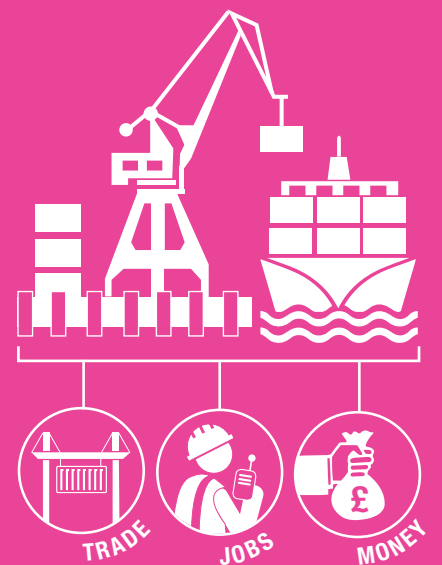


INSIGHTS

2018

SUPERCHARGED FREE PORTS

The ultimate boost for
Britain's economy





Jason Millett

Caroline Lassen

COO for Consultancy

Head of Highways and Ports

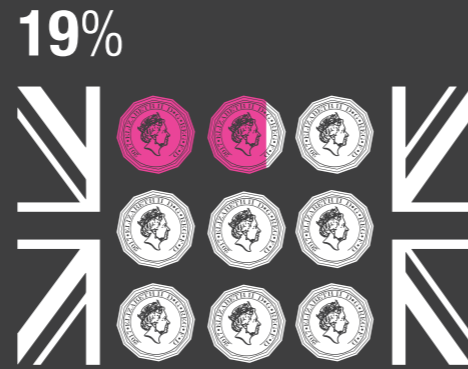
Jason is responsible for our Global Projects & Infrastructure business and is driving our goal to be the UK's leading programme manager by 2022.

Caroline has worked for Mace for the last 15 years in various locations from the Middle East, to Europe and North Africa. She has worked in both a consultancy and a construction delivery capacity. Mace's highways business has grown significantly over the past five years and we have had significant involvement in shaping Highways England's Major Projects Directorate in their transition from Highways Agency to Highways England. We are currently involved in many of their most complex schemes, from the A14 Cambridge to Huntingdon scheme which is currently on site, to the A303 tunnel under the Stonehenge World Heritage site, currently going through public consultation.

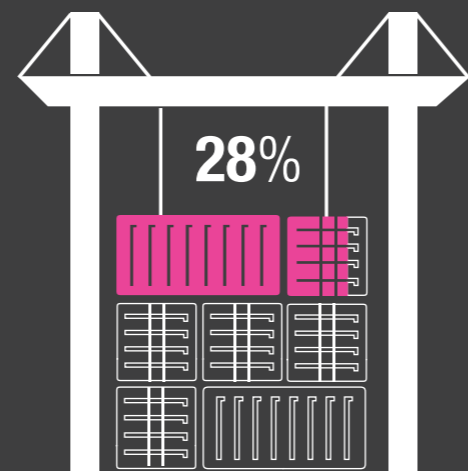
He has over 30 years' industry experience and leads on some of the UK's most significant projects alongside the largest global programmes. He was CLM's programme director for the London 2012 Olympic and Paralympic Games, responsible for the delivery of the Games venues and the commercial closure of the most successful Olympics ever. Prior to joining Mace he was CEO of Bovis Lend Lease.

Jason is a member of the Heathrow Skills Taskforce and was recently an advisor to the Mayor's London Infrastructure Delivery Board, is a fellow of the Chartered Institute of Building, the Royal Institute of Chartered Surveyors and the Association of Project Management.

The North produces...



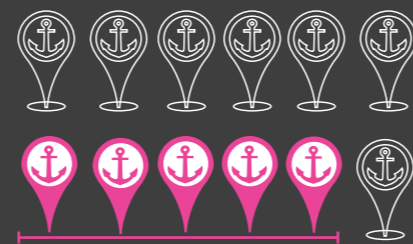
of UK GVAⁱⁱⁱ, but Northern ports handle...



...of UK trade in international goods by tonnage

Five of the UK's 12 major ports, handling over...

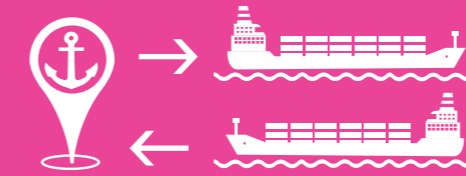
10m ...tonnes of goods annually...



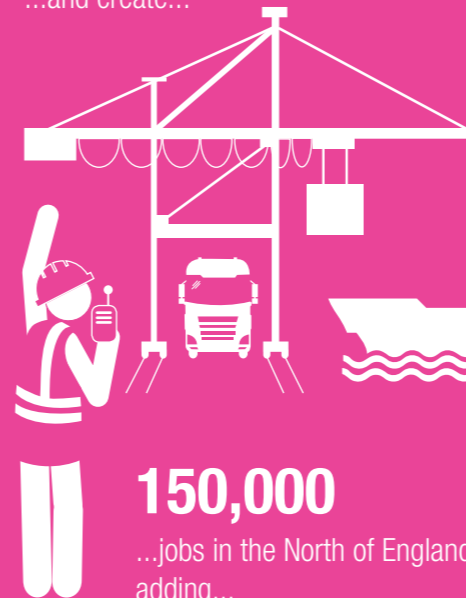
are located in the North^{xii}

Supercharged Free Ports could boost trade by nearly...

£12bn



...and create...



150,000

...jobs in the North of England, adding...



a year to the UK economy

EXECUTIVE SUMMARY

Across the political spectrum there is wide agreement that Britain's economy needs to be rebalanced.

Leaving the EU and the Customs Union can be seized on as an opportunity to enhance the UK's ability to achieve this. We need to look for fresh and creative ideas for a post-Brexit economy that ensures that no region is left behind and businesses are allowed to effectively compete in the global race.

This report focuses on the North of England, the 'Northern Powerhouse', a region that has suffered from a history of decline since its industrial heyday. But has recently seen positive signs of growth and could significantly benefit from our new trading future outside the EU.

With five of the UK's major ports, handling over 10 million tonnes of goods and contributing £5 billion of economic value each year, are located in the North. Improved international connectivity would therefore create significant benefits.

Evidence from around the world shows that the creation of Free Ports - free trade zones which remove tariffs on goods passing through the port or airport - would deliver a major boost to regeneration growth, productivity and job creation. Something which is not possible currently due to being a member of EU Customs Union.

This report argues for the designation of seven Free Ports across the North to build on its existing trading assets and boost growth across the region. But we go further than that. We argue that Free Ports should be combined with

Enterprise Zones to create what we are calling 'Supercharged Free Ports'.

Enterprise Zones are proven to boost growth in specific locations by attracting more business activity and investment. The combination of both concepts would be a powerful force for economic growth and job creation.

Our new independent analysis shows that even on conservative estimates, creating seven Supercharged Free Ports across the North would promote a massive economic impact through increased trade, increased industrial activity and job creation.

