INDUSTRY INSIGHTS in Manufacturing

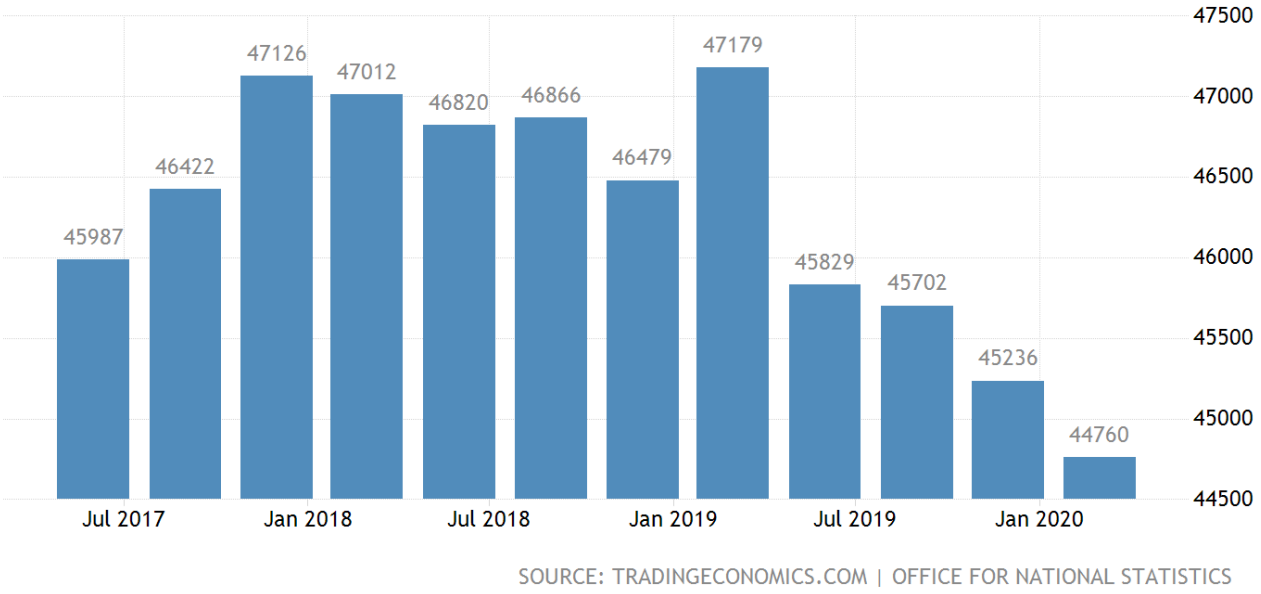
INDUSTRY INSIGHTS in MANUFACTURING

1 MARKET DEFINITION

1.1 Market Overview

In the 1970s, manufacturing accounted for 25% of the economy.

At present, the UK is the ninth largest manufacturing nation in the world. In the fourth quarter of 2019, the value added by the manufacturing sector as a percentage of GDP was 45202 GBP million. However, during the first quarter of 2020, this figure decreased to 44438 GBP million.



Source: Trading Economics (2020). "United Kingdom GDP From Manufacturing-Summary Section". Retrieved from: https://tradingeconomics.com/united-kingdom/gdp-from-manufacturing

Although the contribution of manufacturing to GDP has declined on paper, many of the services provided to manufacturers which would have once been considered part of manufacturing, such as catering, cleaning, building services, and logistics, have been allocated to other areas of the economy.

Nevertheless, those contributions are directly reliant on manufacturing for continued business and could be considered as a part of manufacturing's GDP input. As such, many are calling for the true value of manufacturing to be recognised. This move would see the widely cited figure of 10% of GVA more than doubling to 23%.

