agreement is reached that maintains current levels of services trade integration with the EU would see no direct impact on services trade. However, given the reliance of architecture on skills inputs from the EU, a more restrictive immigration system or a climate in which European architects felt the UK was a less attractive place to work would likely have an indirect impact.

The effect of a 'No Deal' Brexit is estimated by modelling a 'switching off' of the effects on trade relating to a services trade agreement and intra-EEA trade. If trade between single market partners is 41.5% higher on average than trade between other partners, then moving to a 'No Deal' relationship with no alternative agreement would be associated with a 29% drop in services trade:

$$(100\% \div 141.5\% = 71\% = 100\% - 29\%)$$

This would suggest reductions in the region of £20 million – £30 million of annual exports³¹.

This is illustrated in the first chart on the page opposite. The dark green bar shows baseline exports that occur under either scenario. The light green bar shows exports facilitated by the single market.

These effects reflect differences observed between trade within deep trade blocs and trade between countries dealing at arms' length. Such relationships, encompassing many different institutions and business value chains, have built up over long period of time. They would not disappear the moment that certain rules or regulations change, but in the long run we would expect to see trade reduced in line with these observed relationships.

Between these two extremes there are a range of intermediate outcomes, if some preferential access arrangements are maintained, but not all. Incremental changes can then be approximated by adding or subtracting various restrictions, computing the impact on the STRI, and then translating this into an estimate of the cash impact on trade.

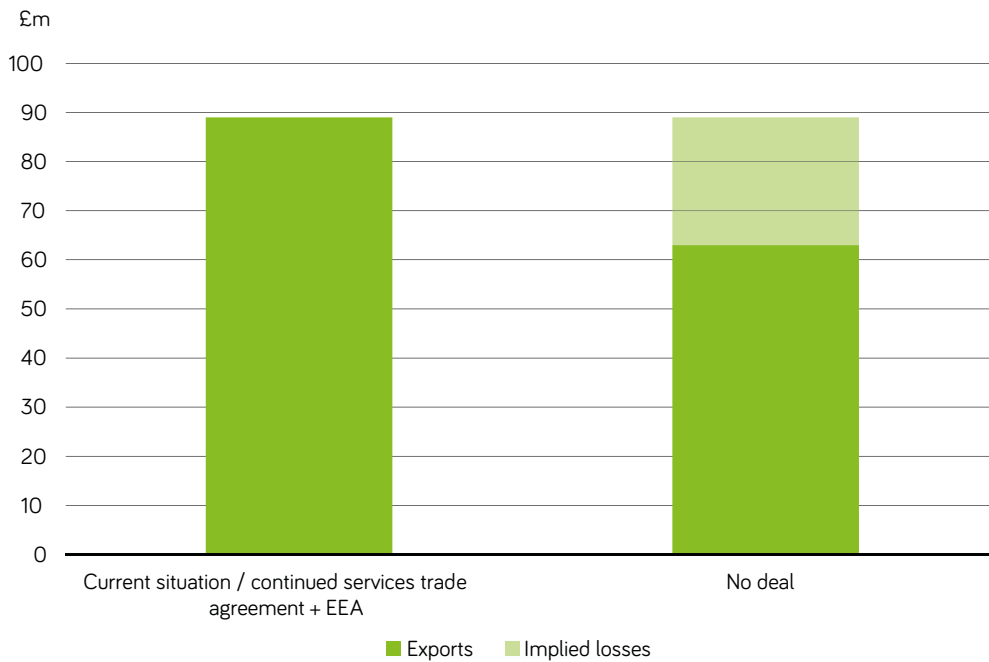
Note, however that goods-only trade agreements have no material impact on services trade. So, whether there is a goods trade agreement with the EU is unlikely to have much impact on the architecture sector.

In the second chart opposite, we show the impact of specific restrictions, currently bypassed with respect to EU trading partners, kicking in. This is done by multiplying the estimated STRI coefficient by the number of STRI points associated with a restriction.