Once matured, Supercharged Free Ports could boost trade by nearly £12bn a year and create over 150,000 jobs in the North. The impact of this would be huge for the northern economy, providing a boost to Northern Powerhouse GDP of £9bn a year which is equivalent to an extra £1,500 a year for every household in the North.

Our idea is also extremely popular with the general public. According to private polling conducted for this report in June 2018 by Survation, shows that X% of UK adults are supportive of the proposals with over X% agreeing that it is the right thing to do to leave the EU Customs Union.

It is not Mace's place to take a political view, but we hope that our independent research and detailed analysis stimulate debate and provide timely suggestions about how the UK's economy could be rebalanced and opportunities can be created for those outside of the South East.

REBALANCING THE UK ECONOMY

Addressing the North-South divide is a social and economic imperative for all political parties. It would be wrong to think that this means that London's growth should be shackled or contained in some way. It does not. For the UK to succeed we need both economically vibrant and connected regions as well as a thriving capital city.

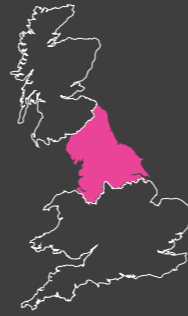
Economic output per head per year in the North lingers at £21,555 with the UK average of £26,621ⁱ. In a balanced economy, where the North produced the same output per head as the rest of the UK, the North would produce £400bn of economic output, £70bn more than it does now. Earlier HM Treasury analysis puts the figure at £56bn more (£62bn in 2016 terms)ⁱⁱ. Accounting for the gap between these two figures, it is safe to say that the prize for a successful Northern Powerhouse remains at over sixty billion. Post-Brexit, we must pursue this prize and this report will show the opportunity for Free Ports to play a substantial part in this.

The North currently produces around 19% of the UK's £1.7tn economic output, measured by Gross Value Added (GVA)ⁱⁱⁱ. It is widely agreed that infrastructure investment to improve connectivity between our great northern cities and the ports, particularly Northern Powerhouse Rail, would support agglomeration, driving up productivity and growth.

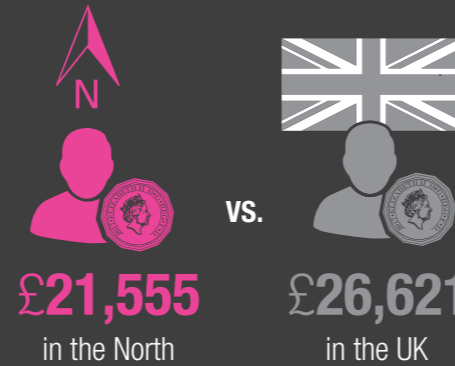
A less discussed opportunity, but as significant, is the effect of increased international connectivity which would boost international trade in goods and could support strong agglomeration around ports, whilst increasing the competition for goods across the Northern Powerhouse and wider domestic economy. With the right transport and trade policies, there is an opportunity to harness these forces to drive up productivity in the North, create high-value jobs outside of London and successfully rebalance the UK economy.

In 2016, the North produced nearly...

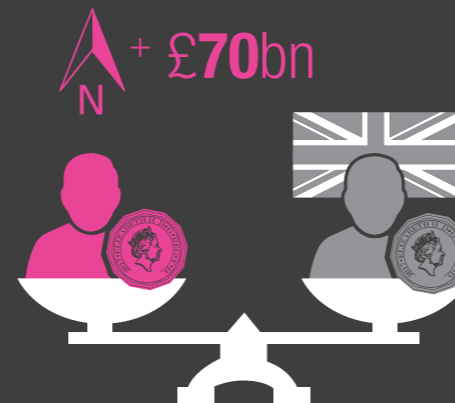
£330bn
of economic output



Economic output per headⁱ



In a balanced economy, the North would produce £400bn, an additional...



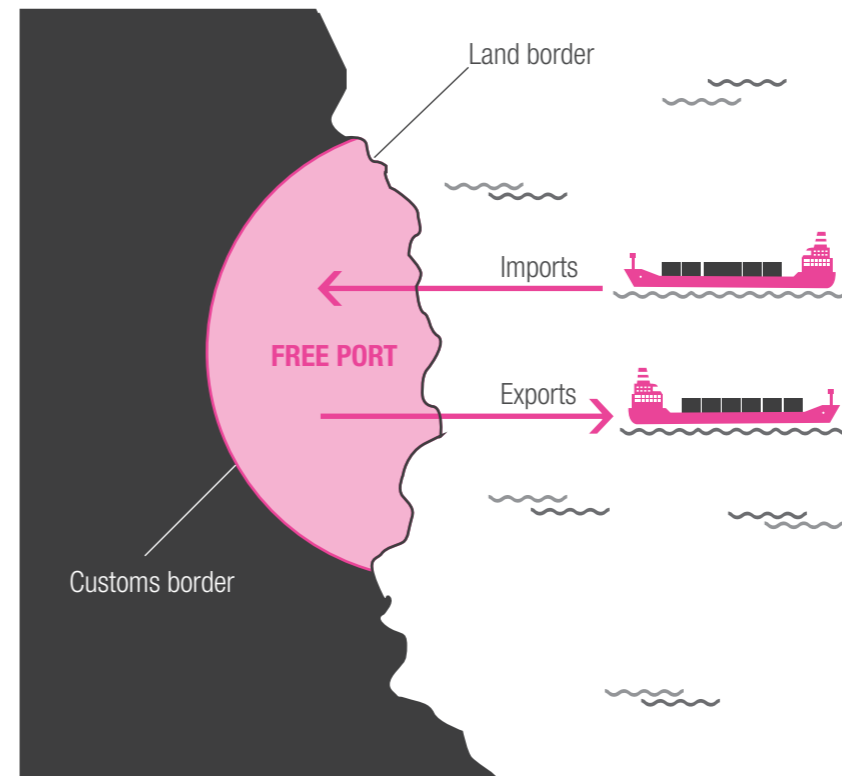
WHAT IS A SUPERCHARGED FREE PORT?

A Free Port is a zone placed around a port or an airport which means that it is outside of the domestic customs area. This results in goods from abroad being able to enter the area without paying domestic import duties and goods leaving the zone for destinations abroad are therefore able to escape domestic duties. This would reduce the price of imported goods used in manufacturing within the Free Port zones and encourage increased trade. We suggest that these Free Ports can become 'Supercharged' by integrating them with enterprise zones – locally designated areas subject to tax relief or targeted local business policies – to encourage Supercharged Free Ports to become business hubs and engines of high-quality job creation in their own right.

There are five Northern Powerhouse ports located in three core 'growth estuaries' that would deliver maximum trade and industry benefits to the North. These growth estuaries – The Humber, Tees Estuary, and Mersey Estuary – are already home to several key industries for future growth, such as renewable energy and advanced manufacturing. The value of trade passing through these ports in 2016 is estimated at nearly £150bn^{iv} – but this figure would be likely to increase substantially with the introduction of Supercharged Free Ports.

Brexit – specifically leaving the EU Customs Union – is an opportunity for the UK to forge free trade deals with the fastest-growing nations around the globe. Supercharged Free Ports will encourage this while also generating less obvious more local benefits too.

