



Fraser of Allander Institute
The Evolution of Manufacturing in
Scotland and the UK
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Executive Summary

Short-term analysis 2024-2025

- Scotland's manufacturing outperformed the UK in 2024, driven by chemicals and pharmaceuticals.
- Growth in Scottish manufacturing was narrow and short-lived; momentum reversed in early 2025 due to the Grangemouth closure and broader sectoral weakness.
- UK manufacturing faced broad decline in 2024, especially in steel and transport, but saw a modest recovery in early 2025.

Long-term analysis 1971-2023

- Manufacturing makes up a larger share of Scotland's economy relative to the UK, having diversified less aggressively into services, despite enduring similar long-term pressures.
- Manufacturing has become narrower and more export orientated, increasing vulnerability to sector-specific shocks.
- Across the UK, manufacturing employment has halved since 1996, with similar proportional decline in Scotland.

Sub-sectoral analysis

- Scotland's exports are highly concentrated in food and drink, but is heavily reliant on whisky.
- The UK's exports rely on high-tech and capital-intensive sectors like vehicles, metals, and electronics but with high import dependency.
- Electronics has seen a severe long-term decline, losing nearly half its GVA share since 2003 whereas pharmaceuticals has more than doubled its share of GVA since 2020.

Introduction

In the most recent five quarters, Scottish manufacturing and UK manufacturing have diverged substantially, marking a period of structural re-composition both in terms of manufacturing's broad role in the respective economies, and within manufacturing sectors. This has prompted questions about the nature and prospects of Scotland's manufacturing sector and how its role within the economy has evolved. This report highlights the historic transition of Scottish manufacturing toward concentrated, capital-intensive sectors. Though this continues to support Scotland's economy, it exposes it to longer-term vulnerabilities around resilience, job density, and sector-specific shocks.

The manufacturing industry was once the most significant component of the UK economy. The industry saw continuous growth and then boomed during the Industrial Revolution, and it became the biggest employing industry in the UK. Notably, the United Kingdom was the leading manufacturer in the world during the 18th century and for a long period after, constituting a formative part of its economy and historical identity.

Manufacturing industries in Scotland and the UK have experienced substantial declines in share of GDP and GVA, which is mirrored by output and employment trends. Despite headline figures, the nature and the pace of that decline differs. Both Scotland and the UK maintain a focus on traditional, labour-intensive manufacturing. However, Scotland's manufacturing sector is increasingly defined by a narrow set of high-value, export-oriented industries.

Table 1: Standard Industrial Classification 2007 codes for Manufacturing

SIC 2007	Sector
C (10-33)	Manufacturing
CA (10-12)	Manufacture of food, beverages and tobacco
CB (13-15)	Manufacture of textiles, wearing apparel and leather
CC (16-18)	Manufacture of wood and paper products and printing
CD-CE (19-20)	Manufacture of coke, refined petroleum and chemicals
CF (21)	Manufacture of pharmaceutical products
CG (22-23)	Manufacture of rubber, plastic and non-metallic minerals
CH (24-25)	Manufacture of basic and fabricated metal products
CI (26)	Manufacture of computer, electronic and optical products
CJ (27)	Manufacture of electrical equipment
CK (28)	Manufacture of machinery and equipment
CL (29-30)	Manufacture of transport equipment
CM (31-33)	Other manufacturing, repair and installation

Source: ONS

The Standard Industrial Classification (SIC) is a framework used for the collection and analysis of industrial data in the UK. We use this framework to provide a general examination of the makeup of the manufacturing industry and how it has evolved over time using GVA and employment measures. Then further analysis using SIC 4- and 5-digit codes that further disaggregate the sectors and reveals more accurate trends in manufacturing in the UK and Scottish economies.

This report is structured as follows:

- Section 1: This section considers short-term quarterly GDP and output trends to assess how Scotland's and the UK's manufacturing sectors performed in 2024-2025, revealing divergent sectoral momentum, limits to Scotland's resilience, and the continuing structural pressures affecting manufacturing.
- Section 2: This section traces the long-term decline of manufacturing as a share of GDP and GVA in Scotland and the UK, showing how Scotland has maintained a relatively stronger structural reliance on manufacturing despite broader deindustrialisation.
- Section 3: This section analyses the sectoral makeup of manufacturing GVA over time, highlighting Scotland's increasing concentration in high-value subsectors like food and beverages, pharmaceuticals, and chemicals, alongside the decline of traditional industries.
- Section 4: This section explores Scotland and the UK's evolving trade patterns, showing how export orientation has grown while import dependency and post-Brexit trade realignment introduce new structural risks.
- Section 5: This section examines changes in manufacturing employment across sectors and regions, revealing a shift towards fewer higher-value, and more capital-intensive jobs, with implications for labour market resilience and regional equity.