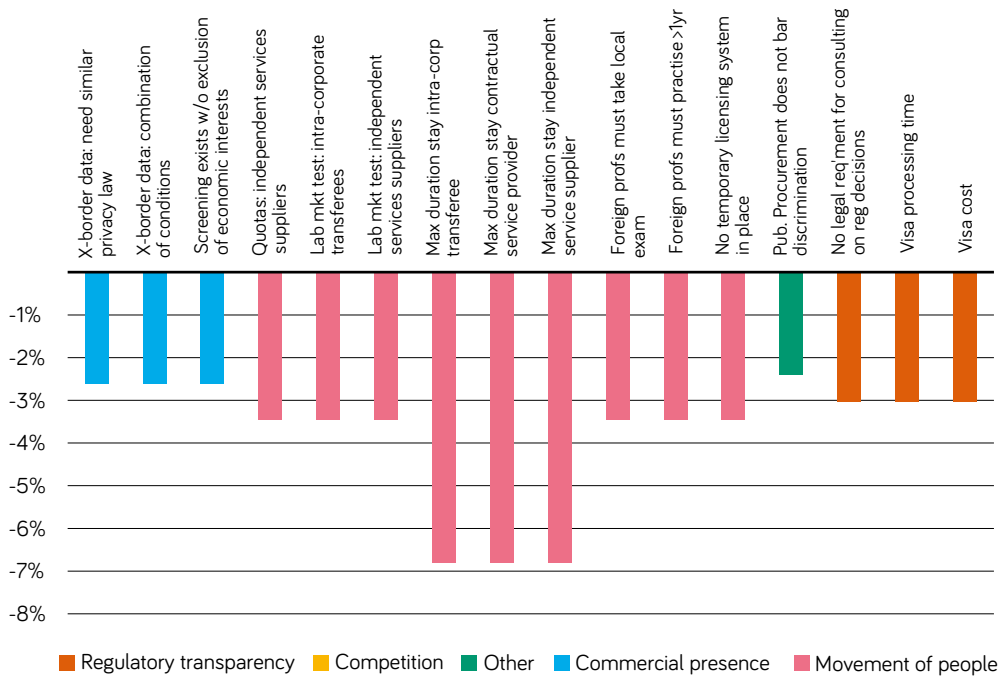
For example, if the general 6-month limit on intra-corporate transferees were to apply to EU citizens, exports to EU countries might be reduced by 7%.

³¹ Specific up-to-date figures for architectural exports to the EU are not available. Europe accounted for 22% of architectural exports in 2013 (£79 million out of £359 million total), compared to 16% in 2014 (£71 million out of £446 million). Applying a mid-point share of 19% to a 2015 total of £468 million would imply £89 million exports to Europe for 2015. This would point to losses in the region of £26 million.

UK architecture exports to EU27 under current regime and No Deal scenario



Impact on UK architecture exports to EU27 of services trade restrictions in a No Deal scenario



Source: Frontier analysis of OECD data

Clearly these estimates are indicative. The econometric approach does not test the impact of any single STRI component, but instead reflects a general STRI effect, combined with the weighting attached to each specific indicator.

As the scorecard is developed to provide a straightforward, measurable and standardized basis on which all the different jurisdictions can be compared, it is unlikely to capture each policy that may affect restrictiveness. However, to the extent that any omitted restrictions are correlated with the indicators included in the scorecard, their effect will be picked up indirectly. For example, wider freedom of movement is not explicitly included, but will be correlated with components of the STRI. Incremental changes in restrictiveness can therefore be interpreted as signalling wider changes³².

Rather than attempt to draw out precise impacts of specific scenarios, the conclusion we draw is that these restrictions are cumulatively important and the level of services integration that can be maintained in relation to the EU is likely to affect the amount of services trade that is achieved. This is not a matter of if, but a matter of degree.

Recommendation

It is essential that the Government seeks a deal with the European Union that maintains mutual market access and avoids non-tariff barriers.