The North may have its 'growth estuaries' but they currently operate in relative isolation. The cumulative impact and potential of the business in these estuaries would be far greater if they were better connected, operating more as one economy^v. A connected northern economy would be far more likely to enjoy the benefits of industrial clustering and economic agglomeration: increased competition, specialisation, better access to skilled labour, more choice for local people and the resulting boom in suppliers, customers, and talent. The introduction of Free Ports would open up the UK for trade, and bring together the cities and towns in the Northern economy. The North would be free, open, competitive, and connected both locally, and globally: an exemplar post-Brexit British economy.



WHY PRIORITISE THE NORTH OF ENGLAND?

The North of England's major ports represent a massive growth opportunity for the UK. They sit at the heart of some of the most dynamic national industries and are vital assets for the future of industry in the Northern Powerhouse. These industries include the automotive industry around Port of Tyne, process industries around Teesport, biomass and renewable (notably offshore wind) around the Hull and Humber ports.

Transport for the North identified four prime capabilities and areas of industry that will drive future economic growth and productivity, and – crucially – where the North has existing or likely future comparative advantages internationally:

- advanced manufacturing
- energy
- health innovation
- digital technology

Three of these (apart from digital technology) feature prominently in industrial clusters currently developing around the key northern ports. As previously mentioned, by transforming these northern ports into Supercharged Free Ports, they would benefit from increased trade, the benefits of economic agglomeration, and the additional boost delivered by enterprise zones.

But there is a further economic rationale for selecting these ports in particular: they are in some of the most deprived parts of the UK. At the local authority level Hull ranks 3rd most deprived in England on the Government's Index of Multiple Deprivation.^{vi} That's out of 326 English local authorities. Liverpool ranks 4th worst (Knowsley, incidentally, is 2nd), Manchester 5th worst, and Middlesbrough 6th worst. Nearly a clean-sweep of deprivation. Relatively lofty Newcastle is 53rd worst, though still in the bottom quintile of local authorities.

Additionally, the results of the EU Referendum vote in June 2016 showed a strong inclination from these areas to leave the EU, Kingston upon Hull, Great Grimsby and Hartlepool being some of the highest Leave voting areas in the country. It seems clear that the idea of 'taking back control' particularly resonated with these locations and this intervention would be a demonstration of the advantages they saw from leaving the EU.

We need to nurture clusters of economic development around the northern ports. The economic benefits are reason enough to do so, however delivering Free Ports would also create opportunity and high-value jobs in some of our most deprived communities. Designating them as Supercharged Free Ports that include enterprise zones, together with improved transport connectivity, could be just the way to do it.

The Government's Index of Multiple Deprivation shows that out of **326** local authorities, the following are the most deprived areas of the UK.^{vi}

1 st	Blackpool
2 nd	Knowsley
3 rd	Hull
4 th	Liverpool
5 th	Manchester
6 th	Middlesbrough
53 rd	Newcastle



The two alternative estimates cited by HM Treasury for the impact of increased economic openness and trade on economic output or growth are:^{viii}

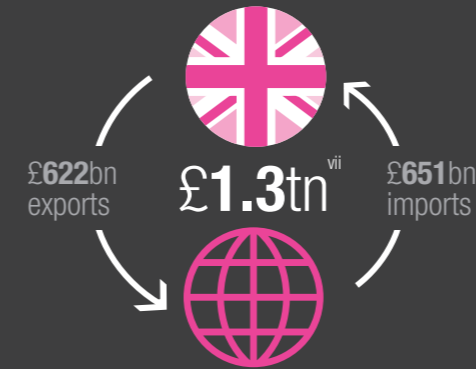
▲ 1 ppt
increase in the trade to GDP ratio,

results in a...
0.17%–0.33%
increase in GDP per capita

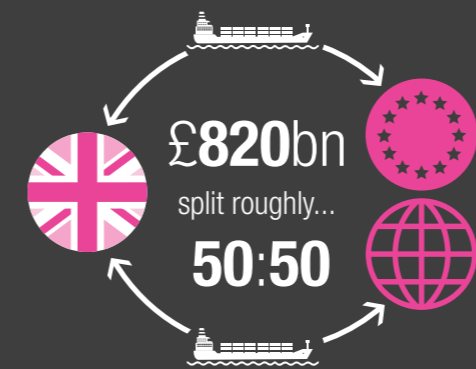
▲ 1%
increase in export growth results in a...

0.5%–0.75%
increase in GDP per capita

Last year, the UK's total trade in goods and services (exports plus imports) was nearly...



The trade in goods alone was over...



...between EU and non-EU countries

Trade in goods and services as a share of UK national income (GDP) is around

60%



WHY TRADE IS A GOOD THING

International trade has a positive impact on economic output and growth. It creates greater openness and interconnectedness; two qualities that enable increased competition, production scale and specialisation on a large international stage, as opposed to a smaller domestic one. In other words, there is greater scope to harness existing and emerging 'comparative advantages' in a bigger international market than a smaller domestic one. For example, the UK is well known for its comparative advantages and strengths in insurance and financial services, as well as pharmaceuticals. Excitingly, the UK also has an emerging comparative advantage in renewable energy.

Greater openness and interconnectedness also support increased innovation in industries, by speeding up the diffusion of new ideas, techniques and the adoption of new technologies across international borders. Thus, international trade boosts productivity.

The UK's total trade in goods and services was nearly £1.3 trillion, with around £622bn of exports and £651bn of imports in the last year.^{viii} The trade in goods alone was just over £820bn, split roughly 50:50 between EU and non-EU countries. Trade in goods and services as a share of UK national income (GDP) is around 60%. Broadly, the higher the share of trade in goods and services of national income, the more open an economy is. Globally, the share average is around 30%, so the UK is relatively a very open economy.

Encouragingly, during the last 30 years, the nominal value of UK international trade has grown on average 5% a year, and has outpaced nominal GDP growth of 3.5 to 4%.

The UK is – and always has been – a trading nation. In a recent study, HM Treasury cite two alternative estimates by well respected academics for the impact of increased economic openness and trade on economic output or growth:^{viii}

- a 1 ppt increase in the trade to GDP ratio results in a 0.17% to 0.33% increase in GDP per capita
- a 1% increase in export growth results in 0.5% to 0.75% growth in GDP per capita.

In other words, the more open the economy is, the higher it's GDP per capita, other things being the same. Further, the stronger the growth in international trade, the stronger the growth in national GDP (GVA). That provides an economic rationale for Supercharged Free Ports throughout the Northern Powerhouse: if they can boost trade growth then they should boost the growth in GDP per capita. Applied selectively to ports in the North, these Free Ports could support a rebalancing of the UK economy.

Northern powerhouse strategies that prioritise connectivity should recognise that the ports are important nodes that facilitate global connectivity.

Institute for Public Policy Research^{ix}

A successful Northern Powerhouse project must think long-term, and think globally.

In layman's terms, our analysis shows that a policy of Supercharged Free Ports would deliver a boost to Northern Powerhouse GDP of £9bn per year after 20 years: a sum that, in today's money, would close the gap between Northern and Southern GVA per head by 10-15%. This equates to an extra £1,500 per year for every northern household and would translate into over 150,000 high value-added permanent jobs.

