Rialtas na hÉireann
Government of Ireland

Focus on Engineered Products & Sub-Supply

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Prepared by the Department of Business, Enterprise and Innovation

Engineered Products & Sub-Supply

Description

Engineered products and sub-supply includes a broad range of manufacturing, engineering and supply chain activities that serve a broad range of markets, including: Automotive, Aerospace, ICT, Medical Technologies, Plastics, Energy & Environmental, Construction and Agriculture Machinery and Equipment). Engineering (as a discipline) is crucial to all manufacturing sectors. International growth in these markets drives growth in the engineering firms serving those markets. Sub-supply also includes paper and printing as well as basic and fabricated metals and polymers.

Snapshot

	Exports (2018) [i]	% of national exports [ii]	5-year CAGR of exports (2013-2018)	Employment (2019) [iii]	% of national employment [iv]	5 -year CAGR of employment	Direct Economic Expenditure[v]
All Agency	€8.8bn	3.6%	9.2%	48,596	2.0%	3.2%	€4.4bn
Irish owned Enterprises	€2.5bn	1.0%	7.8%	31,541	1.3%	3.4%	€2.8bn
Foreign owned enterprises	€6.3bn	2.6%	9.8%	17,055	0.7%	3.0%	€1.6bn

i. ABSEI 2018, DBEI (Engineered products and Sub-supply data set contains the following sectors: 'Paper and printing'; 'Rubber and plastics'; 'Basic and fabricated metal products';
ii. percentage of national exports is derives using total exports from ABSEI 2018
iii. AES 2019, DBEI (Engineered Products and Sub-supply data set contains the following sectors 'Paper and printing'; 'Rubber and plastics'; 'Basic and fabricated metal products'; 'machinery and equipment'; 'transport equipment')
iv. National percentages derived using CSO, LFS Q4 2019 figure of 2,361,200
v. Direct Economy Expenditure relates to total payroll costs, materials and services sourced from Irish suppliers

Pre-COVID-19 Position

Technology and the drive towards sustainable development are fundamentally changing manufacturing and engineered products globally.

- Many countries have been planning or implementing national strategies for industry 4.0 with potential for new business models and opportunities for industry: better connection with the customer; suppliers and the external ecosystem.
- Concurrently, the on-going drive towards sustainable development, carbon-neutral manufacturing, and transition to a circular economy was driving changes in product and process design with potential for innovation and productivity gain.
- Product, process and materials R&D, developing the capabilities of existing materials and/or developing novel "next generation" materials, and advances in additive manufacturing is transforming processes and new product development.
- There is a broad range of manufacturing and engineering companies, in terms of size, scale, and product, across both Irish and foreign owned firms, based throughout the regions in Ireland.[1]
- Industry 4.0, which is technology and knowledge driven will see a scaler increase in the use of automation & robotics for flexible production, utilisation of new innovative materials and production processes, utilise data analytics for better process control and cost management. Skills competencies and knowledge development in these areas with proximity to manufacturing clusters are now key to winning new investment for Ireland.
- The impact of technology on the sustainability and operational efficiency of engineering and manufacturing operations in Ireland had become a key focus area. The vision outlined in Ireland's Industry 4.0 Strategy is for Ireland to be a competitive, innovation-driven manufacturing hub at the forefront of Industry 4.0 development and adoption by 2025.
- Engineering skills shortages continued to be a concern for companies with expertise in digitalisation, sustainability, communication and management had been identified as in-demand engineering skills over the coming years. In a post-COVID-19 environment, social distancing and infection management will require increased competencies in these areas for firms to remain operational and cost competitive against other global players. National and regional knowledge sharing and linkages (between foreign-owned MNEs, Irish indigenous enterprise and education and research institutions.) is a growing and important factor in industrial development and attraction of FDI across a number of sectors.
- Ireland's capabilities in Connected and Autonomous Automotive (CAV) and its related ecosystem has been expanding in recent years with significant new FDI and Irish investments in software platform development, photonic and lidar sensors, vehicle engineering supplementing existing automotive manufacturing activities in engine components, power and climate control systems, polymer and sealing materials, adhesives, vehicle interior trim and insulation materials. Other automotive FDI activities in Ireland now include automotive data management platform development, vehicle asset management and operational analytics as well as major global corporate management functions.

[1] Refer to individual Sector Briefs on Technology, Biopharmachem, Medical Devices, Agri-food & Beverages and Technology

- There are a number of firms engaged in manufacture and export of sophisticated engineered polymers and other advanced materials that are often crucial parts of medical devices, drug delivery solutions, environmental sustainability, automotive safety and energy generation. Ireland now has limited exposure to consumer-based polymers (consumer food) bar sub-supply for the Irish based infant formula products and PET products recycling (Wellman-Cavan).