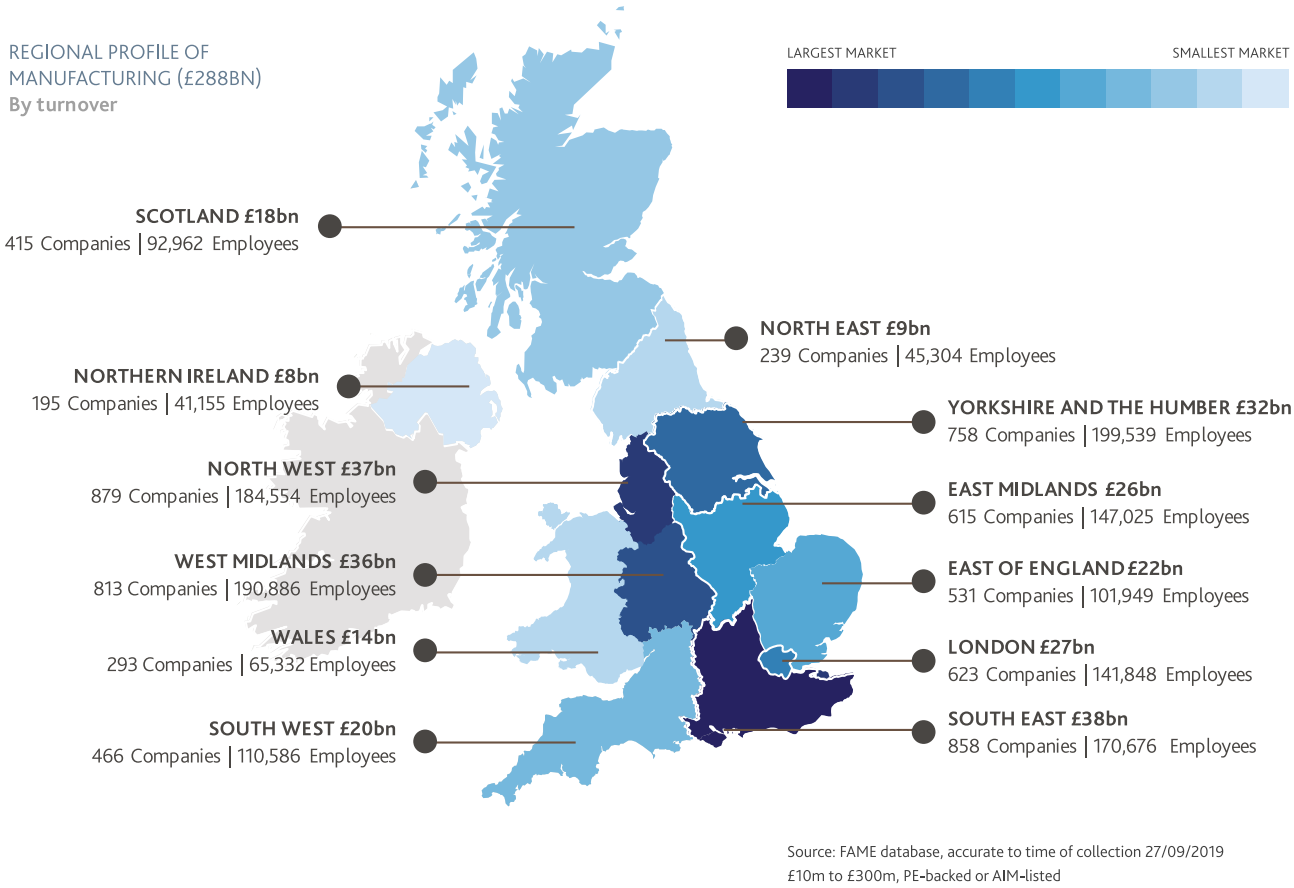
According to Make UK (formerly EEF), UK manufacturing currently:

- Employs 2.7 million people (earning an average of £32,500)
- Accounts for 45% of total exports (£275bn in total)
- Represents 69% of business research and development (R&D)
- Provides 13% of business investment

On top of that, the UK's manufacturing industry remains in the top ten of world rankings:

- Annual output worth £192 billion to the economy overall
- Exports to the EU are more than double the value of those to the US
- Manufacturing is still in the driving seat when it comes to exports and R&D
- World's 10th largest exporter and 7th largest for trade
- Average pay in manufacturing remains significantly higher than other services and economy sectors overall