1. Recent developments in manufacturing (2024-2025)

While the long-term data shows manufacturing in Scotland maintaining a greater structural role than in the UK overall, recent quarterly GDP estimates suggest a more nuanced picture emerging through 2024 and early 2025. A comparison of the most recent five quarters (2024 Q1 – 2025 Q1) highlights short-term divergence in both the momentum and composition of manufacturing output between Scotland and the UK.

This section draws on quarterly GDP releases from the Scottish Government and the ONS to assess how manufacturing is currently performing and how these patterns may reflect deeper sectoral pressures or transitional shifts. Scotland's manufacturing sector recorded growth throughout 2024, while UK manufacturing entered a period of broad-based decline. However, Scotland's gains were narrowly concentrated, and signs of structural weakness emerged by early 2025. Meanwhile, the UK experienced more widespread manufacturing contraction, with only a modest recovery by 2025 Q1.

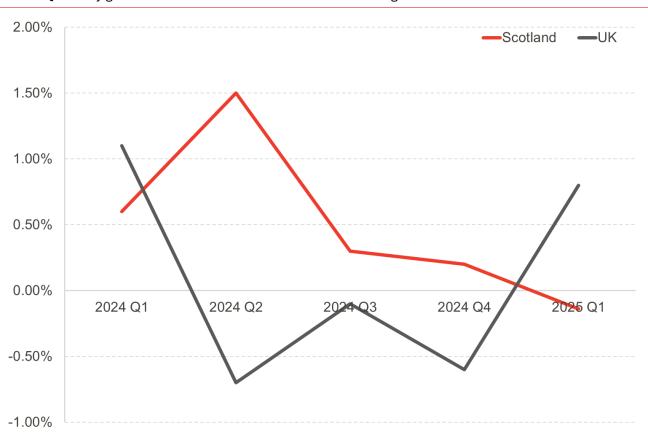


Chart 1: Quarterly growth rates in Scottish and UK manufacturing

In the first quarter of 2024, Scotland's GDP grew by 0.5%, supported by a 0.6% rise in manufacturing and strong output across the production sector. At the UK level, GDP grew by 0.7%, with manufacturing playing a key role. Seven of thirteen manufacturing subsectors expanded, led by a 4.6% increase in transport equipment, continuing six consecutive quarters of growth. Basic metals and food manufacturing also performed well. At this point, manufacturing in both Scotland and the UK was contributing positively, albeit with different sectoral drivers.

By the second quarter, trends began to diverge. Scotland's manufacturing output rose by 1.5%, the fastest quarterly growth of the year, helping to lift production by 1.1%. UK manufacturing, by contrast, fell by 0.7%,

dragging down overall production despite modest GDP growth of 0.5%. The decline was broad-based, with seven manufacturing subsectors contracting. Notably, transport equipment, which had underpinned growth in Q1, had turned negative. The UK's manufacturing slowdown in transport was echoed in external industry data. The Society of Motor Manufacturers and Traders reported a dip in vehicle production across the UK in 2024, attributing it to the pressures of electric vehicle transition, weakening global demand, and supply chain constraints. Scotland, less reliant on transport equipment, was not exposed to this specific downturn and so maintained more stable growth.

In the third quarter, Scotland again recorded GDP growth of 0.4%. Manufacturing output grew by 0.3%, but the overall production sector was flat, largely due to continued declines in mining and quarrying as part of a broad, steady decline in extractive industries throughout 2024. The UK economy stalled in Q3, with GDP unchanged. Manufacturing output fell slightly (-0.1%), weighed down by contractions in machinery and transport. This marked the third consecutive quarter of weakening UK industrial performance.

In the final quarter of 2024, Scotland's headline manufacturing figure remained positive (0.2%), but was heavily skewed by exceptional growth in a few sectors. Chemicals, pharmaceuticals, and refined petroleum products rose by 6.5%, likely driven largely by pharmaceuticals as in September, Grangemouth, Scotland's last refinery closed. Meanwhile, food and drink (-2.1%) and metals and machinery (-2.9%) both contracted, pointing to broader fragility. In contrast, UK manufacturing fell again, this time by 0.6%, contributing to a year of flat output overall. The steepest declines were in metals, particularly basic iron and steel which dropped by 26.4%, and transport equipment, both of which had been weakening throughout the year. This decline, confirmed by the International Steel Statistics Bureau, was part of a broader collapse in UK steel production during 2024. While Scotland's limited automotive and transport industry has meant missing out on growth, it has also left Scotland less exposed to recent turbulence in UK vehicle manufacturing, including supply chain pressures and the uncertain transition to electric vehicles.