Impacts on adjacent sectors

Architecture's adjacent sectors export a considerable amount to the EU, with around £1.4 billion in engineering and £0.8 billion in construction³³. If 29% of exports to the EU are underpinned by integrated services trade we would expect exports by these sectors to be £640 million a year lower in a 'No Deal' scenario.

The incremental impacts of specific restrictions are similar, especially for engineering, which places weight on the same sort of restrictions as does architecture. In the case of construction, relatively more weight is placed on foreign entry and public procurement rules.

It is worth noting that similar impacts are seen across the built environment sector and the sector is closely bound up with architecture in the value chain, with architects working in these businesses and alongside them on projects.

³² The concept of freedom of movement is more expansive than the issue of services trade restrictiveness. Certain restrictions on services will increase with the loss of freedom of movement, but the associated changes in STRIs will not capture the full effects of rescinding free movement. Hence the estimates presented in subsequent sections of this report on the effects of restricting or rescinding free movement should be treated as a lower bound.

³³ Both figures from OECD TISP. Engineering figure derived from 2010-15 EU mirror data. Construction figure is UK-reported and covers 2011-16.



Impact of Brexit on trade with the rest of the world

The econometric approach set out above does not directly address the impacts that new services trade agreements may have on trade with third-party countries. We examine the impact of Brexit on trade with non-EU countries through the prism of changes to how practices can access EU skills.

As emphasised earlier, UK architecture draws significantly on EU nationals, who drive in the region of £1 billion of the output of the sector, and (at least anecdotally) appear important in the export-orientated part of the sector.

The UK is a global architectural hub, bringing in overseas architectural expertise and exporting to the rest of the world. This hub status is unique within Europe and is facilitated by low services trade restrictiveness.

We have also established that the most important restrictions facing architectural services concern the movement of labour and that the exporter's openness is a key determinant of trade.

Any significant increase in restrictions to EU labour would likely impede the UK's effectiveness as an architecture hub, and increase the cost of practices doing business in more attractive jurisdictions.

We can approximate the knock-on effect of increased UK-EU restrictiveness by assuming that one quarter of it feeds through into trade with the rest of the world, in line with EU nationals' share of the workforce of registered UK architects.

For example, if EU impact is worth 16 STRI points (equivalent to a 29% drop in trade, or £26 million), then rest of world impact would be worth 4 STRI points (equivalent to a 7% drop in trade, or £27 million). If EU architects are relatively more focused in the exporting segment of the UK market, the impact would be greater.

Adding the UK-EU impact of £26 million and UK-rest of world impact of £27 million give a total impact of at least a £53 million reduction in trade per year in a 'No Deal' scenario.

£379 million

architecture exports
to **non-EU** markets

£26 million

at risk due to
Brexit

£89 million

architecture exports
to the **EU**

£27 million

at risk due to
Brexit

Sensitivities in the Brexit impact analysis

The results reported need to be interpreted with caution given the limitations associated with the data. They are likely to be conservative estimates because they do not consider the full range of indirect effects of Brexit on architecture exports. We have not considered the extent to which restrictions on services other than architecture could affect architecture exports. This could occur in two ways:

- Restrictions on services trade can lead to a contraction in demand by these sectors for architectural services.
- Restrictions on services trade can reduce the competitiveness of service sectors that provide inputs to architecture, increasing the cost to the architecture sector of accessing these inputs. This effect is analogous to the skills effect discussed above.

Potential gains from trade liberalisation

The framework above also provides an indication of potential gains to trade resulting from liberalisation. This could happen either through bilateral services agreements, unilateral reductions in UK restrictiveness, or even some combination of STRI reductions.

These impacts are approximated by taking current trade flows and applying the econometric coefficients presented above (e.g. a 36% boost from a service agreement, a 1.8% boost per point of unilateral STRI reduction).

Unfortunately, the necessary trade flow data is not available to draw out this analysis in any detail. Nevertheless, some simple calculations can be made.