Source: MAKE UK (2019/20). "UK Manufacturing: The Facts 2019/20".
Retrieved from: https://www.makeuk.org/insights/publications/uk-manufacturing-the-facts-2019-20



Source: FAME database, accurate to time of collection 27/09/2019
£10m to £300m, PE-backed or AIM-listed

Source: BDO UK Report (Dec 2019). "UK regional sector maps analysis of the population of economic engine businesses across the UK". Part 3: Manufacturing.
Retrieved from: https://www.bdo.co.uk/BDO_UK/media/bdo/Microsites/Business%20in%20the%20UK/Regional-sector-map-Dec-2019.pdf

		NUMBER OF COMPANIES	TURNOVER (000S)	NUMBER OF EMPLOYEES	RANKING BY NUMBER OF EMPLOYEES
	North West (England)	879	£36,618,139	184,554	3
	South East (England)	858	£38,115,474	170,676	4
	West Midlands (England)	813	£35,666,329	190,886	2
	Yorkshire and The Humber	758	£32,383,399	199,539	1
	London	623	£27,334,592	141,848	6
	East Midlands (England)	615	£25,722,533	147,025	5
	East of England	531	£22,269,869	101,949	8
	South West (England)	466	£20,317,414	110,586	7
	Scotland	415	£17,555,281	92,962	9
	Wales	293	£14,042,616	65,332	10
	North East (England)	239	£9,476,481	45,304	11
	Northern Ireland	195	£8,161,075	41,155	12
	GRAND TOTAL	**6,685**	**£287,663,202**	**1,491,816**	

Source: BDO UK Report (Dec 2019). "UK regional sector maps analysis of the population of economic engine businesses across the UK". Part 06 Source Data: Manufacturing.
Retrieved from: https://www.bdo.co.uk/BDO_UK/media/bdo/Microsites/Business%20in%20the%20UK/Regional-sector-map-Dec-2019.pdf

2 MARKET INSIGHTS

2.1 Current Market Scenario

The total production output in the UK decreased by 9.5% in April 2020, led by manufacturing output, which fell by 10.5%. The three-monthly fall in manufacturing is because of widespread weakness, with 12 of the 13 subsectors providing downward contributions. Manufacturing production in the United Kingdom plunged by a record of 28.5% in April of 2020, following a 9.7% drop in March. The coronavirus lockdown imposed from the 23rd of March had a significant impact on overall economic activity as many businesses and factories had to close. Every month, factory activity sank to 24.3%, a record drop led again by transport equipment, which fell by 50.2%, with motor vehicles, trailers, and semi-trailers falling by 90.3%.

Source: Trading Economics (2020). "United Kingdom Manufacturing Production-Summary Section". Retrieved from: https://tradingeconomics.com/united-kingdom/manufacturing-production

Manufacturing is the most important sector in the UK, accounting for 70% of total production. The biggest segments within manufacturing are:

- Food, drink, and tobacco: 11% of total production
- Transport equipment: 9% of total production
- Basic metals: 8% of total production
- Other manufacturing and repair: 6% of total production
- Pharmaceutical products and preparations: 6% of total production
- Rubber and plastic products and non-metallic mineral products: 6% of total production

Statistics by sector:

Food & Drink
The food and drink industry employs over 430,000 people across the UK. It has a turnover of more than £105 billion, accounting for almost 20% of total UK manufacturing. Manufactured food and drinks contribute more than £28 billion to the economy, 2.3% more than 2017.

Plastic Packing Goods
Market size: £4bn
Number of businesses: 597
Industry Employment: 22,614
Average industry growth 2015–2020: -0.7%

Pharmaceutical Product Preparations
Market size: £18bn
Number of businesses: 494
Industry employment: 48,811
Average industry growth 2015–2020: 6.6%

Metal Structure
Market size: £8bn
Number of businesses: 3,246
Industry employment: 60,391
Average industry growth 2015–2020: 0.6%

Plastics
Market size: £5bn
Number of businesses: 419
Industry employment: 10,786
Average industry growth 2015–2020: 3.3%

Clothing
Market size: £3bn
Number of businesses: 4,085
Industry employment: 25,569
Average industry growth 2015–2020: -2.1%

2.2 Technological Innovations

Here are three technology trends that are likely to have the biggest impact on the way the manufacturing industry operates in 2020 and beyond.