The first quarter of 2025 saw a reversal of the patterns of the previous year, though Scotland's GDP recovered to 0.4%, but the momentum in manufacturing had clearly shifted. The sectors that had driven growth at the end of 2024 now contributed to decline. The sharp decline in chemicals and petroleum underscores the structural significance of the Grangemouth refinery closure and its impact on future output. Continued declines were also recorded in textiles and metals, both of which had been contracting across multiple quarters. In contrast, UK manufacturing returned to growth, expanding by 0.8%. Ten out of thirteen subsectors grew, led by transport equipment (+2.7%) and machinery (+3.8%), though automotive output remained 5.5% below levels a year earlier. The rebound, while broad-based, appears more cyclical than structural.

Recent quarterly data reveal limits to Scotland's resilience and exposes the compositional weaknesses of manufacturing in the UK. Scottish manufacturing growth in 2024 was driven by short-lived surges in energyintensive sectors, particularly chemicals and petroleum, which quickly reversed by early 2025 following the closure of Grangemouth. Meanwhile, the UK faced broader and deeper industrial decline, with major contractions in steel and automotive production, only partially recovering in early 2025. The turbulence in Scottish and UK manufacturing across these five quarters highlights the limitations of manufacturing profiles with little diversity and dependency on just a few sectors.

2. The relative importance of manufacturing

GDP and GVA trends

Manufacturing's role in the economy has contracted sharply. An analysis of volume measures of manufacturing GDP in Scotland and the UK illustrates this. In 1971, manufacturing accounted for 31.7% of UK GDP and 30.5% of Scottish GDP, highlighting its critical role in both economies. By 1996 this had fallen to just 21.3% in the UK and 22.2% in Scotland.

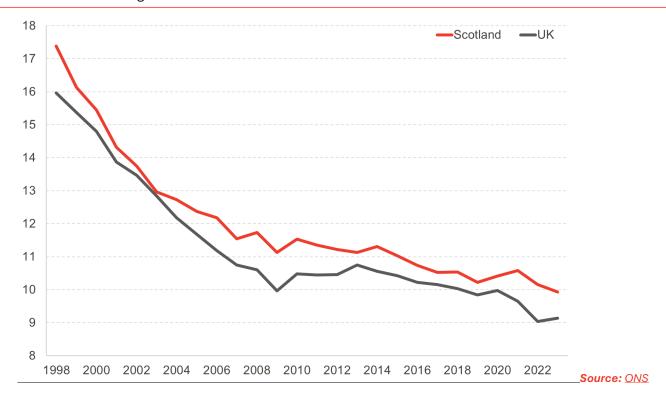
Chart 2: Manufacturing's share of total GDP from 1971 to 1996



Source: ONS

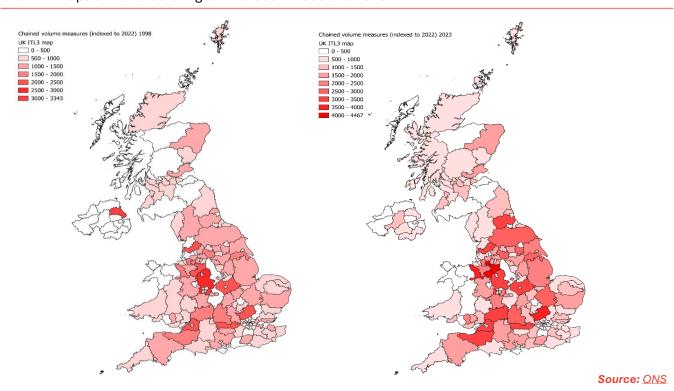
Although manufacturing once held greater structural importance across the UK, by the late 20th century that trend had flipped. Examining weighted gross value added (GVA) - which excludes subsidies and taxes underscores this shift. Chart 3 shows that between 1998 and 2023, manufacturing accounted for a larger share of Scotland's economy than of the UK's, highlighting a lasting structural distinction. The implication is not that Scotland produces more manufacturing output in absolute terms; rather, it indicates that manufacturing remains disproportionately central to its economy. Both Scotland and the broader UK have been exposed to similar macroeconomic and global pressures, yet Scotland has retained a stronger relative reliance on manufacturing, while the UK has become increasingly service-oriented.

