# Manufacturing Momentum

Growing SME Manufacturing in Wales





Swansea University Prifysgol Abertawe

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## **About FSB**

The Federation of Small Businesses (FSB) is the UK's leading business organisation. Established almost 50 years ago to help our members succeed in business, we are a non-profit making and non-party political organisation that is led by our members, for our members. Our mission is to help smaller businesses achieve their ambitions. As experts in business, we offer our members a wide range of vital business services, including advice, financial expertise, support, and a powerful voice in government.

FSB is also the UK's leading business campaigner, focused on delivering change which supports smaller businesses to grow and succeed. Our expert team in Cardiff works with a variety of organisations, using research to lobby the governments, elected politicians, and decision-makers in Wales.



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# **Demographics** of Manufacturing in Wales

## Relationships between Sectoral Firm Numbers and Multipliers in Welsh Manufacturing

Number of manufacturing companies by firm size per 10,000 adults, 2018	Number of Employees	1 to 49	50 to 249	250+	Total
UK	799	252	7	1	1059
England	845	259	7	1	1113
Wales	561	207	5	1	774
Scotland	522	206	5	1	735
Northern Ireland	656	233	6	1	897
Wales as % of UK	70.21%	<b>82.14</b> %	71.32%	100%	73.09%

Number of manufacturing companies by firm size per 10,000 adults, 2021	Number of Employees	1 to 49	50 to 249	250+	Total
UK	768	253	7	1	1029
England	807	261	7	1	1076
Wales	582	207	5	1	796
Scotland	542	203	5	1	752
Northern Ireland	581	236	6	1	897
England as % of UK	105.08%	103.16%	100%	100%	104.57%
Wales as % of UK	75.78%	<b>81.82</b> %	71.43%	100%	77.36%
Scotland as % of UK	70.57%	80.24%	71.43%	100%	73.08%
Northern Ireland as % of UK	75.65%	93.28%	85.71%	100%	87.17%





## Foreword

The Welsh manufacturing sector has undergone significant change over the last decade, with new technologies, the further expansion of the circular economy, and a fast-changing competitive environment only a few of the things reshaping the landscape. The majority of Welsh manufacturing businesses are micro, small, or medium-sized enterprises (SMEs) which face particular issues concerning supply chains, training and skills, innovation, finance, infrastructure, and sustainability. With this in mind, Federation of Small Businesses Wales sought to gain a better understanding of the challenges facing SMEs in the Welsh manufacturing sector and commissioned research in this area.

Manufacturing, and the expertise within the sector, occupy a crucial space within the Welsh economy. It stimulates innovation, growing supply chain competence and helping to answer and address some of the great challenges of the time from growing the Welsh economy to the challenges of climate change. Sustainable economic regrowth will only be possible with a thriving manufacturing sector backed by clear ambition from decision-makers.

This work raised unsurprising issues such as problems with energy, transport, and the difficulties of recruiting a sufficient number of qualified staff. However, less obvious issues such as the lack of Welsh-based suppliers for many of the resources Welsh SMEs use also arose. The example of the business faced with a multitude of simultaneous problems struck a particular chord, the need to deal with the "everything, everywhere, all at once" scenario requiring multiple policies to open headroom for firms in the sector to be able to move toward growing their business toward adaptation and strategizing for opportunities from trends in the future. Making room for manufacturing also means providing this space and time at a time of 'everything everywhere all at once' to build their capacity for working toward the longer term.



The current crises present opportunities to think differently, look at what we value in our SME manufacturing base, and establish what we want to build toward. It is therefore a time for a reassessment at how we can support Wales's many excellent businesses to survive, develop, and resiliently grow for the future. We view the role of government to provide a clear steer and strategy, providing support and smarter regulation aimed at empowering smaller firms by giving them the headroom needed for growth. This will allow SMEs to look up from their immediate concerns and take in the longer-term horizon, preparing for recovery and a greener transition.

This report shines a light on the gap between short term pressures and long-term vision, and that in bridging that gap, there is significant opportunity for Welsh manufacturing businesses to place themselves on a more resilient footing, build skills and employment and prepare for future opportunities. Providing more headroom for time and resource-poor SMEs can therefore have significant economic benefits. It's important to link long-term strategy to the tactical short-term actions and use the actions to build firms' capacity and capabilities accordingly. Whilst the short-term needs for small businesses in crisis and long-term vision towards 2050 of Welsh Government are not in opposition, they do need to be articulated together in order to travel in the same direction and be mutually-reinforcing.

Addressing the challenges highlighted in this report undoubtedly present difficulties. However, as evidenced by the innovative approaches adopted by some of the businesses interviewed, there is room for novel and adaptable solutions. This report represents an important contribution to understanding the issues facing Welsh manufacturing SMEs.

FSB Wales looks forward to sparking conversations and delving into the most effective approaches for implementing the recommendations outlined by the skilled research team led by David Pickernell, Nick Rich, Gareth Davies, Annette Roberts, Pouya Sarvghad Moghadam, Gary Walpole, and Alan Price.



# **Executive Summary**

A strong Welsh SME manufacturing sector is vital for the productivity, resilience, financial robustness, and development of the Welsh economy. However, there is a lack of data and understanding about how the issues currently affecting the economy influence Welsh manufacturing SMEs short- and long-term strategies.

## Firms' and Stakeholders' Key Points

Interviews with (10) firms and (6) stakeholders<sup>1</sup> reveal that SMEs are focusing explicitly on growth as the primary objective, see innovation as a vehicle for this, and are extremely focused on staff issues currently. In contrast, stakeholders place much more emphasis on the circular economy and net zero agenda elements of sustainability.

This highlights the narrower current focus for SMEs, in an environment where short-term survival is less certain than in the pre-Covid environment in particular, and many feel that they are currently having to deal with "everything, everywhere all at once". Stakeholders take a longer-term view, more likely influenced by trends in government policy concerning sustainability and net zero in particular. This is, however, a matter of emphasis rather than of fundamental disagreement.

The lack of Welsh-based supply chains is a key issue identified by both firms and stakeholders, playing an important role in the amount of business won by Welsh firms, the strength of the economy, and employment. Recommendations linked to actions recommended by the <u>Social Partnership and Procurement (Wales) Act 2023</u> may also be of particular relevance here, promoting socially responsible outcomes pursued through supply chains, and supporting Welsh businesses and Welsh supply. Skills shortages were another area of consensus, with firms focused on more short-term basic skills areas and stakeholders focused on longer term leadership and sustainability-related skills.

Another strong area of agreement between firms and stakeholders is concerned with the lack of suitable buildings / land for expansion to meet growth aspirations, as well as availability and cost of energy. Regarding sustainability and circularity, stakeholders placed more emphasis on this, but there was consensus with SMEs (who also understood and were supportive of the sustainability agenda) of the need for government action to remove barriers to SME take-up. Issues over Feed-in Tariffs, energy infrastructure and difficulties working with the public sector, meant that there was frustration among SMEs that opportunities identified could not be exploited. Stakeholders saw potential solutions not only in better government action but also in the development of local partnerships and networks for recycling and knowledge-sharing.

Firms specifically also identify energy, land, staffing, and Brexit (lost export opportunities and / or supply chain disruption and / or staffing issues). Innovation is mainly customer-led and reactive, and consequently often currently focused on cost reduction, with finance availability often perceived as limited due to post-Brexit loss of funding sources. More generally finance is perceived as relatively less of an issue for SMEs, but mainly because of the current uncertain situation. For some there is less demand due to the post-Covid crisis inducing a wish not to take on more debt, for others in the post-Covid period they do not wish to add to already high debt levels, whilst for others the supply of finance, particularly from banks, is a barrier to their growth objectives, causing alternative debt and equity solutions to be explored.

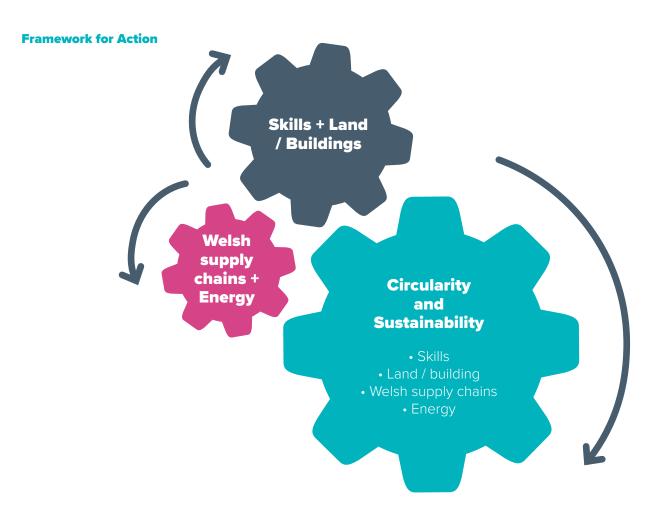
This report also shows that for priorities to be effectively set to increase the benefits from a healthy Welsh manufacturing SME sector, policy makers need to consider the environmental contexts that have and continue to affect such SMEs and the Welsh economy more broadly.

<sup>1</sup> In this context 'Stakeholders' covers local government and public sector bodies, Higher Education procurement, economic development, and representative bodies, from across Wales



### Recommendations

Taking all of this evidence together suggests the need for a three-phase approach from policymakers in Wales. The focus should be on alleviating, in the short-term, the pain many Welsh manufacturing SMEs are facing, to give them headroom, in the longer-term aiming to build a more resilient SME-growth entrepreneurial ecosystem in which they can maximise the opportunities that the circular economy offers. The following provides the broad framework for action in short, medium and long term, followed by more specific actions to build toward each timescale.



In the *short-term*, the focus should be giving certainty where possible.

- Skills, land and buildings are areas where there is high demand from SMEs. It's also an area where Welsh Government can swiftly flex the levers at their disposal to reduce barriers for small firms.
- In terms of skills, both Higher Education and Further Education can play important roles, leveraging the skills they have gained during covid for speedy creation of flexibly delivered (with strong reliance on on-line) short, demand-led courses. These should be co-created with small business representatives from across sectors, to ensure relevant design.
- In terms of land and buildings, an assessment of the resources available must take place and how they can quickly be brought into use, allowing manufacturing firms the space they need to grow.