Industry 4.0

Although Industry 4.0 or smart manufacturing sounds like manufacturing jargon, it is important to understand that transitioning manufacturing and technology organisations to this level will be no mean feat. Why? Industry 4.0, often called the 4th industrial revolution, relies on manufacturing organisations to embrace rapid technological change. The goal? To drive business growth.

However, ensuring that manufacturing companies stay ahead of the competition requires implementing both existing and emerging manufacturing technologies and processes that can move organisations forward. Utilising the right software will help to track internal processes and improve overall efficiencies.

The area of skilled workers remains a challenge. In the UK manufacturing sector, for example, it is estimated that 186,000 new engineers and manufacturers will be needed every year up until 2024. At present, there is a deficit of around 20,000 new graduates per year.

Quantum Computers

In 2019 major players like Intel announced what are believed to be significant breakthroughs in the production of control chips used to streamline the systems used to control quantum bits. Also known as qubits, these will be essential for the ability of manufacturers to scale systems to hundreds

of thousands or millions of qubits. Essentially, this makes it possible for these chips to function at extreme temperatures previously believed as impossible.

This brings the next level of supercomputing, quantum computing, where atoms, ions, photons, or electrons and their respective control devices work together to act as both a computer's memory and processor. Hot on the heels of Intel's scalable control system are tech giants IBM, Microsoft, and Google, who are all keen to showcase quantum computing's edge over conventional supercomputers.

AI

AI is generally recognised as the technology behind things like facial recognition. In the manufacturing sector, however, AI has the potential to revolutionise how manufacturing tasks like visual inspection, predictive maintenance, and even assembly are performed. For example, AI can be embedded within existing products or services to make them more effective, reliable, and safer while enhancing their longevity.

This technology can also be used as part of supply chain management to help reduce overall costs by reducing transportation expenses, warehouse management, and ensuring efficient supply chain administration. It offers incredible benefits and is likely to become more prominent in 2020. Although it's unlikely that this technology will replace the human element of manufacturing anytime soon, it is worth understanding how AI can be used effectively within an organisation, especially when it comes to improving manufacturing efficiencies, product quality, and the safety of employees.

Technology is evolving at a rapid pace, particularly in the manufacturing industry. Forward-thinking manufacturers need to keep updated if they want to stay current, as tech is on the agenda for 2020 and beyond. AI technology can help to monitor site maintenance more efficiently.

2.3 Government Regulations and Initiatives

Post-Brexit Regulations

The UK has left the EU and is now in a transition period. There will be new rules in many areas from the 1st of January 2021 that might affect you if you are a business owner.

EORI number

Business owners need an EORI number to move goods between the UK and non-EU countries. If they do not have one, they may face increased costs and delays. For example, if HM Revenue and Customs (HMRC) cannot clear their goods, they may have to pay storage fees.

Businesses that move goods to or from the EU

After the 31st of December 2020, business owners will need an EORI number to move goods between the UK and the EU.

They should apply for their EORI number in advance. It can take up to a week to get one. Business owners will not usually need an EORI number if they only:

- Provide services
- Move goods between Northern Ireland and Ireland

If they use a post or parcel company, the government will inform them if they need an EORI number.

Business owners will need an EU EORI number if their business will be making customs declarations or receiving a customs decision in the EU. They should get this from the customs authority in the EU country where they submitted their first declaration or request.

Businesses that already have an EORI

Business owners should check their EORI number. They should apply for a new one if their current one does not start with GB.

Before they apply

To apply, business owners may need their:

- VAT number and the effective date of registration (these are on their VAT registration certificate)
- National Insurance number (if they're an individual or a sole trader)
- Unique Taxpayer Reference (UTR)
- Business start date and Standard Industrial Classification (SIC) code (these are in the Companies House register)
- Government Gateway user ID and password

If business owners do not already have a user ID, they'll be able to create one when they apply.