Chart 3: Manufacturing's share of total GVA from 1998 to 2022



The paired maps of chained GVA volumes for 1998 and 2023 in **Chart 4** make two things clear. First, every region has seen its absolute manufacturing output climb. Yet despite this across-the-board growth, manufacturing's slice of total economic activity hasn't shifted appreciably. Second, the old industrial centres remain firmly on top: areas that were darkest on the 1998 map still dominate in 2023, while formerly light-shaded zones – especially much of Scotland, the Highlands in particular – show only modest gains. High capital thresholds, entrenched infrastructure in established hubs, and weak incentives for remote investment lock in this geography, offering little incentive to push manufacturing into the peripheral regions.

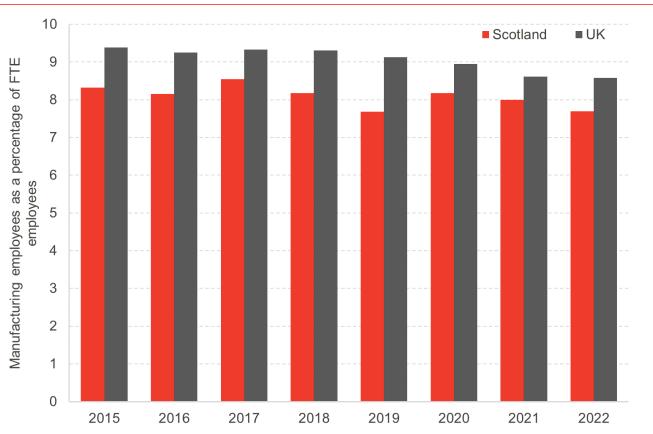
Chart 4: Maps of manufacturing GVA values in 1998 and 2023



Manufacturing's share of the workforce

Although manufacturing has traditionally underpinned employment, its share of full-time equivalent jobs has steadily fallen in both Scotland and the UK since 2015 (Chart 5). Even though manufacturing contributes a larger proportion of GVA in Scotland, it employs a smaller share of Scots than of UK workers – dropping from roughly 8.3% in 2015 to 7.7% in 2022, versus the UK's decline from 9.4% to 8.6%. This signals higher labour productivity in Scotland, potentially driven by greater capital intensity, deeper technological integration, and a more specialised workforce.

Chart 5: Percentage of FTE employees working in manufacturing

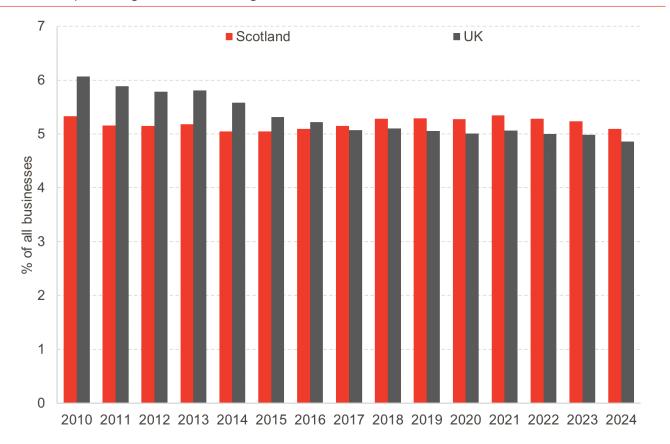


Source: NOMIS

Business Demographics

The proportion of manufacturing businesses in Scotland has remained stable, contrasting with a declining trend in the UK overall. This stability underscores the relative resilience of Scotland's manufacturing sector. Notably, there are no public manufacturing enterprises in Scotland, and public sector manufacturing in the UK has halved since 2010. These trends reinforce the view that manufacturing is becoming less integral to the UK economy, while it retains a structurally important role within Scotland's private sector.

Chart 6: The percentage of manufacturing businesses in the UK and Scotland



Source: <u>NOMIS</u>

3. The composition of manufacturing

The manufacturing landscape has shifted from broad industrial diversity to concentrated specialisms.

Chart 7: Each sectors percentage contribution to total manufacturing GVA overtime in Scotland and the UK

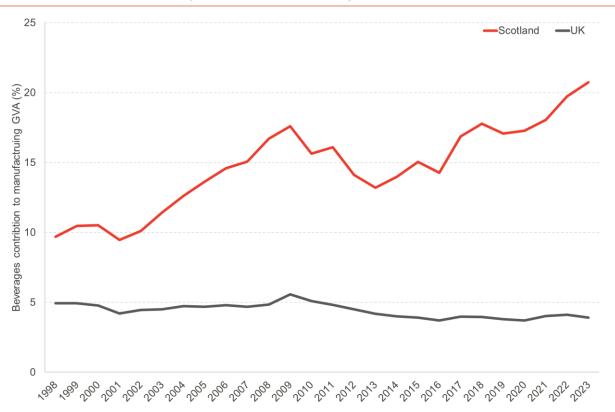
https://public.flourish.studio/visualisation/23746391/