In the *medium-term, energy access, security and affordability* is key to further alleviating the pain Welsh manufacturing SMEs are facing:

- As stewarded by UK and Welsh governments and their agencies, the development of stronger Welsh supply chains, would increase the resilience of the SME-growth entrepreneurial ecosystem. This will allow small firms in the manufacturing sector to better exploit the opportunities that the circular economy offers, because of the greater potential to network solutions within a coherent ecosystem. Protecting the supply chain in Wales should be a top priority for both governments.
- The evidence from the interviews with firms suggests the need for Higher Education institutions to link more
  effectively with the manufacturing sector, to deliver graduates with a better mixture of practical skills and
  more relevant innovation and leadership that firms can access. This therefore suggests a medium-term focus
  is needed to adjust the higher education offer to improve linkages with small firms in the manufacturing
  sector, provide work experience and assessments as part of learning pathways and support a two-way
  interchange of knowledge that will link to longer term aspirations.

Finally, developing the *long-term sustainability and circularity* agenda will generate opportunities for Welsh manufacturing to develop more resilient SMEs with greater potential for survival, development and growth.

The Welsh and UK Governments must deliver a greater focus on **innovation** a fairer provision of finance in Wales as compared to other UK regions and nations. This will require specific policy actions, in the short, medium and long term.

## **Specific Policy Actions**

#### Short-term Actions

- Skills and training
  - Welsh Government should explore developing a skills and training "dating-style" hub with which businesses could interact to identify suitable skills and training courses and be matched to those already available through government, FE and HE.
  - The Departments for Economy and Skills and any appropriate stakeholders should use data through this hub to identify current needs for short courses to steer rapid response from FE and HE sectors supported by government.
  - Welsh Government should identify where this should sit, and whether an institution already mapping supply chains in manufacturing, such as Manufacturing Wales, would be a sensible place to develop and host the hub. Alternatively, it could be housed in Business Wales as part of the Welsh business support one-stop shop. The pros and cons of each should be analysed accordingly.
  - UK and Welsh Governments should work together to use available levers of government including Degree Apprenticeship levy funding, and the use of public procurement to promote skills and training activities and opportunities.



## Land / Premises

- Welsh Government should develop a searchable property, premises, and land atlas database, with which businesses could identify and be matched with suitable property, premises, and land. This should include information around appropriate uses of property, as well as size, and possibly estimates of cost for any conversion of usage.
- Welsh Government should further develop:
  - assessment for rationalising planning regulations
  - Welsh Government should provide short term tax reliefs to small businesses intending to move into larger buildings and hire new staff and look at further powers for reliefs for improvements to premises and machinery over longer timescales as appropriate in order to aid the transition to net-zero.
  - enabling legislation to allow pooling and sharing via a cooperative for energy, owners and tenants, in a Ynni Ogwen-type approach for SMEs to work collectively, facilitated by key building / site managers.

## UK

- The UK Government's recent announcement of a joint investment package with Tata Steel in Port Talbot
  which aims to keep the plant operational and transition to a more environmentally friendly steel production
  process. A proportion of the £100m earmarked for the Transition Board should be used to work in partnership
  with Tata and academic experts to assess and map the supply chain impacts, and also outline areas for
  skills and supplier development within Wales taking in opportunities in the transition to greener production
  process.
- The Transition Board needs to bring together key partners, with UK and Welsh Government needing to work in partnership to ensure it is used to map out longer term strategies and approaches to mitigate the risks and maximise the opportunities in transition to net zero in manufacturing for the future in Wales, including for SMEs. The board should include representatives of smaller businesses and those affected throughout the supply chains.



- The UK Government Department for Business and Trade should develop an Automation Fund, providing small businesses with grant funding to automate processes where access to labour is challenging. This could be targeted towards specific sectors to ensure that small businesses are also training and developing their staff, as a prerequisite to eligibility, firms should have a training plan in place.
- The UK Government Department for Business and Trade should pilot a scheme to enable businesses looking to "on-shore" or "re-shore" manufacturing processes to overcome barriers they face.
- The UK Government Department for Energy and Security should decrease the eligibility thresholds for firms to be eligible to apply for Industrial Energy Transformation Fund (IETF). The current threshold for energy efficiency and decarbonisation projects should be reduced from £100,000 to £20,000. The Department should also consider lowering the minimum engineering and feasibility studies thresholds.

## **Medium Term Actions**

- The funding for Development Bank of Wales (DBW) and Business Wales after 2025 remains uncertain. This
  funding and status should be secured to give greater certainty to SMEs and to signal a focus on long term
  SME development.
- Alongside the matchmaking hub for land and premises, Welsh Government should develop a searchable supplier database matchmaking service, where businesses could identify and/or be matched with suitable suppliers.
- Welsh Government should use data from this service to identify ongoing needs that may require supplier development to be met. This can then identify potential areas for funding and finance.
- Increased partnership between business and HE to ensure the continued development of more specifically
  relevant courses with appropriate mixture of practical skills and more relevant innovation by increasing
  representatives from businesses and SMEs for example.
- Assess success of Development Bank of Wales's Efficiency Loan Scheme and scale-up as necessary.
- The UK Government should follow the recommendations outlined in FSB's 'Customs Clearance' (March 2023) report and should adopt a 'think small first' approach to customs policy development making trade easier, cheaper and more attractive for SMEs. This includes use of digitisation and ensuring customs have capacity and skills to address current delays in the process.
- Welsh Government should include business premises in any future schemes (such as the recent Arbed scheme) to access support for retrofitting measures. Welsh Government could consider broadening any such schemes to non-domestic premises, targeted at landlords to improve energy efficiency. Whilst the terms of this would need to be different to the domestic scheme which rightly target issues such as fuel poverty, incentives such as low cost or 0% APR loans could be considered to support transition.



## Long-term Actions

- Welsh Government needs to move quickly to assess the future infrastructure needed for circular economy opportunities and how they will deliver them, including
  - new waste management hubs,
  - matching materials to sectoral needs.
  - opportunities to spin off business capacity and capabilities building to provide services in Wales.
- Business Wales and support bodies to continue developing sustainability support, advice, finance and support, and ensure support capacity matches Welsh Government aims and needs. Identify how to best deliver this (e.g., local hubs housing expertise)
- Welsh Government to use all schemes (such as DBW sustainability loans) to upskill areas that have touchpoints with businesses (e.g., accountants) and/or build capacity for sustainability advice and green audits.
- Build education, skills and training skills system to align with and support the above
- Mainstream support for small businesses' HR activities through roll out of programmes such as You and Co2
- Welsh Government to ensure Social Partnership and Procurement Act is used to cascade the support to lower down chains and smaller firms, and data to be made available for scrutiny through Senedd Committees
- UK Government and Welsh Government should work together to assess and act upon specific Welsh innovation and R&D points of opportunity to stimulate demand for and supply of circular economy and net zero opportunities. Example include opportunities offered by tidal lagoon / barrage electricity generation.
- UK Government, Welsh Government and support and funding bodies should explore more creative use of funding to support innovation. 'Funding for testing' would be useful for ensuring very expensive machinery is able to be exploited properly.
- They should also develop a policy requiring HE access for innovation funds be linked with requirements for collaboration with SMEs in Wales. This would help to address the issue of a reduced funding pot as well as foster better linkages between the sectors.
- There would also need to be a parallel need to develop links both higher up supply chains, in terms of machinery and training through larger businesses alongside the innovation funds through HR, looking to develop the entrepreneurial ecosystem as a whole toward innovation.
- Welsh Government should also review the size of funds available where relatively small-medium amounts of funding are needed. There appears to be a funding gap between small pots (£5,000) and large pots (£1m).
   Breaking currently larger pots into smaller pots, and / or ensuring a proportion are set aside for SME funding would look to address a missing middle and help develop smaller firms to grow.
- Welsh Government should look at creating and using an arm's-length development body (such as an 'International Wales' body FSB have called for in its previous reports) to develop additional sources of finance to reduce the reliance on DBW, by growing the investment offers across the full range of sources, from banks, to institutional, angel and private equity investors, to crowd funding.



There needs to be an understanding of network building as a 'mutual process' not 'an event', with measures
to reflect this. Action and policy intervention should act to serve the parallel needs of SMEs' short term and
Welsh Government and stakeholders' longer term aims. This should focus on a process build understanding
of each other's needs, which also supports the need for continuing evaluation of the prospects for SMEs in
manufacturing in Wales in terms of supply chain, innovation, finance, infrastructure, and sustainability issues.

Taking a holistic approach to address the different needs across the timelines outlined in this framework would provide time and space, giving SMEs much needed headroom to raise their vision above the immediate here and now, while also raising stakeholders' awareness of those immediate pressures in terms of time and cost. Put together, these actions form the middle part between long term aspirational vision seen in strategic documents, and the short-term needs and targets that can become the focus of policy buffered from pillar to post in the current economic storms.

The report expands on these issues and is structured as follows. Chapter 1 outlines the approach followed in gathering and analysing the data for this work. Chapter 2 discusses the results from the interviews, whilst Chapter 3 uses available secondary data to place the findings from the interviews in context and derive policy recommendations. Chapter 4 then draws these conclusions together and identifies the short-, medium- and long-term nature of these policy recommendations.



## Chapter 1

# Background and Approach

The focus of this report is to understand the challenges in manufacturing in Wales from a SME firms' perspective, looking at commonalities and the priorities as they see them. We also wanted to see how these compared with the views as set out by Welsh Government and stakeholders in manufacturing sector, particularly public sector buyers of Welsh manufacturing suppliers. The aim was to see how the views compared, but also how we could ensure those views while looking to different immediate interests, could be brought together in practice to a wider common horizon.