Apply for an EORI number

It takes 5 to 10 minutes to apply for an EORI number. Business owners will get it straight away or within five working days (if HMRC needs to make more checks).

UK Business Support Mechanisms

The UK government and devolved administrations have announced a range of measures aimed at supporting the economy, businesses, and workers through the COVID-19 crisis:

- COVID-19 Corporate Financing Facility (CCFF)
- Coronavirus Business Interruption Loan Scheme (CBILS)
- Coronavirus Large Business Interruption Loan Scheme (CLBILS)
- Coronavirus job retention scheme
- Term Funding Scheme with additional incentives for SMEs (TFSME)
- Small Business Grant Fund (SBGF)
- Coronavirus Business Support Grants (Scottish Scheme)
- Future Fund
- ESFA post-16 provider relief scheme
- Bounce Back Loans scheme
- Trade Credit Insurance
- Statutory Sick Pay
- General Taxation - Time to Pay
- Insurance
- Companies House
- Mortgage Holidays
- Deferred VAT payments
- Self Employed Income Support Scheme
- Reform of Insolvency law

3 MARKET DYNAMICS

3.1 Drivers

Manufacturers:

> **89% believe smart factory technologies will improve their supply chain relationships**

> **81% said digital technologies would enable them to open up new markets and find new customers**

> **84% view the drive for a carbon-neutral future as an opportunity to transform their business**

> **94% are open to adapting their business to achieve growth**

UK businesses are responding to global economic growth uncertainty by focusing on practical measures to improve efficiencies while targeting new products, services, and markets. Manufacturers are going beyond the promotion of new technology and embracing the entire journey of business transformation. They are learning new habits, acquiring the right talent, and implementing organisational changes.

Furthermore, climate change and the drive for carbon neutrality is seen as a driver of growth. Manufacturers appreciate the opportunities presented by the need to develop more sustainable manufacturing processes.

3.2 Opportunities and Investments

Empowering British Manufacturing through Investments

With banks considered to be less than reliable finance partners, and with insufficient support coming through from the alternative finance sector, it's logical that for manufacturers to be able to invest with confidence, they have to store cash on their balance sheets. They have to prove that they are ready to invest, even though, across the board, business investment is down.

> **73% find it quite simple to raise money through the major high street UK banks**

> **75% have strong reserves on their balance sheet and can finance investment themselves**

> **86% say they are ready to invest in new digital technologies to boost their competitive position**

Overseas Exports

The growth that counts comes from exports. The UK government aims to counter the loss of access to the EU single market with a campaign to encourage more manufacturers to export across the globe. Are manufacturers ready to rise to the challenge?

According to the PWC (2020) Annual Manufacturing Report, 68% of manufacturers say they are confident in overseas trade and that the conditions are suitable for growth into new markets.

3.3 Industry Challenges

Global Economic Growth Decline

In 2018, the PwC's 23rd Annual Global CEO Survey revealed a record level of optimism regarding worldwide economic growth. However, the top concern for UK CEOs currently is economic growth, with more than half expecting global GDP to decline.

Brexit

The Brexit process was particularly tough on British manufacturing, an industry also trying to get to grips with globalisation and deal with an increasingly volatile supply chain. Not all manufacturers survived this period, even if they believed they were in a secure position.

According to 'UK Manufacturing: 2019/20 The Facts', while the United States is the single biggest export market for UK manufactured goods and services (worth £118.2bn) exports to the top seven EU markets alone amounted to £236.5bn in the same period (£256.1bn including Switzerland).

Where UK Exports Go

UK's top 10 export and import destinations for manufactured goods (including food & beverage) (£bn)

Source: MAKE UK (2019/20). "UK Manufacturing: The Facts 2019/20". Retrieved from: https://www.makeuk.org/insights/publications/uk-manufacturing-the-facts-2019-20

Cybersecurity

The threat of an IT systems attack in the manufacturing industry has grown exponentially in recent years thanks to the greater level of connectedness between companies and the outside world, including the growing use of sensors and other devices connected via the Industrial Internet of Things (IIoT). Inevitably, this is a consequence of Industry 4.0, in which fundamental features include the gathering of data from industrial processes and their transmission via IP (Internet Protocol). Data can be transmitted within a factory, to partners via the supply chain, or third party data processors and analysts in the cloud.