Source: ONS

Food, Beverages, and Tobacco (CA)

The manufacture of food, beverages, and tobacco has been the dominant manufacturing sector in both Scotland and the UK for decades. In Scotland, its importance has increased steadily, rising from 23.0% of total manufacturing GVA in 2003 to 31.5% in 2023. In contrast, the UK share has remained relatively stable over the same period. This growth is driven largely by the production of spirits and wine, which account for a significant portion of the sector's value and volume. Input-output data confirms that these goods dominate final demand and are heavily export-oriented, particularly toward non-UK markets. While this concentrated strength has contributed to the resilience of Scotland's manufacturing sector, the heavy reliance on a single, export-dependent sub-sector introduces vulnerability to external shocks.

Chart 8: The contribution of beverages to total manufacturing GVA



(Tobacco is no longer manufactured in either Scotland or the UK; GVA under this classification is now entirely related to food and beverage production.)

Source: ONS

Coke, Petroleum, and Chemicals (CD-CE)

The manufacture of coke, petroleum products, and chemicals has experienced a steady decline across both GVA and output. In Scotland, the sector's share of manufacturing GVA dropped from 8.0% in 2003 to 5.5% in 2023. Export data reveals a shift from global markets toward the rest of the UK, suggesting reduced international competitiveness. This trend is consistent with broader energy transition dynamics, particularly in refined petroleum products, where Scotland's output has contracted significantly.

14 Scotland -UK Soke, petroleum, and petrochemicals contribution to 12 10 8 GVA (%) 6 4 2 0

Chart 9: The percentage of coke that make up total manufacturing GVA

Source: ONS

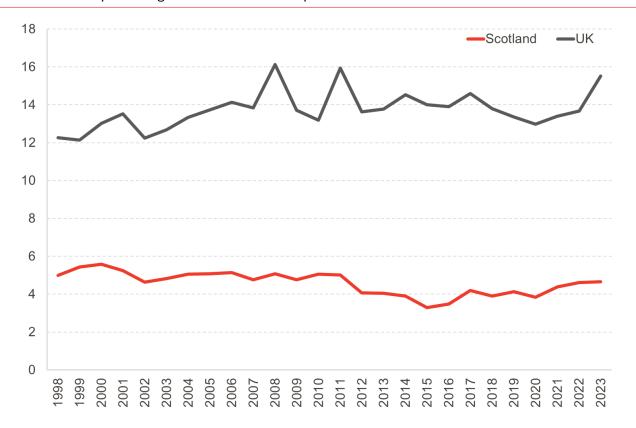
Pharmaceuticals (CF)

Pharmaceutical manufacturing has grown markedly in Scotland since 2020, largely in response to the COVID-19 pandemic. The sector's GVA contribution rose from 4.0% in 2003 to 9.1% in 2023, outpacing UKwide growth. Although the overall volume remains modest, output has increased, and the sector has reoriented toward international export markets. This suggests enhanced global competitiveness and an emerging structural shift within the Scottish manufacturing landscape.

Transport equipment (CL)

Transport equipment manufacturing has been a rare area of GVA growth in the UK, increasing from 11.3% in 2003 to 15.0% in 2023. In contrast, Scotland's share remains low, at 4.4% in 2023. Output data confirms the sector's limited footprint in Scotland, which historically did not develop large-scale automotive or aerospace manufacturing seen in other UK regions. Instead, Scotland's manufacturing base remains focused on process industries, food and drink, and shipbuilding.

Chart 10: The GVA percentage contribution of transport



Source: ONS

Computer, Electronic, and Optical Products (CI)

Scotland has witnessed steep long-term declines in the manufacture of computer, electronic, and optical products. The sector's GVA share fell from 12.0% in 2003 to 7.2% in 2023. Output data emphasises this: the sector lost over 4% of output share between 1998 and 2021 – the largest decline of any manufacturing category. Once central to Scotland's "Silicon Glen," this sector has suffered from global supply chain restructuring, offshoring, and a lack of reinvestment. While the UK as a whole experienced similar trends, the impact has been more severe in Scotland, where the sector is no longer industrially significant.

Other Manufacturing, Repair, and Installation (CM)

Between 2013 and 2023, this category saw an increase in GVA share in Scotland. However, output data shows a declining trend, indicating that growth is not driven by production volume. The repair and maintenance sub-sector, once a larger component, declined in the early 2000s and has not recovered. Growth instead comes from more stable subsectors such as repair and installation and miscellaneous manufacturing. While both Scotland and the UK have seen worsening performance in furniture production, the decline is more prominent in Scotland.