**Key Demographic Statistics in Manufacturing** 

137,400

Total employment in manufacturing in 2021 excluding self-employed (10.29% of total employment)



**higher than in 2010** in terms of total numbers of employees (130,100),

but lower as a proportion of total employment (10.33%)



Proportion of Welsh GVA from manufacturing also declining from 16.9% to 16.1% between 2010 - 2020

Between 2010-22, Manufacturing in Wales has seen a modest (5%) rise in the total number of Welsh enterprises. However, this, has been unevenly distributed.

## Large firms



The strongest rise occurred in large firms (with over 250 employees), increasing by over 15%

## **Medium firms**



With micro (1-9 employees) and medium sized firms (50-49 employees) increasing by nearly 10% each.

## Small firms



BUT small firms (10-49 employees) seeing a reduction of nearly 20%



As such, this report is based on available secondary data sets, and primary research based around semistructured interviews with Welsh manufacturing SMEs from across the manufacturing sub-sectors, all of which can be considered relatively successful within their activities. Interviews also took place with and key stakeholders, covering local government, public sector, and HE procurement, economic development, and representative bodies, from across Wales. The questions all allowed "free answers" rather than choosing from a predetermined list, to allow the key issues as identified by the interviewees themselves to be brought through the process organically and without interviewer prompting and bias.

## **Table 1: Interviewee Details**

Organisation Type	Sector	Location	Size
1. University	Education	South Wales	Large
2. Public Procurement	Health	Wales-wide	Large
3. Public Procurement	Health	Wales-wide	Large
4. Peak Body	Manufacturing	Wales-wide	Small
5. County Council	Enterprise and Regeneration	North Wales	Large
6. County Council	Business Support	North Wales	Large
7. SME	(30) Manufacture of other transport equipment	Southeast Wales	Small
8. SME	(32) Other manufacturing	Southeast Wales	Micro
9. SME	(22) Manufacture of rubber and plastic products	Southwest Wales	Small
10. SME	(24) Manufacture of Basic Metals	Southwest Wales	Small
11. SME	(25) Manufacture of fabricated metal products,	Southeast Wales	Medium
	except machinery and equipment		
12. SME	(28) Manufacture of machinery and equipment	Southwest Wales	Medium
	N.E.C.		
13. SME	(33) Repair of electrical equipment	Southeast Wales	Medium
14. SME	(30) Manufacture of other transport equipment	Southwest Wales	Micro
15. SME	(10) Manufacture of food products	Mid Wales	Medium
16. SME	(25) Manufacture of fabricated metal products,	Southwest Wales	Medium
	except machinery and equipment		

Note: Figures in parentheses denote SIC code

The interviews were carried out between April and June 2023, the data from these organisations having been anonymised. This micro-level analysis is then supplemented by a broader, more macro-level, analysis using available secondary data, to identify how the issues raised in the interviews may be manifesting themselves in the broader economy, and consequently what the most appropriate policy responses and priorities would be. Using these two perspectives, policy recommendations are then generated and discussed.

These interviews provided a wealth of information, and we are grateful to our respondents in being generous with their time and candid with their insights. It is worth noting that we encountered substantial difficulty in getting prospective interviewees to respond to requests, compared to previous times. This tells a story in itself. We would deduce that this reflects, for those unable to respond, that our findings around lack of time and the need to address other myriad issues and pressures in the here and now, also pertains to others who did not self-select in response to invitations to interview, but even more so than for those represented here. Nevertheless, clearly those who engaged were more able to respond than perhaps the wider sector. This is a normal part of qualitative research, but perhaps starker in this particular round of research interviews.



## **Key Policy Drivers**

## **Economic Environment**

The **economic crisis** which arrived in the wake of Covid-19 and the impacts of this, and the recent energy price spikes make day-to-day business increasingly challenging. Many businesses are focused on surviving the storm and struggle for capacity and headroom for planning ahead. A necessary focus on cost also means that there are other vulnerabilities and risks across supply chains.

#### **Transition to Net Zero**

The transition to net zero provides long-term opportunities for Welsh manufacturing, but also represent shorterterm challenges to firms in adjusting operations. This is an area where specific UK and Welsh Government policy support and strategic clarity mapping out next steps, guidance and steering could have impact on firms' understanding on how to best proceed.

#### **Manufacturing Trends**

The negative long-term effects of economic and geographic peripherality continue to affect Welsh manufacturing in many ways, including finance, public procurement, and infrastructure. The proportion of **Welsh GVA** from manufacturing declined from 16.9% to 16.1% between 2010 and 2020, suggesting that changes in the structure of Welsh manufacturing, overwhelmingly taking place at the SME level, have not arrested the decline in the direct importance of manufacturing to the Welsh economy. Partly this is likely to be related to the way the modest increase in the total number of manufacturing enterprises is distributed, particularly the reduction in small manufacturing enterprises constituting a **"missing middle"** within the SME sector itself<sup>2</sup>.

## **Multiplier effects of manufacturing**

Multiplier effects are key to economic strategy, where investment in particular sector have multiple beneficial effects beyond the original investment such as in growing employment, supply chains, skills and so on. It is alarming that there is a negative correlation between the **structural changes** in Welsh manufacturing (as represented by changes in numbers of firms in each sector) and multipliers<sup>3</sup>, specifically **GVA** and **employment multipliers**<sup>i</sup> (i.e. growth has occurred in sectors with lower GVA and employment multipliers and vice versa). Strengthening local supply chains, using powers in the <u>Social Partnership and Procurement (Wales) Act 2023</u> so that manufacturing impacts more on the economy.

## The UK-EU Trade and Co-operation Agreement

As analysed by FSB in the report <u>'Customs Clearance: The Road to Seamless Trade for Small Businesses</u>', the terms of the UK-EU Trade and Co-operation Agreement and the UK Government's decisions on areas of domestic policy affecting trade in goods has changed the landscape for both customers and suppliers.

Any increased friction in the trading environment between the UK and EU will have a greater effect SMEs that are more embedded in the EU market, such as the Welsh manufacturing sector (as both a market and supplier of intermediate goods). The trading environment has particularly serious potential impacts in Wales.

<sup>&</sup>lt;sup>3</sup> The effect of an increase in the use of an industry output on the direct increase in the output of the producers in that industry, but also, as these producers increase their output, the indirect increase in use in their supply chain, and then, as a result of both, household income increases because of increased employment and wages, a proportion of this then re-spent on final products, as an induced effect. These multiplied effects can then be shown in terms of output, employment and Gross value Added (GVA)



<sup>&</sup>lt;sup>2</sup> Namely that between micro and medium-sized firms, it is the small firm size in the middle of these groups that is potentially most problematic

## Chapter 2

# Welsh Manufacturing SMEs in Focus: Interview Findings

The research is focused on a number of key issues identified as needing study and analysis for policy intervention in Welsh Manufacturing sector and SMEs. Welsh manufacturing has undergone significant changes in recent years, with a greater focus on more advanced manufacturing, technology, and innovation<sup>ii</sup>. Welsh manufacturing is increasingly focused on **producing** more high-value and / or advanced products, such as those in aerospace components, medical devices, and electronics. Welsh manufacturers are also **investing in and adopting** new technologies in automation, robotics, artificial intelligence, and the Internet of Things, to increase efficiency and competitiveness.

Universities are also supporting this through Welsh Government-supported initiatives, such as the ION leadership project (in which Swansea and Bangor universities deliver a European Social Fund practical experiential learningbased programme to help business leaders solve real-world problems) and Agor IP (which supports businesses in commercializing intellectual property). Concurrently, Cardiff University and Cardiff Metropolitan University, through their <u>Small Business Charter memberships</u>, are able to deliver the UK government funded <u>Help to Grow</u> <u>scheme</u> for SMEs. This is in addition to facilities such as <u>AMRC Cymru</u> in Broughton (part of the University of Sheffield Advanced Manufacturing Research Centre and a member of the High Value Manufacturing Catapult consortium of leading manufacturing and process research centres backed by Innovate UK) and the <u>Advanced Manufacturing Skills Academy (AMSA)</u> at University of Wales Trinity St David (which aims to develop, maintain and build the skills required by manufacturing apprentices and employers to deliver the technologies that keep Welsh manufacturing competitive).

Welsh manufacturers face a need for skilled workers as the global business environment transitions to a greener economy and the skills landscape will be shaped accordingly<sup>iii</sup>. In terms of areas related to offshore wind and tidal (electrical engineering, welders, engineering, project managers and product development managers), circular economy (engineers and material scientists), and the automotive sector (mechanics, EV charging engineers, to name but a few, mirrors examples in other sectors here). Difficulties in developing, attracting, and retaining talent impacts the competitiveness of Welsh manufacturers. An ageing population, and population growth now dependent on inward migration, as Wales is part of a UK labour market where labour mobility takes place largely within, rather than between, regions and nations are also key factors<sup>iv</sup>.



Welsh manufacturers are also working together and forming clusters. This assist in the sharing of resources, knowledge, and expertise, and to collaborate on research and development projects. There is also greater emphasis on sustainability and the circular economy, seeking to reduce waste and increase resource efficiency. There is, however, a tension implied in between the short-term emphasis on generating wealth and jobs and the longer-term goal of transitioning to a more circular economy, with growth within planetary boundaries / slower growth<sup>v</sup> / or degrowth. In many ways, this may be a matter of defining what we mean by growth and how we link it to what we value<sup>4</sup>. In any case, this requires clear definition, and articulation between the long-term aims and economic incentives through governmental strategy. Conversely, green industry opportunities also exist for Welsh manufacturing, but are often heavily dependent on UK government support, which is sometimes not forthcoming (e.g. Swansea Bay Tidal Lagoon).

The current concrete application of this vision is currently wrapped up in projects such as the <u>Celtic Freeport</u> <u>concept</u>, which aims to use the ports of Milford Haven and Port Talbot to create a green investment corridor spanning clean energy developments and innovation assets, fuel terminals, a power station, heavy engineering and the steel industry across south-west Wales. This would also include floating offshore wind and focus on the hydrogen economy to create sustainable fuels, cleaner steel, and low carbon logistics. The aim is to use this focus to create a green industry with a substantial number of new manufacturing jobs embedded locally to create a renewable energy legacy with global export potential. Similar projects are being developed for Ynys Mon/ Anglesey freeport to support the developments towards an 'Energy Island'.