Impact of COVID-19

GLOBAL

- Analysis done by Copenhagen Economics showed that Manufacturing at one point experienced a 26% reduction in activity within the EU. The ECB stated that there was a total initial economic loss of 40% in the manufacturing sector due to COVID-19 restrictions.[2]
- COVID-19 has had significant impacts on the Automotive industry with a sharp drop in demand and investment. Supply chains grounded to a halt and factories closed. It is estimated that factory closures in Europe and North America have caused 2.5 million passenger vehicles to be removed from production schedules, at a cost of US$77.7 billion in lost revenue for automotive and parts manufacturing companies.[3]
- Moody's, the credit rating agency, expects global vehicle sales to decline by 14% in 2020. The forecast is worse than the 2008-09 global financial crisis, which resulted in approximately an 8% decline in the car market over two years.
- In the EU, 1.1 million of a total 2.6 million direct automotive manufacturing jobs were affected by plant closures in March 2020. Over half of these were German workers.
- The Automotive industry is already facing significant disruption and displacement due to climate change and technological advances. Even before the pandemic, the production of new vehicles was stagnating due to weak sales. The shift to electric vehicles was expected to lead to the loss of 400,000 jobs in Germany alone.
- Most countries are continuing to extend support to manufacturing and related services industries with wage supports, low-cost finance or similar support enacted to retain employment.

NATIONAL

- Recent data releases indicate that the manufacturing sector has been adversely affected. Manufacturing PMI data showed the largest monthly fall in the history of the index in April with further contraction into May.[4]

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[2]ECB, Alternative scenarios for the impact of the COVID-19 pandemic on economic activity in the euro area, 1 May 2020; https://dbei.gov.ie/en/Publications/Economic-Considerations-for-Reinstating-Economic-Activity.html
[3] https://www.ilo.org/wcmsp5/groups/public/---ed_dialogue/---sector/documents/briefingnote/wcms_741343.pdf, 2020
[4] https://www.markiteconomics.com/Public/Release/PressReleases

- While the vast majority of manufacturing, engineering sectors and supply chains remained open as essential service providers during the crisis, significant components of the sector were impacted because of closures or reductions in capacity as a result of distancing requirements. Reduced demand has also had a significant impact on the sector. 37% of employment was reliant on PUP or TWSS at peak impact. Supply chain disruption has also impacted normal activity. Transport costs have increased.
- There has been a significant impact from demand and supply shocks caused by COVID-19 among clients in the IDA Engineering portfolio, who are vital employers outside Dublin. The impact is driven by temporary production halts at car manufacturing plants, which have had a knock-on impact on automotive sub suppliers operating in Ireland. It is too early to say what the longer-term impacts will be on an automotive sector that was already undergoing a transition.[5]
- IDA have seen substantial temporary lay-offs, particularly among client companies involved in the automotive sub-supply chain. the on-going global nature of the crisis means companies cannot forecast future demand and therefore employment needs with manufacturers requiring complete flexibility at a time when they also must redevelop production processes to cater for new HSA/HSE as well as corporate legal, insurance and health guidance.
- Enterprise Ireland reported that clients in the engineering sub-supply sector and prepared consumer food manufacturers that rely to a substantial extent on food service or hospitality outlets, were impacted by restrictions.
- Ibec also reported closures or greatly reduced capacity in the engineering and sub-supply sector resulting in major disruption to the internal market and supply-chains.[6]

Issues, Opportunities and Challenges for the Sector

- Given the export intensity of the Irish manufacturing sector (86% of total sales in the sector are exported), and of engineered products and sub-supply, the sector is very reliant on international trade-flows and functioning global supply chains. The sector is heavily dependent on recovery in EU and global markets as well as wider external economic and policy developments.
- There may also be a longer-term risk of countries seeking to repatriate their supply chains to avoid the risk of future pandemic related disruption. Maintaining competitiveness by ensuring the Irish cost base (employment costs, state and local taxes, water, energy, logistics, etc.) remain relative to regional and global competitors will be key to retaining employment and activity here.
- The sector is also highly dependent on both access to and supply of expertise to ensure critical functions and equipment are maintained. Inbound and outbound access to critical

[5] IDA Ireland
[6] Ibec Reboot & Reimagine, 2020

expertise must be ensured and taken into consideration as additional safety measures are put in place in the context of borders reopening internationally.

- Implementing Industry 4.0 and sustainability considerations are likely to become increasingly pertinent in addressing the significant challenges facing the global sector. A strong engineering base is fundamental in driving an innovation- led transformation. Ireland has an opportunity to position itself as a leader in business digitalisation through new technologies and strengthen the supply chain for many indigenous and multinational companies.