- Service trade agreements with large partners would yield significant benefits. US could give £24 million in exports (+37% x £65 million) and China £21 million (+37% x £21 million). The UAE might yield £7 million and India £2 million³⁴.
- These estimates are conservative in that they assume the same proportional effect on trade with each country. The relative gains from a services agreement with, say, India would in fact be very much larger than the average effect, because a services agreement with such a highly restrictive jurisdiction would result in many more restrictions being bypassed. The uniform uplift assumption also means that if trade with a country is currently low, the absolute value of any modelled uplift will be small. In practice, trade could 'step up' to a considerably higher level, particularly if there is high construction demand in a currently restrictive environment. The impacts discussed here relate only to exports by architectural businesses, and would be much larger if we consider the wider built environment sector.

³⁴ These figures use DCMS estimates relating to 2014

- A one-point reduction in UK STRI would increase exports by 1.8%. Some reforms would generate a stronger effect. For example, a removal of quotas on contractual services suppliers would boost exports by 3%. On current levels, this might boost exports by £15 million.
- To offset the £53 million export losses associated with Brexit, around 7 points of unilateral STRI reduction would be needed. 6.4 points of this could be achieved by relaxing duration of stay requirements on intra-corporate transferees and contractual services providers. If both the UK and potential trade partners were to pursue this, 6 points of STRI reduction would be sufficient to offset the £53 million export loss associated with a 'No Deal' Brexit.

Clearly these calculations are highly indicative, as they are built on pioneering analysis of newly created data still subject to refinement. The predictions reflect average relationships observed for a selection of countries and cannot fully address the intricacy of the architectural value chain.

But they do provide an indication of the sorts of trade patterns we might subsequently observe, and how they will be affected by negotiations between the UK and other countries to restrictions on services trade.

Note that unilateral reductions in UK services restrictions vis-à-vis the rest of the world could happen independently of Brexit itself. Mutually negotiated agreements with non-EU trade partners would require a Brexit scenario in which the UK regains the ability to set its external regime on services. This includes outcomes where the UK remains within the EU's customs union for goods trade³⁵.

Recommendation

The Government should prioritise negotiating new trade agreements with large markets that include trade in services and mutual recognition of professional qualifications.

³⁵ Under WTO law, a country may separately negotiate trade agreements for services only. What is not possible is for the UK to negotiate on a sector-by-sector basis (e.g. for architecture only).

Implications of Brexit scenarios for non-market effects

Impact on trade with the EU

Our Brexit impact analysis projects the impacts of shocks to UK-EU trade via various assumptions on future UK-EU trade arrangements. The shock to exports resulting from a loss of access to EU markets was overshadowed by the shock caused by restrictions to access to EU skills. This is because this labour market effect is projected to affect exports across the board and because of the labour-intensity of architecture as a sector.

Similarly, in a 'No Deal' scenario we expect this labour market effect will have a further impact on UK architecture via non-market effects:

- Restrictions on EU architects are likely to affect the extent of innovation in the UK in architecture, particularly in areas such as sustainability. A loss of access to EU research programmes and funding is likely to affect the extent that the UK remains at the cutting edge of innovation in the built environment.
- A reduction in exports is likely to affect the extent to which British architecture remains exposed to, and at the forefront of, innovation in global practice, reducing the spillover of knowledge from international work to practice here.

Impact on trade with the rest of the world

Because UK architecture exports are primarily to non-EU markets, the possibility that post-Brexit trade agreements with these nations could increase market access opportunities for the UK is of interest.

There are two main channels through which non-market effects can contribute to the potential for increasing market access to non-EU markets:

- The pedigree of British architecture in the field of sustainable design and technological innovation gives it a significant competitive advantage in a growing global market, and will create opportunities for British architects if new trade agreements open up access to developing markets.
- The possibility that architecture exports could contribute to enhancing perceptions of UK exports and the UK more broadly³⁶. This contribution to soft power could strengthen the prospects for UK exports generally.



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