Exploring new export opportunities through trade agreements and partnerships is also something being encouraged by government policy<sup>vi</sup>. There are, also now organisations such as <u>Manufacturing Wales</u>, a knowledge-sharing space that enables manufacturers to discuss and offer solutions to each other. Explicitly focused on raising the credibility of Welsh brands, the aim, importantly, to maximise supply chain opportunities and building-in resilience for their member organisations.

<sup>4</sup> https://www.fsb.org.uk/resource-report/what-we-value.html



## **Policy Recommendations**

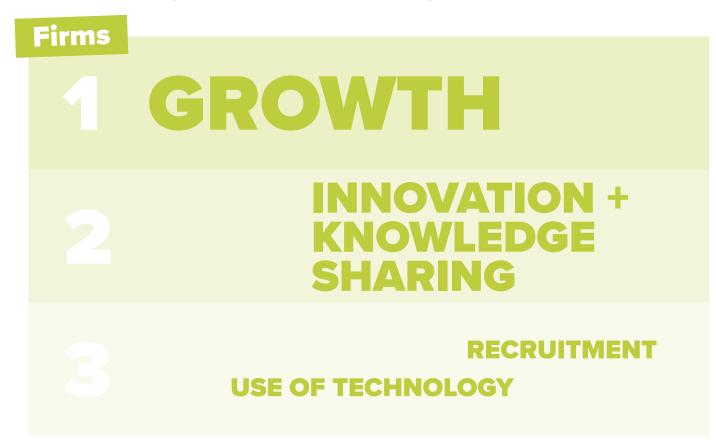
Overall, these trends and the Welsh Government's focus on supporting manufacturing to continue its importance as a key driver of the Welsh economy, highlight the need for continuing evaluation of the prospects for SMEs in manufacturing in Wales, particularly in terms of supply chain, innovation, finance, infrastructure, and sustainability issues.



The results of the interviews are shown below, broken down into a number of sub-issues around objectives, and supply chain, innovation, finance, infrastructure, and sustainability issues. For each sub-section a summary table shows the top 3 issues identified by the interviews, both for SMEs and broader stakeholders, the subsequent discussion focusing on the specific issues of importance identified but also the key areas of agreement and divergence between the two groups. It is important to note that in each of these the responses were to open questions rather than a closed list of possibilities, and so reflected the concerns firms identified for themselves unfiltered by interviewer bias.



## **SME Aims and Objectives: Growth & Sustainability**



# Stakeholders

# 1SUSTAINABILITY2TRAININGEXPORTING<br/>(including dealing with issues caused by Breek)

SMEs are more likely to focus explicitly on growth as the primary objective, often seeing innovation (in various forms) as a vehicle for this, whilst acknowledging the need for staff recruitment to facilitate, and the difficulties the current situation creates. The following quote summarises this: -



"We have a 3–5-year plan to grow the business from £5m to £8m, which will require us to recruit an additional 12 engineers. This was determined by our relocation in 2016, the size of the unit we moved into being judged to allow an expansion to £8m. However, Brexit and covid have scuppered our plans in the last few years, pushing us back particularly in the last 3 years. We had been growing at 20% per annum...Before Brexit we had been exporting 10% of turnover, had opened a subsidiary in Poland, and were serving Poland and Germany. We used to have timelines of 48 hours each way, and a cost of £30. Now it is £180- and 10-days turnaround, so the market has disappeared. In Poland... we've pulled out of the export market. **On top of that, in the first year of Covid 40% of our turnover was lost.**"

Generally, stakeholders place much more emphasis on sustainability, with training as a facilitator, but also exporting (which many SMEs do not emphasise because they don't export / have faced issues caused by Brexit so have been dissuaded from prioritising). Summarising, one stakeholder involved in supporting SMEs, said: -

"SMEs tended to be just hanging on, needing help and with less viability. Their aims over the next few years have to be to get the right workforce, dealing with the skills gaps they currently face, and upskilling the workforce they already have. They also need to deal with the consequences of Brexit in terms of the issues around exporting, which are a concern, and where they need additional guidance and support. **Moving towards carbon zero is also an objective, with a need to share best practice in terms of supply chains and the circular economy.**"

More broadly, the interviews highlight the narrower current focus for SMEs, in an environment where short term survival is less certain than previously. One SME's quote summarises this: -

"I've got to find 150,000 pounds worth of cost savings, just to stand still, and R&D disappears, and when your investment in people stops, they start to disappear. It's slow, particularly if you're battling other countries in Europe with relatively secure prices or secure supply. I've written many, many,



business plans this year. It has been the most difficult to try and balance with growth and investment. Looking at the mix of the forecast work, with all the various materials increases, energy cost increases, cost of living pressures with regard to wages, business rates. All those commodity costs, you know, consumable costs have gone up as well. **So, we're not just battling one area. Like every other business we're trying to battle it across.** Yes, we will raise prices where we can, but that's sensitive. So, whatever you plan, if something changes in between then you're going to take that knock off the margin as well."

Stakeholders have a longer-term focus, more likely influenced by government policy concerning sustainability and net zero. Typical of this: -

"From our point of view, the focus should be on government objectives on sustainability, as well as adding social value, and knowledge sharing as ways to enhance SME development and growth. Our procurement is trying to promote the sharing of knowledge and to gain sector insight, to get knowledge outside the usual procurement relationship. This will be a real differentiator going forward. **In our purchasing, we are therefore looking at both value-added and the organisational target of net zero by 2035, which means we need to leverage our suppliers more and more going forward.** We are also using our procurement with local SMEs to help meet requirements and demonstrate local business support... In addition, however, often the suppliers are very niche which means we rely on the SME adding value outside initial good or service, through niche knowledge sharing."

Overall, however, (and as we see articulated more below) this appears to be a matter of emphasis rather than of fundamental disagreement.





## **Customer and Supply Chain Issues: The Lack of Welsh Suppliers**

Table: Most important issues, deficiencies, and future requirements with regards to supply chains and customers (Top 3)

Issues	Number of Firms	Number of Stakeholders
Input costs (Including staff and land)	2	=2
Lack of local (Welsh suppliers)	1	1
Automation / ICT		=2
Brexit Costs	3	

In terms of supply chains there is consensus between firms and stakeholders on the lack of local Welsh suppliers as a major issue, with a need to facilitate development in this area, to assist in increasing the resilience of Welsh manufacturing as well as to bolster multiplier effects. An example that illustrates this is from a medium-sized food company: -

"Suppliers are an issue in terms of increased costs, but we can (and must) pass costs on, which then has a knock-on effect. Fortunately, costs are coming down, but we get most of our raw materials from (outside the UK) with very little from the UK or Wales (due to lack of availability at the required cost). We could get (some low value raw materials) locally but we only use low numbers of these, and they are more a commodity than anything else."



In addition to firms increasing their networking and supplier development activity, government was also seen as having a role here. Some SMEs also identified public procurement as having relevance here in terms of strengthening local procurement requirements and increasing their focus on public value more holistically rather than just lowest cost.

"In the past quality took the lead for us. We were not the cheapest, but we were very customer focused. At the moment it's all about cost. ...The Welsh Government need to make sure Welsh money stays in Wales. The supply chain is bleeding out the economy- with money going to competitors."

SMEs (and stakeholders to a lesser extent) also highlight input costs as of major importance, the areas identified, raw materials, components, energy, land, and staffing costs, related to skills, and sustainability discussed further below.

There was no consensus over customer issues, though several firms identified Brexit-related costs as having impacted negatively on their export markets (either significantly reducing or eliminating altogether their activities in Europe in this area), one company also finding supply chain opportunities to replace EU suppliers because of the trading difficulties post Brexit trading arrangement had created.

Generally, however, difficulties caused by Brexit could be seen as part of the wider suite of issues, not least the increased emphasis on price and costs incurred by longer delivery times: -

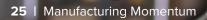
"For customers, in Europe Brexit is an issue. It has become more complicated, and pricing is now more of an issue, because we are not as competitive. Our customers want a price competitive product to move into, so we need to take cost out of the offering. Instead, we have lost market share because of the additional costs and complexity of shipping, delays. As a result, they've opted to go to a locally sourced alternative, now that it takes day 10+ days, not 3 days for delivery after an order. Our sales have halved in Europe, though covid has also affected this."

The new Social Partnership and Procurement Act (2023) has the potential to provide some levers to share risk across supply chains and therefore steer the analysis of risk away from a focus only on cost, but this will require building support from across the supply chain from the top-down and bottom-up. There's also means by which we can make the connections and networks so that knowledge of suppliers is shared through mapping and an interface to allow SMEs to do so.



## **Policy Recommendations**

- Welsh Government should look at creating and using an arm's-length development body (such as an 'International Wales' body FSB have called for in its previous reports) to develop additional sources of finance to reduce the reliance on DBW, by growing the investment offers across the full range of sources, from banks, to institutional, angel and private equity investors, to crowd funding.
- The UK Government should follow the recommendations outlined in FSB's 'Customs Clearance' (March 2023) report and should adopt a 'think small first' approach to customs policy development making trade easier, cheaper and more attractive for SMEs. This includes uuse of digitisation and ensuring customs have capacity and skills to address current delays in the process.
- Welsh Government should explore developing a skills and training "dating-style" hub with which businesses could interact to identify suitable skills and training courses and be matched to those already available through government, FE and HE
- The UK Government's announcement of a joint investment package with Tata Steel in Port Talbot which aims to keep the plant operational and transition to a more environmentally friendly steel production process. This is a key development for Wales. A proportion of the £100m earmarked for the Transition Board should be used to work in partnership with Tata and academic experts to assess and map the supply chain impacts, and also outline areas for skills and supplier development within Wales taking in opportunities in the transition to greener production process.
- The Tata Transition Board needs to bring together key partners, with UK and Welsh Government needing to work in partnership to ensure it is used to map out longer term strategies and approaches to mitigate the risks and maximise the opportunities in transition to net zero in manufacturing for the future in Wales, including for SMEs. The Board should include representatives of smaller businesses and those affected throughout the supply chains.