In its One North publication, the Government and Transport for the North^x noted the importance of "a clearly prioritised multi-modal freight strategy for the North to support trade and freight movement within the North and to national/international markets." With agreement across the political divide, the appetite in the policy realm is clearly there. What then is necessary to make the Supercharged Free Ports vision a success? We have identified two areas of focus.

First, a world class transport system must better link up the individual cities and ports in the North, to allow them to function as a single economy. There are three components to this:

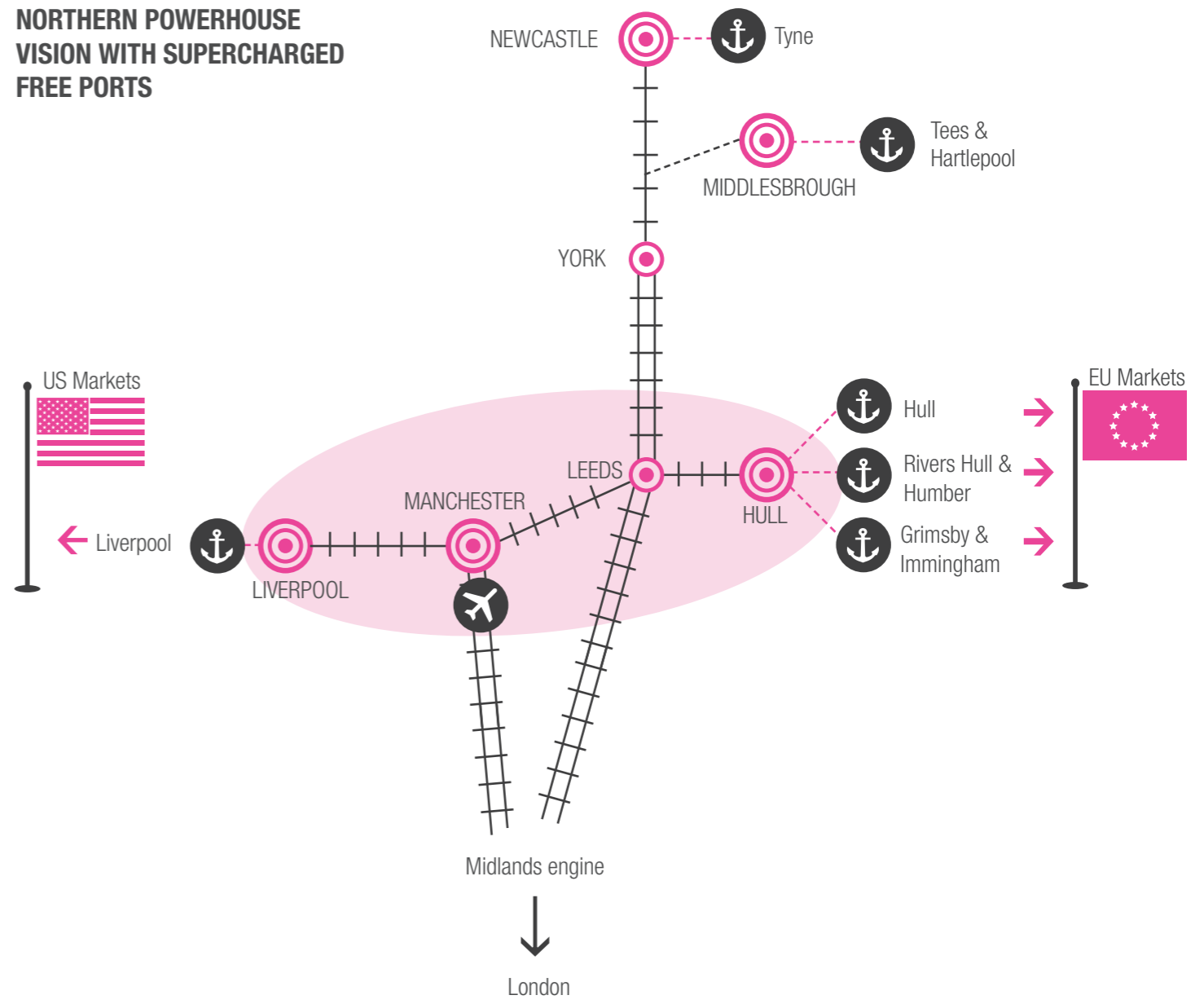
(1) Improved East-West connectivity through the proposed Northern Powerhouse Rail (NPR) scheme which should connect up cities and a number of the key northern ports, from Liverpool in the West to Hull and up to Newcastle in the East. Under this vision, more reliable, more frequent and quicker journeys would be possible.

(2) Improved North-South connectivity with the Government's existing commitment to the full High Speed 2 'Y' network that will hopefully intersect NPR with smooth interchanges at Manchester and Leeds (depending on the development of the plans for stations at these locations).

(3) The possibility of an East-West international 'freight super corridor', an idea also posited by the Institute for Public Policy Research^{xi}, running from Liverpool to Hull, the purpose being to link Atlantic shipping (e.g. US, Canada) and continental Europe. Although a totally different scale and engineering feat, the purpose would be similar to that of say, the Panama or Suez canals, which connect the shipping of different oceans and seas.

Second, a network of Supercharged Free Ports throughout the Northern Powerhouse, designated according to where they can best support existing or potential industrial clusters, help alleviate economic deprivation and boost economic growth. On that assessment, we suggest seven locations – Grimsby & Immingham, Hull, Rivers Hull & Humber, Teesport & Hartlepool, Tyne, and Liverpool, as well as Manchester airport.

NORTHERN POWERHOUSE VISION WITH SUPERCHARGED FREE PORTS



KEY

	HS2		GVA (NPR + Free Port)		Supercharged Free Port
	NPR (Northern Powerhouse Rail)		GVA (NPR <u>no</u> Free Port)		Supercharged Free Airport
	International 'freight super corridor'		GVA (<u>no</u> NPR, <u>no</u> Free Port)		

THE ECONOMIC CONTRIBUTION OF THE NORTHERN PORTS

There are twelve major ports operating in the UK handling trade goods with a tonnage more than 10 million annually.^{xii} Five of them are based in the North: Grimsby & Immingham, Hull, Rivers Hull & Humber, Liverpool, and Tees & Hartlepool.

These five major northern ports alone handled 133 million tonnes of trade goods in 2016.^{xiii} That is 28% of the UK total of 484 million tonnes. They also contribute £4.4bn to £5.5bn to the UK economy, or 1.3% to 1.7% of total Northern economic output of around £330bn. This excludes the benefits to the economy from induced industrial clustering and international trade.

Two recent studies, one by Centre for Economics and Business Research (CEBR) in 2017, and one by Oxford Economics in 2015, have looked at the economic impact of UK ports.

In both studies, the economic impacts are broken down into three parts: direct, indirect and induced impacts ^{xiv, xv}.

Direct - the employment and output by the UK ports sector itself, including cargo handling, storage and warehousing, the construction of related-infrastructure and support services.

Indirect - the employment and output supported through the ports sector's procurement of inputs of goods and services from its UK-based supply chain.