Other manufacturing sectors

Long-term contraction continues in traditional industries such as textiles (CB), wood and paper (CC), and rubber and plastics (CG). These declines have been more pronounced in Scotland, where historical reliance on these sectors has been greater. Capital goods sectors, such as electrical equipment and machinery, have also weakened. By 2023, the manufacture of electrical equipment comprised just 2.2% of Scotland's manufacturing GVA, and machinery and equipment accounted for 7.1%. Output shares have followed similar trajectories. This trend signals declining domestic capability in producing industrial machinery, increasing dependence on imports – a potential risk to industrial resilience and supply chain stability.

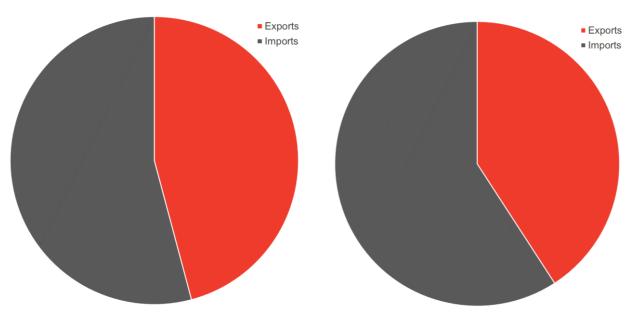
4. Trade flows of manufactured goods

Trade profiles

By 2021, the UK's exports were dominated by high-tech, capital-intensive goods. Computers and electronic products alone boasted an export intensity above 65 percent, while basic metals topped 79% underscoring the UK's strengths in precision engineering and complex assembly. Motor vehicles and aerospace components also featured prominently; However, these gains rely heavily on global imports. In aerospace, for example, more than 70% of components are sourced abroad, signalling that the UK often operates as a global assembler within globally dispersed supply chains rather than a self-contained producer.

In contrast, Scotland's export profile is anchored by the food and beverage sector – whisky. By 2021 the spirits and wines sector accounted for just over 7.5% of Scotland's total exports. Export intensity remains exceptionally high, with more than 75% of output directed to international markets Trade patterns within this category show divergence: while most of Scotland's beer, malt, and spirits are exported globally, soft drinks remain largely confined to the UK market. This highlights the unique strength and global positioning of Scotland's premium agrifood products, especially in branded spirits.

Chart 11: Composition of traded goods in UK manufacturing 1998 (left) and 2021 (right)



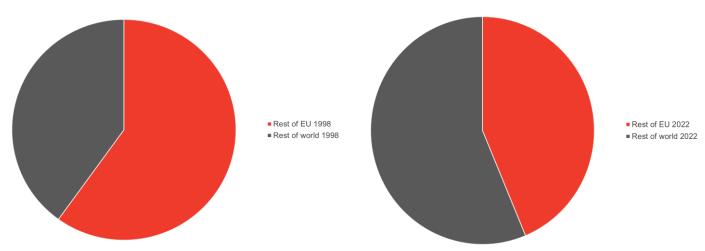
Source: ONS

Both the UK and Scotland have become more export-oriented in key industries, but their exposure to imported inputs diverges. Across the UK's advanced manufacturing - electronics, automotive, and aerospace – import penetration typically exceeds 60 percent. Although there has been a slight reduction in import intensity since 2016, dependency on global supply chains remains entrenched. Scotland, by contrast, enjoys relatively subdued import exposure in its dominant food and drink sectors, sourcing most inputs domestically or within the UK. This contained supply base bolsters resilience in spirits, meat, and fish processing. However, Scotland's pharmaceuticals and electronics industries mirror UK-wide patterns, sharing similar dependence on global supply chains and exposing shared vulnerabilities in high-tech manufacturing.

Trade Realignment

The UK has steadily reoriented its manufacturing exports away from the EU and into global markets: in 2000 more than 70% of vehicle shipments went to EU countries, but by 2021 that share had fallen to just 37.5%. This reflecting a decisive pivot toward non-EU markets. Similar reorientations are evident in numerous other high-value sectors - including basic metals, chemicals, and food products - which have leveraged their already strong global market access.

Chart 12: UK manufacturing exports in 1998 and 2022



Source: ONS

Scotland's exporters have undergone a similar shift: food and beverages have led the charge, with spirits and wines cutting their reliance on the rest of the UK from over 28% of exports in 1998 to 18% by 2021, while overseas sales ballooned, indicating effective diversification. Comparable trends are observable in meat and fish processing, with declining UK shares and modest global gains.