## **'Reshoring' Manufacturing Processes**

In August 2023 FSB published a report 'The Tech Tonic' on innovation and small businesses including a comprehensive survey of SMEs on the relevant issues. The report included several recommendations on tackling barriers and incentives for improving manufacturing processes.<sup>5</sup>

During the pandemic and uncertainty related to global supply chains, we saw more businesses move their manufacturing supply chain back to the UK. Government should work with a diverse range of businesses who would like to on/ re-shore their manufacturing processes, identify the barriers that are preventing them from doing so and what policymakers could do to enable them bring their manufacturing processes to the UK, and Wales.

## **Policy Recommendations**

• The UK Government Department for Business and Trade should pilot a scheme to enable businesses looking to "on-shore" or "re-shore" manufacturing processes to overcome barriers they face.

## Skills

# Table: Most important issues, deficiencies, and future requirements with regards to skills and innovation (Top 3)

Issues	Number of Firms	Number of Stakeholders
Poaching of trained staff (including lost knowledge)		= 1
Lack of skilled workers (recruitment)	= 2	= 1
Procurement skills		= 1
Need to train	1	
Need for industrial strategy for skills	= 2	

In terms of skills, there was a consensus about the seriousness of the situation, but different strategies being employed. The lack of skilled staff, poaching activities by rival firms, and necessity (but also difficulty in current market conditions) of paying staff more to retain staff were all mentioned by SMEs and stakeholders, with increased in-house training being the most popular solution for SMEs.



<sup>5</sup> For the full report and recommendations, see https://www.fsb.org.uk/resource-report/the-tech-tonic.html

"There is a deficit in the job market regarding skilled workers, and if there is a well-established candidate, they demand higher wages. So, (the organisation) offer higher salary to workers with minimal experience. To offset this deficiency, (the organisation) have provided training in-house to the new employees of the organisation. Also, the core team within the firm are qualified based on experience, not based on training and development."

## AND

"The main issue is that people management and leadership skills are missing from the next layer of management down. The company is trying to develop their own, but the MD does not have the time to train people and there is nowhere to send these people. In the past there would have been large companies with large apprenticeship numbers and management training locations. These companies do not exist now, so whilst high level leadership training is available, training at the next level down is missing. As a result, succession planning is also a big issue as the skills are experience are not there."

This tended to be at the general level rather than specific skills, stakeholders identifying specific areas of leadership, sustainability, and procurement as key to SME development.

"The major deficiency we are finding is in terms of carbon awareness and carbon literacy, a problem that is admittedly wider than just SMEs. Our decarbonisation ambitions need us to know where materials come from, and for the knowledge to trickle down to SMES from our larger suppliers to enhance greater understanding and the need for upskilling. In terms of innovation a lot is already happening, but we need to find ways to encourage more, particularly in terms of problem-solving pull innovation<sup>6</sup> rather than the firm having a great product / innovation that they want to push<sup>7</sup>."

<sup>7</sup> Innovation solutions driven by technological solutions driven by firms supplying customers.



<sup>&</sup>lt;sup>6</sup> Innovation solutions driven by customer identified needs / problems

Again, this seemed to emphasise a more immediate, short-term focus for many of the SMEs, symptomatic of the current market uncertainties and pressures, the stakeholders emphasising skills sets more likely to bear fruit in the longer term.

Some also expressed the view that more practical engineering skills were not focused on enough in more traditional universities, leading to "flying the desk" graduates rather than ones who were interested in "flying the screwdriver", perceived as part of a wider lack of respect for manufacturing relative to the service sector.

"The nature of our business means that Brexit has caused us to lose access to EU personnel. This is a problem because the UK education system generally doesn't respond well to the needs of industry, and older universities tend to be less hands-on. Former polytechnics are better. In Europe, there is greater integration in education at all levels, French universities having a greater hands-on attitude in their teaching, and in Germany you are applauded as an engineering graduate... the UK lacking this mentality and skills set. There is a need to encourage students to engage in practical skills, less of the DfE, low cost, tick box focus. Investment in this in the UK is lacking, with a need for ideas and passion for doing things that are transformational. The UK tends to be "desk" ... focused, and there needs to be a multitasking mentality (which exists in Europe), ... as well as investment in the infrastructure, teaching staff, and MATERIALS needed for FE and HE to deliver the required skills. Some materials, that used to cost £300 now cost £1300 because of difficulties caused by Brexit".



## **Policy Recommendations**

- Welsh Government should explore developing a skills and training "dating-style" hub with which businesses could interact to identify suitable skills and training courses and be matched to those already available through government, FE and HE
- The departments for Economy and Skills and any appropriate stakeholders should use data through this hub to identify current needs for short courses to steer rapid response from FE and HE sectors supported by government.
- Welsh Government should identify where this should sit, and whether an institution already mapping supply chains in manufacturing, such as Manufacturing Wales, would be a sensible place to develop and host the hub. Alternatively, it could be housed in Business Wales as part of the Welsh business support one-stop shop. The pros and cons of each should be analysed accordingly. UK and Welsh Governments should work together to use available levers of government including Degree Apprenticeship levy funding, and the use of public procurement to promote skills and training activities.

Patricia Mawuli Porter OBE and Jonathan Porter Metal Seagulls



## Innovation: Reactive, Customer-Limited Cost Focused, and in need of Support

## FSB categorises innovation into four different categories:



## Table: Most important issues, deficiencies, and future requirements with regards to innovation (Top 3)

Issues: Innovation	Number of Firms	Number of Stakeholders
Customer led; demand pull innovation as key USP	= 1	= 1
Lack of investment by customers in latest		= 1
innovation (inc, smart factories and sensors)		
Lack of finance for SME innovation (including	= 1	
Difficulties obtaining grant finance because of Brexit		
induced cross subsidisation of university research)		
More supportive government policy	= 1	= 1

FSB's 'The Tech Tonic'<sup>vii</sup> report found that the average cost of making innovations to manufacturing process among those surveyed was £36,495, which much more expensive than other innovation. As a result, these innovations are vital to keep up with the market in manufacturing, but those considering large, innovative changes to manufacturing processes are much more likely than others to identify cost as a barrier than was found in other sectors.

The discussion over innovation was much less pronounced than for skills, in part as it's a wider concept when it comes to firms' practical application. The SME's innovation activities tend to be reactive, customer led, demand pull in nature.

"In terms of innovation for us this is incrementally focused not radical. Customers come to us, our products being a component not the whole for our customers' products. This makes our innovation demand driven, our customers telling us the trends. So, we are listening to customers and being reactive, but needing to be more detailed as customers have very specific requirements."



"It's the old 80:20 rule, okay. 80% of our volume comes from 20% of our customers. So, by working with 20% of our customers and understanding their strategies, and then working with them in a collaborative way, both from a product innovation and a process innovation, we could then align our expertise and further enhance that knowledge. On plastics, aluminium, steel, whatever material, we've got to get closer hence the reason why we spend 8% of our turnover on R&D. Trying to work in much more collaboration with our customers and use our customers to drive their driving the change, and then we're driving the engineer's solution to achieve that."

Even where they were more proactively, sustainability, focused there was also importance placed on reducing costs: -

"For (process) innovation we've also had support from the Welsh Government, where a team came in to look, and we recruited a production manager who introduced digital manufacturing techniques (upgrading us from analogue to digital) with much greater use of online tools which is more efficient and (doubled)increased our production ability. In terms of innovation the challenge has been finding suppliers. In components and (the final product) we look at the failures in the industry and look to improve by making the (product) lighter, production more efficient, and the product more suitable for customers. For example, we managed to (reduce materials used in one part of the product), which has made a mega improvement in sustainability, making the product lighter and cheaper and production more efficient. We've also tried 25% recycled aluminium, which has proved to be stronger than newly made, meaning we can reduce the amount of material used, also making it cheaper".



The lack of customer investment in the latest innovations was also seen as a hindrance by some.

"There was a piece of machinery that we repaired where the manual we used was 50 years old, as they didn't want to have to replace a multimillion-pound piece of kit because of a small repair issue. We've even had some companies asking for our equipment to put in their museum! This is part of a broader issue in UK industry, that capital replacement isn't as quick as it should be. In terms of our innovation, we have 2 engineers that develop test rigs, to simulate for parts and systems. Last year we spent £125,000 on R&D on test rigs. The innovation is all internal. We did have talks with (a) University a few years ago, but they wanted to create a new machine not create a system for testing that machine. We would love to work with an academic institution on our testing rigs, because our business is keeping things going".

Access to finance for innovation was an issue for a number of businesses:

"In terms of innovation, finances dictate what we are able to do. This is under constant review, asking ourselves what we want to do, what products can't we do, etc. So, if we buy a certain type of printer to generate more customers, we need to look at our structures and problems in the supply chain before trying to get a commercial customer, who might like our processes but then tells us we are still too dear, which means we then need to adjust the process to reduce costs and use the machinery. We've also brought in a new (production) line, but only because we knew we needed it as we needed to replace old one due to the person running (and repairing it) being close to retirement, which made us vulnerable."



There were also perceptions for some that because of Brexit funding that could have gone to SMEs was going to larger businesses and universities to compensate for lost EU funding.

"In terms of innovation, there is a need for (relatively small amounts of) money, but the grants process is very complicated, time consuming and arduous. It's often judged by people who don't know the industry, and I get an impression that money has already been already allocated. Large companies get the vast majority of government money because of Brexit, to keep them in the UK, or it goes to universities to cover the funding lost because of Brexit, meaning that small companies lose out."



## **Policy Recommendations**

- UK Government, Welsh Government and support and funding bodies should explore more creative use of funding to support innovation. 'Funding for testing' would be useful for ensuring very expensive machinery is able to be exploited properly.
- They should also develop a policy requiring HE access for innovation funds be linked with requirements for collaboration with SMEs in Wales. This would help to address the issue of a reduced funding pot as well as foster better linkages between the sectors.
- There would also need to be a parallel need to develop links both higher up supply chains, in terms of machinery and training through larger businesses alongside the innovation funds through HR, looking to develop the entrepreneurial ecosystem as a whole toward innovation.