Induced - the employment and output supported by the spending of those directly or indirectly employed in the UK ports sector spending their wages. This helps to support jobs in retail and leisure outlets, companies producing consumer goods and in a range of service industries.

The more recent CEBR study, finds that UK ports directly contribute £7.6bn to GVA and support around 100,000 jobs. Adding the wider indirect and induced effects, the figures are £23.8bn GVA and 700,000 jobs. In addition to this, port jobs are high value-added, with each job creating around £65,000 value added a year (based on the Oxford Economics figures).

For the Northern ports, taken together, the studies found similar direct economic and jobs impacts in the Northern regions: around £2bn in GVA and 30,000 jobs. The CEBR study finds more significant wider (indirect and induced) economic and jobs impacts – this could, however, be due to different methodological approaches and modelling assumptions.

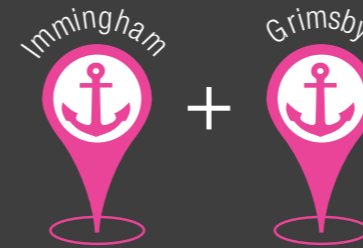
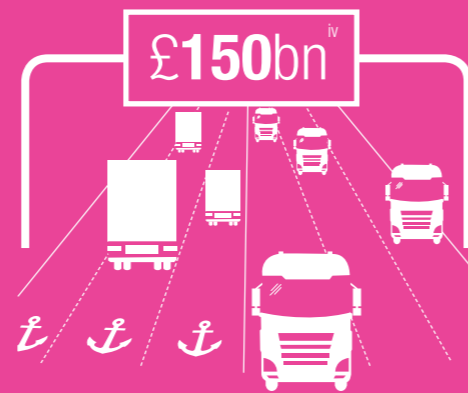
Looking at both studies, Northern ports support around 30,000 direct jobs, and 75,000 to 113,000 direct, indirect, and induced jobs. The Gross Value Added impacts (i.e. the impact on economic output) are no less significant, with the Northern ports directly contributing around £2bn to the UK economy each year and supporting £4.4bn to £5.5bn GVA when the wider economic effects are included.



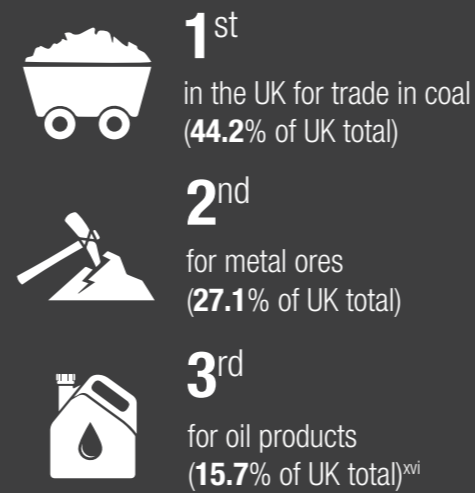
In 2016, these five major northern ports alone handled...



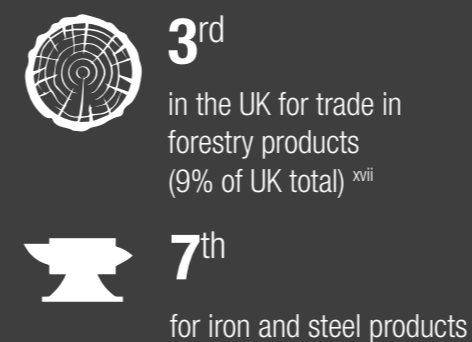
The value of trade passing through these ports in 2016 was estimated at nearly...



Immingham and Grimsby Ports combined are...



Hull port is...



The major Northern Ports

We have seen the economic benefits of Northern ports: that their GVA contributes around £5.0bn to the Northern Powerhouse and UK economy each year, and that they support thousands of jobs. To understand the potential benefits of Free Ports or our proposed Supercharged versions, it's important to understand the industries they directly serve through the handling of vital trade and cargo.

Port of Immingham

The Port of Immingham (Immingham Docks) is located on the south bank of the Humber Estuary, between Kingston-upon-Hull and Grimsby a short distance away. It is the UK's largest port, handling nearly 55 million tonnes of trade cargo a year. That trade is worth £62bn a year.

By volume, around half the trade passing through Immingham is oil and coal and overwhelmingly imports. Nearby Grimsby port is associated mostly with the import of cars.

Immingham & Grimsby combined is: 1st in the UK for trade in coal (44.2% of UK total), 2nd for metal ores (27.1%), 3rd for oil products (15.7%), 5th for forestry products (5.3%), 8th in UK for crude oil (6.8%) and for iron and steel products (6.3%)^{xvi}.

Like the other ports in the Humber there is a strategic focus on energy, including renewables, but also, for Immingham, the growth in biomass imports as coal use continues to decline. It is a key supplier of the

nearby Drax coal-fired and biomass power station in Selby, Yorkshire, which generates 8% of the UK's electricity.

Port of Hull

The Port of Hull is located on the North bank of the Humber Estuary. It is the UK's 11th biggest port and the North's 4th largest by trade volume, handling 10 million tonnes of cargo a year. It is also the North's 4th latest by trade value, at £12bn a year.

The Port of Hull specialises in handling forestry (soft wood) products and steel. It is: 3rd in the UK for trade in forestry products (9% of UK total), 7th for iron and steel products ^{xvii}.

The port is the focus of the Humber's burgeoning renewable energy sector: amongst other things, the port's owners are working on the 'Green Port Hull' development. The Port of Hull is also the only passenger port on the Humber.

Liverpool Port

Liverpool Port is located on the east and west side of the River Mersey. It is the UK's 5th largest port and the North's second largest by trade volume, handling 32 million tonnes of cargo a year. It is also the North's second largest by trade value, at £36.5bn.

A significant chunk of the trade is oil and a diverse range of commodities. Agricultural products are a key component of trade, with a sixth of the UK's trade in agricultural goods passing through its doors.

Liverpool is 1st in the UK for trade in agricultural products (16.6% of UK total), 2nd for iron and steel products (8.9%), 3rd for metal ores (11.1%), 6th in the UK for crude oil (10.3%)^{xviii}.

The Port of Liverpool plays an important role for the process industries. These include food processing - the port's grain terminal is one of the largest in the UK.

Teesport

Teesport is located on the River Tees and is around three miles east of Middlesbrough. Together with the Port of Hartlepool, it handles around 27 million tonnes of cargo a year; the 9th most in the UK and 3rd most in the North. The trade is worth £17bn a year, also the 3rd highest in the North.

Teesport is mostly associated with the handling of steel, petrochemical, and manufactured goods. It is a major net exporter. Together with Hartlepool, it is: 2nd in UK for crude oil 13.9% (and 7th for oil products), 4th in UK for liquefied gas 9.8%, 6th for iron and steel products (6.6%)^{xix}.

Teesport is the logistical hub for the commodity chemical and steel companies that are members of the Northeast of England Process Industrial Cluster (NEPIC). Companies in the Cluster significantly contribute to making the region the only net exporting one in the UK. It is also a major energy hub for the UK.