84%
of manufacturers said
cybersecurity
is an industry-wide responsibility

COVID-19

The new trading environment created by COVID-19 has left many manufacturers with altered production levels. Disruption has significantly affected manufacturing supply chains, many of which rely on parts originating from China.

For some organisations, however, the crisis has prompted calls for critical supplies, as health services are overwhelmed and short of mechanical ventilators and other preventative and medical care equipment required to fight the pandemic. The response from the manufacturing community has been incredible, with some producing ventilators, or other items such as hand sanitisers, COVID-19 testing kits, and transparent face shields.

4 COMPETITIVE LANDSCAPE

4.1. Mergers & Acquisitions, Joint Ventures, Collaborations, and Agreements

As previously mentioned, around 7/10 manufacturers (68%) express confidence in overseas exports. Though this is positive, are manufacturers equally optimistic about the support on offer from the government that could influence the post-Brexit trading policy? The answer is a resounding no. Manufacturers are very unhappy with the level of government support.

65%

of UK manufacturers say that the government should do more to support the sector in

overseas markets

5 RECRUITMENT CHALLENGES

Skills Shortages

Britain's manufacturers are facing the largest shortage of skilled workers since 1989, with many citing this shortfall as their biggest challenge. Despite post-Brexit immigration rules being unclear, companies still need to be able to access skills at all levels without high costs or bureaucracy.

If we are to see the sector continue to thrive in the post-Brexit era, the UK-wide perception of the industry must be addressed. We are faced with a myriad of negative influences that place manufacturing low on the list of career options that the youth of today want to pursue.

Stereotyping

The UK is seen as a post-industrial nation that doesn't make things anymore. Manufacturing jobs are viewed as male-dominated, dirty, low-paid, and monotonous. This is perpetuated by a decreasing number of family members who have had jobs in manufacturing and a lack of teachers who truly understand the career opportunities available in the sector.

Apprentice Levy Problem

Government policies such as the Apprenticeship Levy have managed to send recruitment into reverse. There is an inevitable drive to send children to university, even if a vocational career would be more suitable, as education budgets are geared towards incentivising schools to cram as many children as possible into the 6th form. Also, if children do decide to apply for an apprenticeship, the quality of training on offer in some FE colleges is dismal due to years of budget cuts.

57%

of manufacturers said the

Apprenticeship Levy

is simply a tax on employment

The National Education System as an Obstacle

The system is still driven by the class-driven mantra that 50% of young people must go to university, whether it is the right thing for them to do or not. With the inevitable decline in the status and funding of FE (Further Education) colleges, it is little wonder that the vocational route to a career is stunted. It should come as no surprise that the entire education system, from early years to graduation, is not working for the manufacturing sector. However, the education system may not be entirely monolithic, given the emergence of new types of schools and training courses, but it certainly feels that way.

59% of manufacturers said the

education system is failing

Automation, Upskilling and New Recruits

Given the lack of management training in many areas of the economy, this is a heartening response. Today's young manufacturers will produce the leaders of tomorrow. How they respond to the critical challenges of the Industry 4.0 era, which are balancing the demand for productivity with providing a skilled workforce capable of delivering it, will be crucial to the future.

Businesses overwhelmingly understand that using automation to save money by shedding staff is unwise. A manufacturer with a vision of the future will need to be constantly upskilling and reskilling its workforce.

Manufacturers need to take immediate action to boost their skills budgets and develop quality training programmes. If that is beyond them, they should reach out to similarly placed companies and develop a collaborative solution.