## **Automation**

In August 2023 FSB published a report 'The Tech Tonic' on innovation and small businesses including a comprehensive survey of SMEs on the issue. The report included several recommendations on tackling barriers and incentives for improving manufacturing processes.

Half (50%) of small businesses who adopted new and/or significantly improved processes in the last three years say that one of their main reasons for doing so was to automate processes. Automation cannot be applied to all processes but where it can be, additional support could help small businesses to automate and be more productive.

For the small businesses which feel they can automate certain processes, the main barriers faced are a high initial cost (19%), uncertainty of return (14%), and a lack of external finance (9%). This varies by sector. In manufacturing, 36 per cent of small businesses said that the high initial cost of automation was a barrier, and 21 per cent cited uncertainty of return.

## **Policy Recommendation**

 The UK Government Department for Business and Trade should develop an Automation Fund, providing small businesses with grant funding to automate processes where access to labour is challenging. This could be targeted towards specific sectors To ensure that small businesses are also training and developing their staff, as a prerequisite to eligibility, firms should have a training plan in place.



## **Support for Industrial Energy Transformation**

The Industrial Energy Transformation Fund (IETF) is currently only available for energy intensive firms spending £100,000 or more on energy efficiency or decarbonisation projects. It is also available for feasibility studies that cost over £30,000 or engineering studies that cost over £50,000. The current focus on large firms is misplaced and this fund should be opened up so that small businesses can apply. Small businesses who made changes to manufacturing processes in the past three years, on average report the cost at £36,495. Only 11 per cent of small businesses state the cost exceeded £100,000 and only one third (33%) state it exceeded £25,000.

## **Policy Recommendation**

 The UK Government Department for Energy and Security should decrease the eligibility thresholds for firms to be eligible to apply for Industrial Energy Transformation Fund (IETF). The current threshold for energy efficiency and decarbonisation projects should be reduced from £100,000 to £20,000. The Department should also consider lowering the minimum engineering and feasibility studies thresholds.

## Finance: Cash Flow Issues, Internal Funding and Risk Averse Banks

# Table: Key resources of finance, deficiencies faced, and future requirements to meet aims and objectives (Top 3)

Issues: Innovation	Number of Firms	Number of Stakeholders
Finance for renewing old equipment		= 2
Not in a position to increase debt	1	= 2
Increasing interest rates on existing debt / lack of		= 2
funds because of increasing costs		
Being forced to look to crowd or joint venture to		
finance growth		
Lack of cash flow	= 2	= 1
Finance not an issue because firms growing		= 1
cautiously (+ need for longer term contracts) or		
have great ideas and no money		
Difficulties obtaining grant finance (e.g., because	= 2	
of Brexit induced cross subsidisation of larger		
businesses)		



This could also be seen in terms of the discussion over finance, where there was a general lack of importance placed on external finance, partly because the current environment had created a cash flow issue for many firms and a bricolage focus on only using internal funding,

## "We are not in a position to further increase debt. Instead, we have focused on product lines that are profitable, so we can invest those profits back into the business."

There was also perceived risk aversion from banks which led firms that were seeking external finance to look at alternative sources.

"In terms of access to cash, I have to say the banking fraternity have not been very supportive. They are risk averse and became more risk averse post-Brexit and Covid. They talk about supporting green businesses... but I'd say they have short arms and deep pockets. We've got about 2,000 customers in about 50 countries, huge potential. But unlocking this means some of the things we want to do just needs us to borrow a bit of cash. The Welsh Development Bank of Wales are a bit more supportive, but the main banking support that we have, our main clearing bank, are not very supportive at all. This is the common theme. If we all want to become a sustainable, they look to us and our shareholders to fund it. We've tried crowdfunding (pulled because of one aspect) and might look at this again, or at a collaborator through a Joint Venture or partnership. We've been self-financed up to this stage, but now we have to consider the options- is it better to give up something to the crowd or have a Joint Venture in return for cash and experience which means we give up more, but which opens the door for us. So far, we've done things slowly, but now we want to do things quicker."

The difficulty of SMEs obtaining grant finance because of competition from larger organisations and / or the costs of bidding were also mentioned: -

"It is frustrating that (a named University), which is grants focused and seems to get lots of money for things that will never work, is consuming taxpayers' money, whilst relatively small amounts of money would make



a huge difference to nearer to market innovations such as ours. £100k would be a big boost for us but instead we see give £1m to Unis where it won't make a difference. In small businesses there is a horizontal staffing structure, where a small number of people cover the full breadth of activity and communicate with each other. This maximises the use of grant money in comparison with a larger company where there are more people who chop the roles up. The other frustration is the bureaucracy. The levelling up fund could give us £5k technically, but the time cost of filling in the paperwork is more than that, making it inaccessible to many SMEs."

- The funding for Development Bank of Wales (DBW) and Business Wales after 2025 remains uncertain. This funding and status should be secured to give greater certainty to SMEs and to signal a focus on long term SME development.
- Clear effort needs to be made by British Business Bank in messaging and targeting its forthcoming £130 million Wales Investment Fund to the sector to support the growth and stability of smaller manufacturing businesses
- Welsh Government should also review the size of funds available where relatively small-medium amounts of funding are needed. There appears to be a funding gap between small pots (£5,000) and large pots (£1m). Breaking currently larger pots into smaller pots, and / or ensuring a proportion are set aside for SME funding would look to address a missing middle and help develop smaller firms to grow.





#### Infrastructure: Buildings, Land & ICT

Key resources of finance and infrastructure issues, deficiencies faced, and future requirements to meet aims and objectives.

Issues: Innovation	Number of Firms	Number of Stakeholders
Suitable land / space for expansion	= 1	= 2
Building costs	= 1	
Building regulations	= 3	
Lack of suitable energy infrastructure	= 3	
Lack of energy security	= 3	
Road infrastructure		= 2
Public transport infrastructure (including rail)		= 2
ICT infrastructure		1

The discussion of infrastructure also highlighted a degree of difference between SMEs and stakeholders which could again be seen in terms of the difference in timeframe focused upon. There was consensus around the lack of suitable buildings / land for expansion as of key relevance for both SMES and stakeholders. One quote that summarised the frustrations around this was: -

"Affordable space is key issue...There is a lack of affordable industrial space. Business Wales send us to Business in Focus BUT they have offices NOT industrial units. There is a shortage of industrial units. We need subsidised space to facilitate our growth so that in a couple of year we can afford to leave that space and the next (business) can move in. In Brecon we can get space for £3k per year plus VAT. Further south the same space costs



£10k plus VAT. We have children in school, and my business partner lives in the next village, and we don't want to move. If we have to, we'll move the business, but our business mentors have told us many times, the business works needs to work for you not the other way around".

SMEs also emphasised other building issues,

"If we achieve our growth target, we will run out of space. We have land next to the existing factory to build on BUT the cost of building is prohibitive and Welsh building requirements are higher than in England, where there are lower building costs because of the differences in regulations".

Concerns over the availability of energy were relevant to others.

"Costs are currently a key issue. Energy in particular is costing £1m a year more than last year."

AND

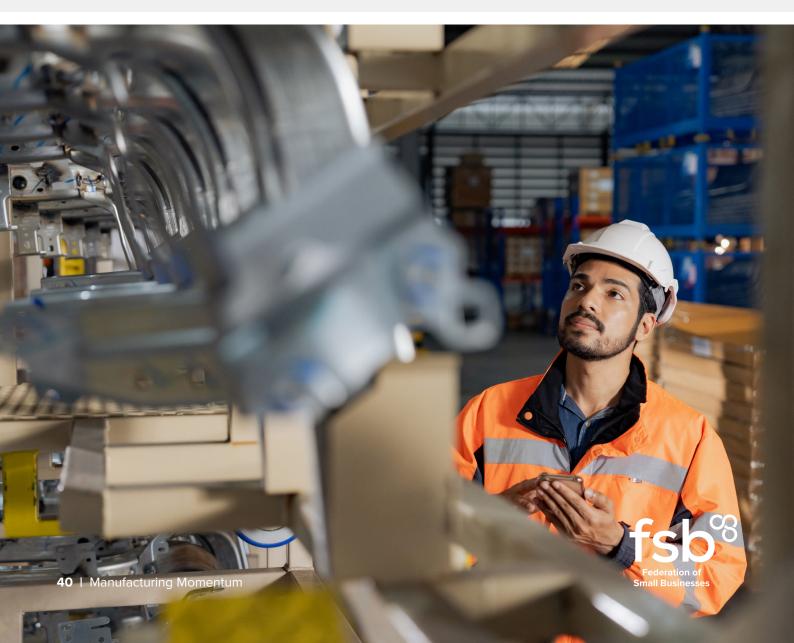
"It's not cost effective or expedient for individual units on the estate to invest in an energy infrastructure."

For the stakeholders, broader transport, including public transport, and ICT infrastructure were more strongly focused upon: -

"In terms of infrastructure we are moving to a cloud-based IT system from a server, which may have unintended consequences for SMEs. In terms of the broader infrastructure issues, the road links between north, south, and mid Wales are clearly an issue, so those on or near the M4 corridor are advantaged for distribution and logistics. This is a highlighted long-term issue, as is the rail network and getting the workforce to work is another obvious issue, so there are steps in the right direction (e.g., metro helping get people to work)"



- Welsh Government should develop a searchable property, premises, and land atlas database, with which businesses could identify and be matched with suitable property, premises, and land. This should include information around appropriate uses of property, as well as size, and possibly estimates of cost for any conversion of usage.
- Welsh Government should further develop levers and potential for future vacant land tax assessment for rationalising planning regulations
- Welsh Government should provide short term tax reliefs to small businesses intending to move into larger buildings and hire new staff and look at further powers for reliefs for improvements to premises and machinery over longer timescales as appropriate in order to aid the transition to net-zero.
- Enabling legislation to allow pooling and sharing via a cooperative for energy, owners and tenants, in a Ynni Ogwen-type approach for SMEs to work collectively, facilitated by key building / site managers.