The Northern ports not only play an important role in handling and facilitating the trade of goods internationally and domestically, but in supporting and servicing the newly emerging industries and clusters of the Northern Powerhouse including, most obviously, renewable energy and offshore wind.

The major Northern ports could be considered in the context of three core industry clusters, based around the estuaries of the Humber in Yorkshire & Humber, the Tees in the North East and the Mersey in the North West. These areas are primed for the intersection of growing industry and moving trade: Humber, for instance, is at the forefront of the renewables energy industry, and the value of trade passing through the Humber Estuary (all three of its ports), is thought to be around £75bn a year.

Three key northern economic clusters exist around Northern port estuaries:

Humber Estuary ports
= energy (including renewables)

Tees Estuary ports
= petrochemicals and pharmaceuticals

Mersey Estuary ports
= food processing and advanced manufacturing

Let's return to the Humber Estuary – the 'Energy Estuary' – and take a closer look at its prospects and potential.



Liverpool Port is...



1st
in the UK for trade in agricultural products (16.6% of UK total)



2nd
for iron and steel products (8.9% of UK total)



3rd
for metal ores (11.1% of UK total)^{xviii}



Teesport, together with Hartlepool, are...



2nd
in the UK for trade for crude oil (13.9% of UK total)



4th
for liquefied gas (9.8% of UK total)



7th
for oil products^{xix}

CASE STUDY: THE HUMBER ESTUARY

The UK's 'Energy Estuary' is home to a world class offshore wind hub and the UK's busiest port by tonnage (Immingham). It is ideally located to take advantage of the massive UK offshore wind opportunity. 80% of all North Sea offshore wind farms and 60% of the entire European market for renewable energy is within 12 hours reach of the Humber. Plus it already has a 3,000 acre Enterprise Zone with generous capital allowances.

The Humber is leading the way within the UK as a world leader in offshore wind for size of market and deployment. The Enterprise Zone offers space for offshore wind manufacturers and their supply chains to co-locate and make cost reductions on a major scale.

These targeted interventions have delivered benefits to the local area and increased its commercial and industrial profile: Siemens have built two factories in the area. Together with Associated British Ports, they have invested £310m and created over 1,000 direct jobs in Green Port Hull (with at least 300 temporary jobs during construction) to establish the company's only UK wind turbine blade production facility, along with its logistics and services centre.

It's not just Siemens that has recognised the area's strength of industry: Able UK is investing £450m in its ports facility near Grimsby – the Able Marine Energy Park – to attract a truly integrated offshore wind and renewable energy cluster. This investment will create 1.3km of new deep-water riverside berths suitable for offshore wind installation vessels. It will provide a facility for the manufacture, storage, assembly and deployment of the next generation of offshore wind turbines, and will create 4,100 jobs when complete.

The Humber also has the UK's most established and successful operations and maintenance bases - Centrica, DONG Energy, E.ON, Siemens, MHI Vestas Offshore and their associated supply chains - have established bases at the Port of Grimsby to serve offshore wind farms. Humberside Airport, the UK's second busiest heliport, also serves the offshore wind, oil and gas industries. All in all, around 25,000 are employed in advanced engineering in the Humber with GVA valued at around £70,000 per job.

The successes of the Humber – the 'Energy Estuary' – demonstrate the sheer scale of sector-specific successes that can be achieved with strategic policy interventions.

The introduction of Supercharged Free Ports could help to replicate and develop success of this scale across the North. Ready free trade at Northern ports and airports would encourage the trade and sale of industry produce while drawing global attention to the thriving industries where the UK has unique expertise.

A Brexit that takes us outside the Customs Union provides an opportunity to embed strategically placed Supercharged Free Ports throughout the Northern Powerhouse, as part of an outward looking post-Brexit UK trade policy.

Our approach

Here we provide a high-level explanation of our analysis and the benefits of creating Supercharged Free Ports. Our model is based on UK trade policy assumptions post our exit from the EU and the large amount of data from existing Free Ports (or Free Trade Zones) from around the world – particularly the USA. For a detailed technical explanation of our economic model, assumptions, the pessimistic, central and optimistic breakdowns of our results please see the appendix.

We envisage a UK Supercharged Free Port policy applied to seven Northern Powerhouse ports, five based around the three growth estuaries:

1. Immingham & Grimsby Ports (Humber)
2. Hull Port (Humber)
3. Rivers Hull & Humber (Humber)
4. Tees & Hartlepool (Tees)
5. Liverpool (Mersey)
6. Tyne
7. Manchester Airport

The value of trade passing through these ports in 2016 is estimated at nearly £150bn. This is projected to rise to around £170bn by 2021, in today's money. 2021 is the assumed year that the post-Brexit transition period comes to an end and the year we assume a Supercharged Free Port policy becomes possible.

These designated ports and airports would not impose import tariffs on goods entering the Supercharged Free Port zone, whether by EU-origin or non-EU origin.

They would therefore have zero tariff barriers and would not need to apply rules of origin, a key non-tariff barrier. This would reduce the price of imported goods for use in production by factories based in the Supercharged Free Port zones and induce further agglomeration and industrial clustering effects to those existing.

The fact that these zones are 'Supercharged' means they have Enterprise Zones layered onto them. Indeed, some Enterprise Zone arrangements already exist (e.g. Hull), with generous capital allowances to encourage higher levels of investment by the capital-intensive industries, including in the form of Foreign Direct Investment. These industries are fundamental to the creation of high value-added jobs.

UK Trade Policy Context

Naturally, predicting UK trade policy in the post-Brexit world is not easy. But plausible assumptions are needed in order to establish a post-Brexit UK Trade Policy baseline, against which we can assess the potential impact of our seven Northern Supercharged Free Ports.

Timings also need to be considered. Brexit day is on 29 March 2019, but with a two-year transition during which the same EU trade rules apply, we assume the post-Brexit UK trade policy applies from 29 March 2021.

Based on this, the following UK trade policy appears plausible:

- UK imposes tariffs on EU and non-EU imports of a reciprocal nature
- UK gains EU 'favoured nation' status post-Brexit
- UK strikes an early free trade deal with the USA and Canada, ready for 2021. This is broadly equivalent to our future trade deal with the EU.
- UK maintains most EU regulations governing the trade of UK goods in the EU single market
- EU-UK non-tariff barriers are: rules of origin applied in full (proof that goods originated from EU and attract the favourable 2% tariff), minimal regulatory, zero quotas
- Non-EU-UK non-tariff barriers: rules of origin applied in full, full regulatory alignment (meeting EU-UK regulations), zero quotas

The US equivalent of Free Ports are Foreign Trade Zones (FTZ)



US trade data from 1996–2016 shows an average...



...in the nominal value of FTZ trade, from \$60bn to £300bn^{xx}

US FTZ now account for just under...



Learning from other countries

The US equivalent of Free Ports, namely US Foreign Trade Zones (FTZs), can shed some light on the potential of UK Free Ports to boost UK trade growth rates.