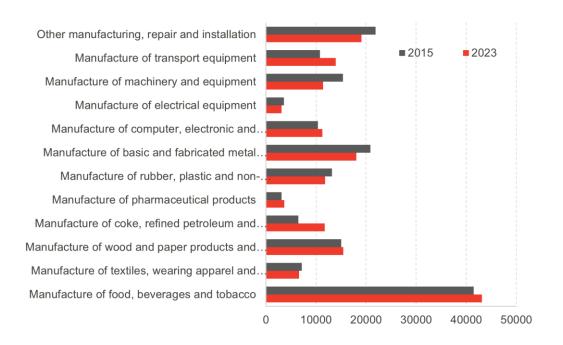
Pharmaceuticals have shown increasing export orientation in both Scotland and the wider UK. In Scotland, this suggests growing international competitiveness, while at the UK level, exports have shifted away from the EU and toward global markets - a likely adjustment following Brexit. However, input-output data also indicate a steady decline in direct government procurement of pharmaceuticals in both Scotland and the UK. Although a temporary convergence occurred in 2020–21, possibly linked to COVID-19, it remains unclear whether this signals a lasting policy shift or a short-term anomaly.

Nonetheless, these transitions have been uneven in both Scotland and the UK. Trade in dairy products and animal feeds, which rely heavily on regulatory alignment and short regional supply chains, has faced considerable post-Brexit friction. These sectors illustrate the persistent challenges in regulated, perishable, or logistically sensitive goods in a realigned global economy.

5. Employment in manufacturing

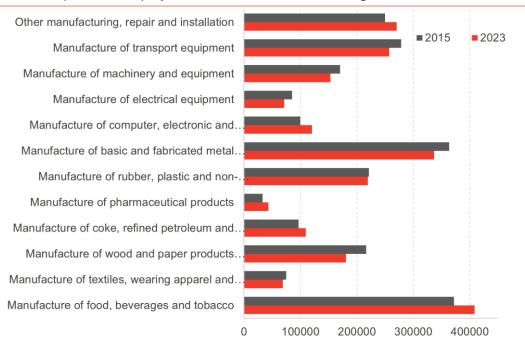
Between 2015 and 2023, full-time equivalent (FTE) jobs in Scotland's manufacturing sector remained stable. While this headline suggests resilience, sector-level data reveals a deeper transformation. Employment gains have been concentrated in a few high-value areas – such as food and drink, pharmaceuticals, chemicals, and shipbuilding – while capital goods sectors have continued to contract.

Chart 13: Full-time equivalent employment in different manufacturing sectors in Scotland



Source: NOMIS

Chart 14: Full-time equivalent employment in different manufacturing sectors in UK



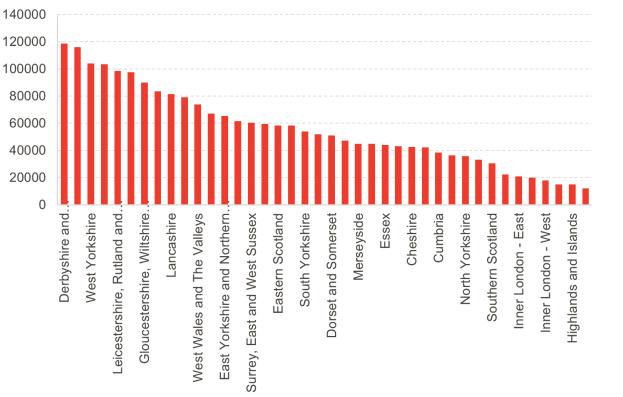
Source: NOMIS, NISRA

Scotland's manufacturing employment has not been preserved so much as rebalanced as growth in a few sectors offset wider decline. This mirrors shifts in GVA, with the economy tilting towards more exportintensive, high-value activities and away from labour-intensive or volume-based production. While these sectors can deliver strong returns, they are also less employment-dense and more volatile, raising questions about the long-term resilience of the manufacturing labour market.

- Food and beverage manufacturing added over 1,600 FTE jobs, driven by continued global demand.
- Chemicals grew by 4,975 FTEs, largely due to expansion in consumer and personal care products, rather than heavy chemical refining.
- Pharmaceuticals added 500 FTEs, supporting it's repositioning as an export-oriented producer.
- Shipbuilding expanded by 2,500 FTEs, highlighting Scotland's ongoing strength in defence and marine engineering.
- Other manufacturing, repair and installation grew by 2,800 FTEs, with rising demand for industrial servicing relevant to decarbonisation and circular economy transitions.
- In contrast, sectors that once underpinned Scottish manufacturing such as machinery and equipment, and metal fabrication – shed between 900 and 4,000 jobs each.
- Scotland's former electronics hub, "Silicon Glen," saw FTE employment in computers and communication equipment decline by over 1,000.