#### **Sustainability: The Need for Support & Lack of Control**

Issues: Innovation	Number of Firms	Number of Stakeholders
Sustainability driven by customers / suppliers from		= 1
outside firm's control including abroad		
Local Partnerships / networks for recycling and		= 1
knowledge sharing		
Government action inadequate (e.g., feed in tariffs,	2	3
energy infrastructure, difficulties working with public		
sector)		
Sustainability as heart of business model and USP	3	
Firms have good knowledge of the issues and are	1	
supportive		

Table: Issues, problems, opportunities, and actions with regards to sustainability and circularity (Top 3)

Finally, regarding sustainability and circularity, whilst stakeholders had placed more emphasis on this, there was consensus with SMEs (who also understood and were supportive of the sustainability agenda) over the need for government action to remove barriers to SME take-up in this area.

"We've just had a carbon footprint assessment done, but there is now a big "so what" question, and a worry that this is consultants "jumping on the bandwagon", being paid to make assessments and give us reports we cannot do anything with. Net zero is a global issue, which will be more disruptive than the pandemic and take longer BUT if the consequences are as devastating as predicted then governments globally are not doing enough. The company is restricted in what it can do because we source products globally. Our people have to drive to work."

Several firms put sustainability at the heart of their business models and believed it to be a USP of the business itself. There was also recognition, however, that the agenda was often driven by the wider supply chain, including that outside the UK, and that SMEs were often reliant on sustainability activities of outside organisations to fulfil their sustainability and circularity requirements.

"We're trying to do the right thing, but we are reliant on others. The system needs to be efficient and incentivised financially to reduce problems. It's a good idea and it should be worth it BUT the real world means cost is so important."



SMEs and stakeholders also highlighted, several disparate barriers to their activities, including cost.

"We are always looking at sustainability and being greener. Because we work in metal that is recyclable, we don't need to do much extra. We wanted solar panels, but our roofs weren't designed to take panels and the quote of £480k even with a 7.5-year payback didn't include other hidden costs. We are now looking again and trying to conserve energy, keeping machines off when we can, but green energy sources are still much more expensive than traditional and given that the energy bill has more than doubled, we can't consider this."

There is a consensus around the current inadequacy of government activity, where issues over Feed -in Tariffs, energy infrastructure and difficulties working with the public sectors, meant that there was frustration that opportunities that were identified could not be exploited.

"Our energy use is already low, and whilst we could put solar PV in tomorrow, the fact that the feed in tariff is 6p and we are charged 45 p per kwh means UK government is giving the wrong message by allowing the energy companies to do this and by stopping incentives."

Stakeholders saw potential solutions not only in better government action but also in the development of local partnerships and networks for recycling and knowledge sharing.

"The major challenge for SMEs is the costs of sustainability. Recycled goods tend to be more expensive, there is an infrastructure required for net zero, which needs to be considered, and solar panels require capital investment. Our organisation is in transition to net zero, and has solar panels, but the issue for SMEs is how they start this journey, as there will be a long lead time unless they have knowledge of renewable energy, plus investment in infrastructure. An SME won't emit the same as a global manufacturer, but they still need to understand the cost impact. Change management is also an issue here, as there are implications for processes and procedures, indirect costs (often longer lead time), and people management issues which are potentially massive, as culture change takes time, and there is a need to explain why change is required, especially if what they have been doing has been successful. The UK and Welsh governments are key to helping



SMEs meet targets, it's "cash plus knowledge sharing, community groups and large firm-SME sessions. They should look to those already on the journey (potentially learning circles), and there may be a need to incentivise those with the knowledge to share it, by using government frameworks to leverage this. For example, larger organisations bidding might need to deliver knowledge sharing to manufacturing SMEs."

- Welsh Government needs to move quickly to assess the future infrastructure needed for circular economy opportunities and how they will deliver them, including
  - New waste management hubs,
  - Matching materials to sectoral needs.
  - Opportunities to spin off business capacity and capabilities building to provide services in Wales.
- Business Wales and support bodies to continue developing sustainability support, advice, finance and support, and ensure support capacity matches Welsh Government aims and needs. Identify how to best deliver this (e.g., local hubs housing expertise)
- Welsh Government to use all schemes (such as DBW sustainability loans) to upskill areas that have touchpoints with businesses (e.g., accountants) and/or build capacity for sustainability advice and green audits.
- Build education, skills and training skills system to align with and support the above
- Mainstream HR style support for small businesses through roll out of programmes such as You and Co2
- Welsh Government to ensure Social Partnership and Procurement Act is used to cascade the support to lower down chains and smaller firms, and data to be made available for scrutiny through Senedd Committees
- UK Government and Welsh Government should work together to assess and act upon specific Welsh innovation and R&D points of opportunity to stimulate demand for and supply of circular economy and net zero opportunities. Example include opportunities offered by tidal lagoon / barrage electricity generation.



### Chapter 3

# The Big Picture: Welsh Manufacturing SMEs in the Context of the Welsh Economy

The most recent UK Competitiveness Index (2021)<sup>viii</sup> indicates that Wales in general, and its constituent city regions continue to languish in the lower reaches of the tables with little sign of relative improvement in recent years. Encouragingly, in terms of the employment and poverty rates, Wales has been performing better than previously. In terms of Gross Disposable Household income, primary income from work, and total household wealth, however, the situation has worsened in the last 20 years<sup>ix</sup>. It is important, therefore, to consider the evidence from the interviews against the Welsh economy and Welsh manufacturing more broadly, in order to identify those areas to prioritise for government intervention.

Data from prior to 2010<sup>×</sup> also identifies that SMEs in Wales are often almost entirely focused on current competition and day-to-day firefighting so this is not a new problem. This prevents them from undertaking effective strategic planning and / or networking to achieve growth and innovation. In Southeast Wales this survey also showed that the type of networking and information sought by SMEs are often not those most associated with innovation and growth. Their networking activities were more general, and most respondents did not associate networking with the longer-term objectives and knowledge acquisition more associated with growth.

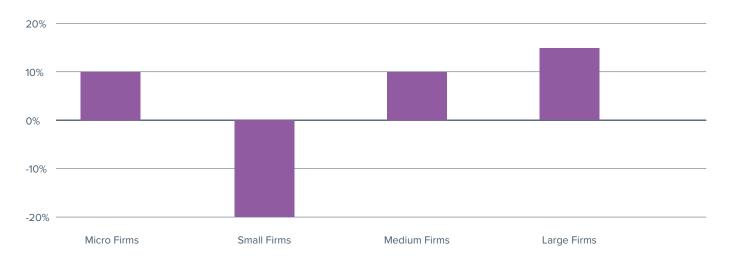
All this illustrates that there is a gap that can be filled by a clear strategy aimed, first, at making headroom for SMEs, and then providing the targeted interventions to provide for longer-term strategic planning and networking and information that can build innovation and growth.

#### The Structure of Welsh Manufacturing

Whilst Welsh manufacturing clearly faces challenges and problems, it also displays remarkable resilience which emphasises the importance of policies to support this vital sector. Total employment (excluding self-employed) in 2021 in manufacturing was 137,400 (10.29%)<sup>xi</sup>. Indeed<sup>xii</sup> this is 5.6% higher than in 2010 in terms of total numbers of employees (130, 100), albeit very slightly lower as a proportion of total employment (10.33%).



Welsh manufacturing has also a modest (5%) rise in the total number of Welsh enterprises. This, however, has been unevenly distributed.



The strongest rise occurred in large firms (over 15%) whilst micro and medium sized firms increased by nearly 10% each, but small firms (10-49 employees) saw a reduction of nearly 20% over the years 2010-22. These broad overall trends were also found not to have been an obvious consequence of either Brexit (post 2016 period) or Covid (post 2019) where encouragingly, resilience (even some growth in numbers), stagnation (no change) or very small reductions in the number of firms could be seen<sup>xiii</sup>.

This cannot be explained by small firms having grown into medium or large firms. Instead, this is likely representative of the vulnerability of the small firm sector in Wales, not sufficiently able to draw upon enough micro firms growing into small firms, and also likely affected by resource constraints that medium and larger firms do not have, and hence vulnerable to an economic environment that has been particularly volatile in the past few years.

Given that SMEs values and cost structures are often better adapted to small markets and lower profit margins, this suggests that small firms may have a potential, but untapped, potential for growth, that the current environment restricts.

Previous research<sup>xiv</sup> has also shown a similar share of medium sized firm in enterprise count, and higher contribution to employment and turnover, compared to the UK average. In comparison to the UK and other devolved administrations, there is no 'missing middle' in terms of the proportion of medium-sized firms in the business count in Wales. An alternative viewpoint using the same data, however, is that Wales DOES have a missing middle BUT it is not significantly disproportionate to the broader "missing private sector" issue, given that Wales proportionately has a greater reliance on the public sector and consequently a smaller relative private sector.

In some ways this definition is less important than the underpinning argument on building a sustainable SME economy, grounded in our communities. The focus should be on helping the self-employed scale into micro-firms, micro-firms to scale into small firms and small firms to move from 15 employees to 25 and then towards 50, as a way to better "pump-prime" the medium sized firm sector. Given the need to develop stronger Welsh supply chains for existing businesses, identified by the interviews, this also suggests there is real opportunity here for locally embedded growth, which would also support agendas such as those around the circular economy.



There is also a clear need here give that the proportion of Welsh GVA from manufacturing declined from 16.9% to 16.1% between 2010 and 2020. Changes in the structure of Welsh manufacturing, largely taking place at the SME level, have not arrested the long-term decline in the direct importance of manufacturing to the Welsh economy in terms of value-added. Partly this is likely to be related to the way the modest increase in the number of manufacturing enterprises is distributed, particularly the reduction in small manufacturing enterprises constituting a "missing middle" with the SME sector itself. Another key element, however, is the impact of the sub-sectors of Welsh manufacturing on the wider economy, via their multiplier effects, which also ties into issues around the Welsh supply chain discussed in the interviews.