US trade data from 1996–2016^{xx, xxi} show both the growth in their trade and FTZ trade specifically:

- an average 5% p.a. growth in the nominal value of all US trade, from \$1.4 trillion to \$3.6 trillion over the period
- an average 10% p.a. growth in the nominal value of FTZ trade, from \$60 billion to \$300 billion (i.e. US FTZ now just under 10% of all US trade)
- an average 8% p.a. growth in the nominal value of FTZ trade, adjusted for the growth in US FTZs - from 134 to 195 zones

These US figures suggest that, with the average growth in UK trade at around 5% p.a.^{xxii} during the last 10 and 30 years, Free Port status could reasonably generate an additional 2 to 3 percentage point (ppt) to 'Free Port trade' growth.

However, it is unlikely that such large impacts could come through price response effects alone. Otherwise, implausibly large price responses - price elasticities of demand - are implied. The missing ingredient, therefore, is likely to be the induced agglomeration and cluster effects brought about by the freer trade policy as well as, possibly, by other policy interventions such as improved infrastructure (e.g. rail connectivity) and Enterprise Zones.

THE BENEFITS

Using our modelling, which was conducted by former HM Treasury economics and senior economic advisor at the Department for Communities and Local Government, suggests that, under the 'optimistic' assumptions, there could be a £17.9bn a year increase in trade value after 20 years, in nominal terms. This is equivalent to £12bn a year in today's money^{xxiii}.

This would translate in up to a £13.4bn a year increase in Northern Gross Value Added after 20 years, in nominal terms. This is broadly equivalent to £9bn a year in today's money, and an additional £1,500 a year for every Northern household.

It would be sufficient to close the North's productivity gap with the rest of the UK by 10-15%. Assuming high-value-added jobs are created, averaging £60,000 GVA per job it also implies job creation in the order of +150,000. These are new, high-value permanent jobs, after 20 years of growth and not requiring any redistributive mechanisms that move money from wealthier areas to those more deprived.

If you look at our localised modelling around the individual ports and airport themselves, those with the most to gain are Grimsby & Immingham, Liverpool and Tees & Hartlepool. Although the benefits to the other areas identified are also substantial and are a key part of regenerating the whole of the North.

Modelled economic impact of Free and Supercharged Free Ports, by 2041

	Free Port* GVA £ million (real)	Free Port Jobs	Supercharged GVA £ million (real)	Supercharged Jobs
Grimsby & Immingham	+2,255	+37,583	+3,842	+64,033
Hull	+434	+7,233	+739	+12,317
Liverpool	+1,330	+22,167	+2,265	+37,750
Manchester airport	+212	+3,533	+361	+6,017
Rivers Hull & Humber	+117	+1,950	+199	+3,317
Tees & Hartlepool	+619	+10,317	+1,055	+17,583
Tyne	+302	+5,033	+515	+8,583
Total	+5,269	+87,817	+8,975	+149,583

*assumes half the 'agglomeration effect' (indirect price effect) attributable to FP and half to EZ.

*direct 'price effect' ascribed entirely to FP.

SEIZING THE OPPORTUNITY



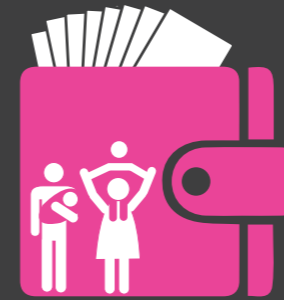
Under the 'optimistic' assumptions Supercharged Free Ports could increase Northern GVA by...

£13.4bn

a year, after 20 years.

This is broadly equivalent to **£9bn** a year in today's money, and an additional...

£1,500



...a year for every Northern household.

Whichever way you voted in the EU Referendum, in a post-Brexit world, Supercharged Free Ports throughout the Northern Powerhouse are a massive opportunity to close the North-UK productivity gap by up to 15%. As our modelling suggests, they could play a significant role in rebalancing the UK economy and creating high-quality jobs in areas of high deprivation. Uniquely amongst the various policy levers available, they would do so not through redistributive means – i.e. making the North richer by taxing the South - but by making the North richer through the gains from trade and encouraging business growth, the fabled win-win scenario.

Northern Supercharged Free Ports make a great deal of economic and financial sense in other ways too, in the public spending context. We are about to embark on a journey of public investment in Northern Powerhouse infrastructure of many billions of pounds. That new infrastructure is needed to transform the North of England into the Northern Powerhouse. Supercharged Free Ports would enhance the returns to those vast public investments, improving the balance of risk-reward and making their business cases even more attractive.

Rebalancing the UK economy will require a strategy that supports the growth of new high value-added industries and reduces our dependency on financial services and London. What better way to do that than support the high growth potential, high value-added industries of the future and

target areas of high-deprivation at the same time? The UK has existing or emerging comparative advantages in pharmaceuticals, car manufacturing, advanced manufacturing, as well as renewables. With its surrounding seas, the UK is thought to harbour half of the continent of Europe's off shore wind resource. Could that resource be as important to the UK economy in the future as North Sea oil was in the past?

Many of these industries already have clusters around the Northern ports. That is why the Northern ports present such a huge opportunity. Such a move would position the UK economy as one of the most open, free market economies in the world, more so even than today.

Supercharged Free Ports would be a measured approach to a post-Brexit free trade policy. They are, above all, a positive vision of post-Brexit Britain as a leading free market and open economy. Global Britain can truly be led by the North and politicians of all stripes should see the enormous opportunity that could lie ahead from the policy idea.

Biggest UK ports ranked by trade volume, 2016

Port	Region	Total Trade Volume, thousand tonnes	International Trade Value
Grimsby & Immingham	Yorkshire & Humber	54,403	£61.9bn*
London	London	50,380	£53.5bn*
Southampton	South East	36,046	£71.4bn*
Milford Haven	Wales	34,768	£14.4bn*
Liverpool	North West	31,901	£36.5bn*
Felixstowe	East	28,202	£74.5bn*
Forth	Scotland	27,439	£16.0bn*
Dover	South East	27,326	£69.5bn*
Tees and Hartlepool	North East	26,873	£17.0bn*
Belfast	Northern Ireland	17,553	£4.7bn*
Hull	Yorkshire & Humber	10,167	£11.9bn*
Rivers Hull and Humber	Yorkshire & Humber	10,155	£3.2bn*
Tyne	North East	3,655	£7.9bn*
Manchester Airport	North West	< 1,000	£6.0bn**

*2014 figures. The value of all UK trade in 2016 was around 3% higher than 2014. Sources: UK Port Freight Statistics, Table 101, ONS^{ov} The Value of Goods Passing Through UK Ports, MDS transmodel, 2016

Current UK trade policy (while within the EU): Estimated tariff and non-tariff barriers (until 2021)

	Tariff applied by UK	Non-tariff barriers	Total
EU imports	0.0%	0.0%	0.0%
Non-EU imports	5.0%	10.0%**	15.0%

** regulatory & rules of origin

Post-Brexit UK trade policy: Assumed tariff and non-tariff barriers (from 2021)

	Tariff applied by UK	Non-tariff barriers	Total
EU imports	2.0%	5.0%*	7.0%
US & CA imports	2.0%	10.0%**	12.0%
Other imports	5.5%	10.0%**	15.5%