86% of manufacturers have a policy in place for upskilling and retraining their workforce, and believe in

life-long learning

6 KEY FINDINGS SUMMARY

Industry Pains

- Skill gaps and shortages
- Brexit Deals relating to exports
- Disruption in the supply chain due to COVID-19
- Global economic growth decline
- Cybersecurity issues

Industry Drivers

- Full circle business transformation
- Smart factory technologies
- Climate change

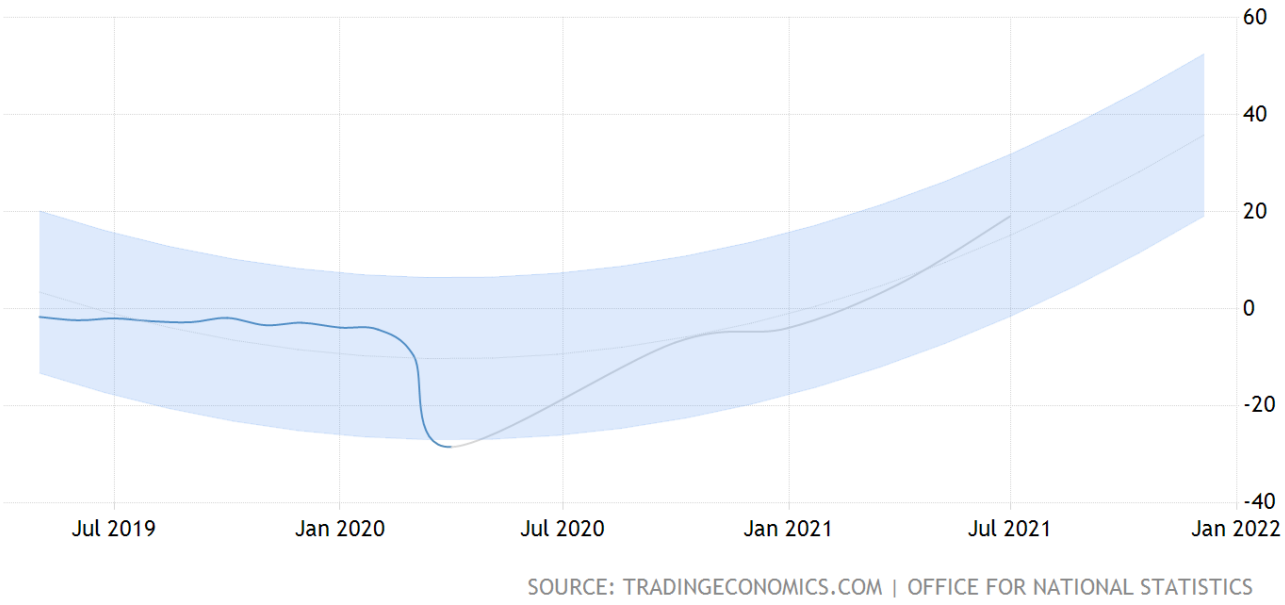
Industry Opportunities

- Empowering manufacturing through investments
- Overseas exports

7 FORECASTS 2020-2022

Industry Growth Data

Manufacturing production in the United Kingdom is expected to be -20.00% by the end of this quarter, according to the Trading Economics global macro models and analysts' projections. Looking forward, we estimate manufacturing production in the United Kingdom to stand at 5.00% within the next 12 months. According to our econometric models, manufacturing production in the UK is projected to trend at 6.00% in 2021 and 2.00% in 2022.



Source: Trading Economics (2020). "UK Manufacturing Production-Forecast Section".
Retrieved from: https://tradingeconomics.com/united-kingdom/manufacturing-production

Emerging Trends

Digital Transformation

According to the PwC (2020), "Business transformation is a major shift in an organisation's capabilities and identity so that it can deliver valuable results, relevant to its purpose, that it couldn't master before." Inevitably it involves change at every business level, from organisational culture and technology to product range and delivery.

Servitisation Model

Overall, most manufacturing over the decades has been 'fire and forget', with little visibility of where products end up once they've left the factory. The advent of digital technologies that enhance customer experience makes the servitisation model accessible to more companies. The model can bring significant benefits to manufacturers who might be struggling with other countries to compete on pricing. Servitisation is growing among UK manufacturers, with 78% saying they are developing business models that add value to customer relationships, which in turn improves customer retention.

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