#### The Multiplier Effects of Welsh Manufacturing

It is important to understand how manufacturing in Wales impacts on the economy, through its own consumption of goods and services in supply chain relationships but also the wages it generates for its employees that are subsequently spent in the Welsh economy, not least because manufacturing has a potentially greater impact on the economy through its supply chain effects.

The interviews match the secondary data analysis around multipliers to support the view that Wales is getting "less bang" for each £ of GVA growth, creating ripples rather than waves in the wider economy. Summarising the discussion below, the manufacturing sectors Wales is more concentrated in have weaker local supply chains and less consumption of local products (both goods and services). Consequently, this means Wales has lower employment and GVA multipliers than it would otherwise have.

This can be seen as part of the long-term supply chain and consumption problems of the Welsh economy more widely<sup>xv</sup>. A comparison with Scottish data for the period 2015-21, for example, shows that in relation to employment in manufacturing sectors, Scotland has a positive relationship with output, employment and GVA multipliers, whilst for Wales it is negative, albeit slightly improving between 2015 and 2021.

If we just look at the impact of the differences in Wales and Scotland's manufacturing sectoral structure (by using the Scottish multipliers for both) we see both that Wales's correlations become positive and not too dissimilar from that of Scotland. This again supports the need to build stronger and more resilient Welsh supply chains linked to already successful Welsh businesses.

#### Relationships between Sectoral Employment and Multipliers in Welsh Manufacturing

Relationships	<b>Correlations Values</b>
Employment by sector with Change in GVA Contribution	-0.330023784
Employment by sector with GVA multiplier	-0.280209236
Employment by sector with Employment Multiplier	-0.330405375
Employment by sector with Output Multiplier	0.133057645

Looking at the employment in each sector against the GVA, employment and output multipliers (from the latest Welsh Input Output tables) a broader structural problem in Welsh manufacturing is emphasised in terms of the GVA and Employment multipliers (though not the output multiplier).



There is a small positive correlation between the size of employment in a sector in Wales and the value of the output multiplier (i.e., sectors with more employment have higher output multipliers). There are, however, stronger negative relationships with the GVA and employment multipliers (i.e., the sectors with more employment have lower GVA and employment multipliers) suggesting that they have weaker consumption and supplier effects than sectors employing fewer people. This means Wales is not getting the wider economic benefits from this that it should, and this could be addressed through building stronger and more resilient Welsh supply chains linked to already successful Welsh businesses.

Relationships	<b>Correlations Values</b>
Change in Number of firms in sector with Change in GVA Contribution	-0.010211872
Change in Number of Firms in sector with GVA Multiplier	-0.352711734
Change in Number of Firms in sector with Employment Multiplier	-0.424320649
Change in Number of Firms in sector with Output Multiplier	0.250659994
GVA multiplier with output multiplier	-0.545376923
GVA multiplier with employment multiplier	0.889900093
Employment with output multiplier	-0.765167549

If we look at the dynamic nature of this via the relationship between the overall number of firms over time, GVA changes, and the GVA, employment and output multipliers (from the latest Welsh Input Output tables), an equally concerning picture is shown.

Specifically, there is a strong negative correlation between the structural changes in Welsh manufacturing (as represented by changes in numbers of firms in each sector) and GVA and employment multipliers. Growth has occurred in sectors with lower multiplier and vice versa, whilst, because of the negative relationship between GVA and employment multipliers with the output multiplier, there is a weaker, but positive relationship between the changes in the number of firms in each sector and the output multiplier (i.e., growth has occurred in sectors with higher output multipliers and vice versa).



#### **Peripherality and Welsh Manufacturing**

Welsh manufacturers also suffer from the relative peripherality of the Welsh economy. This makes it more difficult to access the major sources of UK finance (including business angels<sup>xvi</sup>-) which tend to be concentrated in the South-East of England. This can also mean Welsh SMEs face greater difficulties accessing the financing they need to grow and invest in new technologies and processes.

Consequently, the ability of Welsh SMEs to access sources of finance tend to be more limited compared to larger, often multinational (or at least multi-UK location) producers in Wales. The Welsh Government has sought to alleviate this, providing access to finance through initiatives such as the Wales Angel Co-Investment Fund and the Development Bank of Wales, providing equity and loan finance to small businesses. Wales, however, continues to be locked into a relatively low equity equilibrium in comparison with the UK as a whole<sup>xvii</sup>, leaving them less able to effectively compete with larger manufacturers and expand their operations. Whilst the DBW loans have been <u>successful</u>, and so show a market failure that private finance should be made aware of and fill, there is obviously also a danger of over dependence on the DBW, which become less viable in the longer term as their resources are not enough to address the issue.

Another area, which can be linked to issues of perceived peripherality, concerns the historical difficulty faced by Welsh SMEs in accessing public procurement markets. This is compounded by nearly half of Wales's own public procurement spend still being with organisations outside Wales<sup>xviii</sup>. This shows an area with significant scope for growth as a market for Wales's manufacturing SMEs, but also tensions and trade-offs for public procurement regimes when dealing with the increasingly prominent issue of community benefit in the Welsh procurement environment<sup>xix</sup>, linking back again to the needs to develop the Welsh supply chain, particularly through innovation.

Welsh manufacturers have also historically been impacted by relatively poor infrastructure. This includes, but is not limited to, transport links, which tend to focus on connecting Wales up with the broader UK economy rather than within Wales itself. Access to broadband infrastructure, which can limit their ability to connect with customers and suppliers and adopt new technologies, has also been perceived as a particular problem in the past, leading to an extensive Welsh government-led programme of superfast broadband roll out<sup>xx</sup>.

Whilst improving the position significantly in terms of access, persistent problems still exist for some harder-toreach rural SMEs. While many SMEs can now make use of more 'foundational' digital technologies, there is an increasing challenge in using more advanced technologies, making it more difficult for them to make best use of the infrastructure they do have. Simultaneously, while faster high-speed fibre-based connections are needed for new cloud computing applications and data transfer, Wales lags in terms of the availability of such connections. This clearly affects the ability of Wales to take advantage of advances in <u>cloud based Agri-innovation</u>, but also has impacts on manufacturing.





#### The International Economic Context for Welsh Manufacturing

On top of all this, the UK's exit from the European Union has created significant uncertainty for Welsh manufacturers. This is particularly with regards to trade with the EU, which manufacturing in Wales has been relatively reliant upon<sup>xxi</sup>, for exports, imports, and access to talent. This can make it difficult for Welsh manufacturers to plan and take advantage of new opportunities.

Welsh manufacturers also face significant competition from low-cost economies, such as China and India, which can offer lower-priced goods and services, as well as the USA. The Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) countries is also an area where a post-Brexit trade deal has been prioritised<sup>xxii</sup>. This will likely make it even more difficult for Welsh manufacturers to compete on price and maintain market share on this basis.

- Overall, these challenges highlight both the need for Welsh manufacturers to continue to invest in skills, technology, and innovation, to remain competitive and overcome the challenges facing the sector, but also key problems in doing so, with a reinforcement of the need to build Welsh supply chains, but also financing alternatives.
- There is a reinforced need for the UK Government to work to open key markets in the EU to allow more frictionless access to both supplies and consumers.



## Chapter 4

# Conclusion: Making Space for SME Manufacturers to Grow Long-Term

"Because we were very efficient, we feel a downturn more quickly. The longer you have been in business the more you get disheartened when things don't turn around. In between the "great" time periods there have been big setbacks, but it's become tiresome because the setbacks have become relentless. Covid, then our supplier issues, then the energy price hikes and now interest rate hikes which are simultaneously increasing our mortgage payments and causing customers to hold back their orders. It's reached the stage where the mindset is if there is another knock-back, we won't be able to take it. Any increase in the minimum wage next April will cripple manufacturing like ours. And then we get HR people calling us asking what are you doing for your employees. I'm asking, "what about management"?"

It is a tough time for small firms, with an economic storm meaning businesses must have their face to the onslaught, and dealing with 'everything, everywhere, all at once'. This has the effect of necessarily narrowing the focus on firefighting, making long term focus and understanding the wider landscape difficult for firms to take into account.



This is also in the long-running context of a decline in the proportion of micro firms within manufacturing. The growth in medium firms does not appear to be result of endogenous small firm growth. So, the ground has been treacherous for some time ahead of the current shocks. On the other hand, this does point to a cohort of small firms with growth aspirations who given the time and headspace provide a potentially untapped force for growth in Wales. As such a focus on opening up time and space for SMEs can help provide space to build capacity and capabilities to take advantage of opportunities in the future.

Similarly, the difficulties in identifying and overcoming potential gaps in supply chains requires intelligence gathering and mapping, as well as providing SMEs with easy access to that intelligence and data of relevance to their immediate needs. Providing this matchmaking service would also allow gaps to be identified for supplier development and building network capacity to provide stronger supply chains. The Social Partnership and Procurement Act needs to be proven practice to help SMEs by ensuring stronger foundation in their supply chains, and not a squeezed cost middle from buyers from top-down, and from suppliers from the bottom-up.

In turn building these over the long term could address the multiplier effect gaps as manufacturing investment has less impact than seen in Scotland. Again – this gap indicates an area for Welsh Government to steer with clear economic strategy and a focus that understands the need for providing time and space for SME manufacturers.

Such a framework aligning long-term and short-term needs, the priorities of firms and government stakeholders, and ensuring that we look at processes that better understands the needs of SMEs and provides them time space. Making room for SME manufacturers in Wales can be a keystone for long term sustainable economic development and can provide the opportunity for a virtuous cycle of quality jobs, skills and innovation, and addressing Wales's longstanding economic problems.

It is time to develop the agenda to make time and space for Welsh manufacturing to flourish.



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x<sup>iii</sup> Covid could be seen to have affected specific sectors and firm sizes, specifically food (small and medium producers detrimentally but not micro firms who grew strongly) and drink (positive growth in micro and small firms), clothing (micro firms positively), wood (for micro firms), printing (negatively), chemicals (micro firms positively), metals (negatively), vehicles (micro firms positively but medium firms negatively), transport (negatively, particularly micro firms), and other manufacturing (negatively, particularly for micro firms)

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