*rules of origin ** regulatory & rules of origin

Modelling assumptions

- Applied only to seven Northern Powerhouse ports from 2021, including those in the three 'growth estuaries': the ports of Grimsby & Immingham, Hull, Tees & Hartlepool, and Liverpool, as well as Tyne and Manchester Airport. Today around £150bn of trade passes through these, projected in our modelling to rise to £170bn by 2021, in today's money.
- Zero per cent tariff applied to the import of EU and Non-EU goods, that do not subsequently enter the UK domestic market
- No requirement for rules of origin on all goods imports that do not subsequently enter the UK domestic market. Regulatory requirements remain by default (though ultimately determined by the destination markets, not the UK)
- Imports and exports of goods
 - 50% EU and 50% non-EU, 60% imports and 40% exports
 - A baseline (counterfactual) growth in the value of UK international trade - exports plus imports - of 5% p.a. in nominal terms, close to the 10 and 30-year UK historical averages

- Free Port & Supercharged Free Port impact on UK trade
 - 10% of imports to UK Free Ports do not subsequently enter the UK domestic market. These attract the favourable zero tariff or an inverted tariff and have no rules of origin ('Free Port imports'). The other 90% ultimately enter the UK domestic market and with the appropriate tariffs and non-tariff requirements.
 - In year one (2021), this deprives HM Treasury of import duties on £17bn of goods, versus the post-Brexit national policy counterfactual (table A). With a blended average tariff of 3.2% this implies nearly £550m p.a., ignoring behavioural-response effects that will generate revenue.
 - A 1% increase in 'Free Port imports' delivers 1 per cent increase in 'Free Port exports' (what comes into the Freeport and is used in production, goes out again)

UK trade policy post-Brexit: assumed tariff and non-tariff barriers (from 2021)

	TB & NTB	Trade share
EU imports	7.0%*	50%
US & CA imports	12.0%*	10%
Other imports	15.5%**	40%
Blended	10.9%	100%

NTB include *rules of origin ** regulatory & rules of origin

UK Free Port policy post-Brexit: assumed tariff and non-tariff barriers (from 2021)

	TB & NTB (vs national policy)	Trade share
EU imports	0.0%* (-7.0%)	50%
US & CA imports	5.0%* (-7.0%)	10%
Other imports	5.0%** (-10.5%)	40%
Blended imports	2.5% (-8.5%)	100%

TB: Zero, NTB: *no rules of origin required **regulatory requirements remain

- A long run price elasticity of demand of unity (-1.0) for all goods trade i.e. exports plus imports. Estimates do vary considerably, including for exports versus imports: for example, a 2000 study by Princeton University found a long run price elasticity of UK imports of -0.6 and a long run price elasticity of UK exports of -1.6^{xxx}.
 - Cheaper goods induce agglomeration effects within the Free Port zones. Grafting Enterprise Zones onto the Free Ports, to create Supercharged Free Ports, induces further agglomeration effects. The modelling assumes half the agglomeration effect comes from Free Port status and half from being Enterprise Zones.
 - Pessimistic scenario: a 1% decrease in the price of imports and exports (including TB and NTB) leads to a 1% increase in the quantity of imports after 10 years, with induced agglomeration effects boosting the trade impact by +50%
 - A central scenario: as above but with induced agglomeration effect boosting the trade impact by +100%
 - Optimistic scenario: as above but with induced agglomeration effects boosting the trade impact by +150%
 - The agglomeration effects continue beyond the initial 10-year period, but the price effect is fully captured within ten years – the price effect acting as a catalyst
6. Trade impact on economic output (GVA)
- A 1% increase/decrease in trade delivers a 0.50% to 0.75% increase/decrease in GVA per head, using the estimates cited in the HM Treasury study of the economic impacts of leaving the EU.

Boost to annual growth of 'Free Port trade' versus baseline growth of 5% p.a. nominal

	Pessimistic	Central	Optimistic
Price effect (1st 10 years only)	0.85ppt	0.85ppt	0.85ppt
Agglomeration effect of Free Port	+0.21 ppt	+0.42 ppt	+0.63 ppt
Agglomeration of Supercharging Free Port with an EZ	+0.21 ppt	+0.42 ppt	+0.63 ppt
Total effect	+1.27 ppt	+1.70 ppt	+2.13 ppt

Modelling results

Value of goods trade (exports plus imports), Northern ports

	2021	2041	Nominal growth	Increased vs baseline
National trade policy baseline (100% goods)	£170bn	£451bn	+165%	0
National trade policy (90% goods)	£153bn	£405bn	+165%	0
SC Free Port trade (10% goods), pessimistic	+£17bn	+£53bn	+215%	+£8.2bn
SC Free Port trade (10% goods), central		+£58bn	+240%	+£12.9bn
SC Free Port trade (10% goods), optimistic		+£63bn	+270%	+£17.9bn
Total trade with SC Free Ports, pessimistic	£170bn	£459bn	+170%	+£8.2bn
Total trade with SC Free Ports, central		£464bn	+173%	+£12.9bn
Total trade with SC Free Ports, optimistic		£469bn	+176%	+£17.9bn

Impacts on Northern GVA, nominal

7 Free Ports (10% goods), optimistic		Trade	GVA lower	GVA upper
Total trade with 7 SC Free Ports, pessimistic	£170bn	+£8.2bn	+£4.1bn	+£6.15bn
Total trade with 7 SC Free Ports, central		+£12.9bn	+£6.45bn	+£9.68bn
Total trade with 7 SC Free Ports, optimistic		+£17.9bn	+£8.95bn	+£13.4bn

Impacts on Northern GVA, real (2016 money)

7 Free Ports (10% goods), optimistic		Trade	GVA lower	GVA upper
Total trade with 7 SC Free Ports, pessimistic	£170bn	+£5.5bn	+£2.75bn	+£4.13bn
Total trade with 7 SC Free Ports, central		+£8.6bn	+£4.3bn	+£6.45bn
Total trade with 7 SC Free Ports, optimistic		+£12.0bn	+£6.0bn	+£9.0bn

Results vs historical US experience of Foreign Trade Zones (FTZs)

- US Foreign Trade Zone 'FTZ' trade outpaced 'ALL' US trade growth during 1996-2006
- We have downwards-adjusted the US FTZ series to account for the growth in FTZ ports during this time, to get a 'growth per port series'
- The UK baseline projection, of 5% p.a. nominal growth in trade value from 2021–2041, based on the historical 10– and 30–year trend, is close to the US All trade series (for 1996–2016) But the 'UK Free Port central projection' has the 'UK Free Port central projection' has the closest finishing point to the US FTZ series

Modelled economic impact of Free and Supercharged Free Ports, by 2041, GVA £ million (real)

	Free Port status only*	Supercharged Free Port status
Grimsby & Immingham	+2,255	+3,842
Hull	+434	+739
Liverpool	+1,330	+2,265
Manchester airport	+212	+361
Rivers Hull & Humber	+117	+199
Tees & Hartlepool	+619	+1,055
Tyne	+302	+515
Total	+5,269	+8,975

*assumes half the 'agglomeration effect' (indirect price effect) attributable to FP and half to EZ.

*direct 'price effect' ascribed entirely to FP.

CREDITS

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Designed and produced by Mace's in-house graphic design team.

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