From March 1996 to March 2024, UK manufacturing employment fell from 4.26 million to 2.58 million – a loss of 1.68 million jobs. Over the same period, the share of manufacturing in total UK workforce jobs dropped from 15.2% to 7.0%, even as overall employment rose from 28.1 million to 36.8 million. In Scotland, the pattern is similar but less pronounced. Manufacturing employment fell from 343,000 in 1996 to 191,000 in 2024 – a loss of 152,000 jobs. The share of manufacturing jobs declined from 13.9% to 6.6%. However, Scotland's total workforce grew from 2.47 million to 2.9 million over the same period, suggesting a slightly milder proportional decline than the UK overall. This reflects a structural reallocation of labour in both

Scotland and the UK rather than absolute contraction. Chart 15: Manufacturing employees 2023 ITL2 Great Britain (no Northern Ireland)



Source: NOMIS

FTE manufacturing jobs in Great Britain fell by 1%. Growth in food, pharmaceuticals, and electronics was offset by decline in textiles, metal fabrication, and printing. This compositional shift mirrors Scotland's, though at a larger scale. Northern Ireland presents a contrasting trend, with manufacturing employment rising from 74,800 in 2015 to over 82,200 in 2022 with growth concentrated in food manufacturing, machinery and equipment, and pharmaceuticals. Like Scotland, its base is concentrated in fewer subsectors. (NISRA)

Scotland's apparent stability in manufacturing employment masks a deeper structural rebalancing. Jobs have shifted toward a narrower set of high-value, export-oriented sectors. While these areas generate higher productivity and wages – evidenced by rising Type I income effects in pharmaceuticals and electronics – they offer fewer jobs per unit of output. This reduces overall employment density and increases vulnerability to sector-specific volatility. Scotland's shipbuilding gains contrast with the UK's struggling automotive sector, underscoring regional divergence. Meanwhile, Northern Ireland's modest growth highlights potential resilience when supported by targeted sectoral strength. Overall, the UK's and Scotland's manufacturing sectors face a common challenge: declining employment in traditional sectors and growing dependence on a small number of high-tech or export-intensive industries.

6. Conclusion

The evolution of manufacturing in Scotland and the UK is characterised by broad decline and growing dependency on a few subsectors and on imported goods. However, there are long-run divergences in the structure, resilience, and strategic orientation of the manufacturing industry in Scotland and the UK.

Over recent decades, both economies have seen manufacturing shrink as a share of GDP, employment, and total business activity, with services becoming increasingly dominant. Though it has not always been the case, manufacturing today contributes more significantly to the Scottish economy than it does to the UK's. This speaks to the resilience of Scottish manufacturing, whereby the sector has an outsized influence on economic performance – especially in periods of volatility.

Scottish manufacturing is increasingly defined by a small set of high-value, capital-intensive, and exportdriven sectors - most notably food and beverage production, pharmaceuticals, and chemicals. These have underpinned the relative stability in output and employment but also heightened vulnerability to sectorspecific disruptions and global demand shocks. The closure of its only refinery and the structural challenges facing the electronics sector are clear examples of how such concentration can limit resilience.

In contrast, the broader UK manufacturing landscape remains somewhat more diversified but has also experienced significant decline, particularly in traditional industries such as steel and textiles, and is heavily reliant on high-tech and transport sectors. This, coupled with persistent supply chain dependencies and post-Brexit trade frictions, leaves the UK exposed to external pressures.

Employment trends further illustrate the transformation underway: both Scotland and the UK have shifted from labour-intensive manufacturing toward capital- and knowledge-intensive models. This shift yields higher productivity but results in fewer jobs per unit of output, perhaps raising questions about the sector's capacity to contribute broadly to inclusive economic growth and regional equity.

Recent quarterly data emphasises that manufacturing in both Scotland and the UK faces a future shaped by trade realignments, technological change, and climate transition. For Scotland, the challenge lies in diversifying its industrial base to reduce sectoral concentration while leveraging its strengths in food and drink, pharmaceuticals, and marine engineering. For the UK, a priority will be rebuilding industrial resilience by investing in supply chain security, domestic capacity, and skills development. In both cases strengthening the long-term viability of manufacturing will require a more forward-looking industrial strategy that balances competitive edge with stability in an increasingly uncertain global landscape.

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