

Asia-Pacific companies

Australia pins its hopes on new wave of industrialisation

High-tech manufacturing emerges as solution to reduce nation's reliance on mining for exports



Carbon Revolution has developed the world's first single-piece carbon fibre wheel © Carbon Revolution

Jamie Smyth in Geelong JANUARY 4 2020

The closures of Ford, Toyota and GM Holden assembly over the past three years ended a century of carmaking in Australia and dealt a bitter blow to a nation seeking to reduce its dependence on digging natural resources out of the ground.

But Australia's manufacturing sector, already hollowed from a decade-long mining boom that caused the local currency to surge, has defied [predictions of a collapse](#).

Instead it is undergoing a nascent revival with the emergence of a new generation of homegrown high-tech advanced manufacturers targeting overseas markets such as the US and Europe for sales.

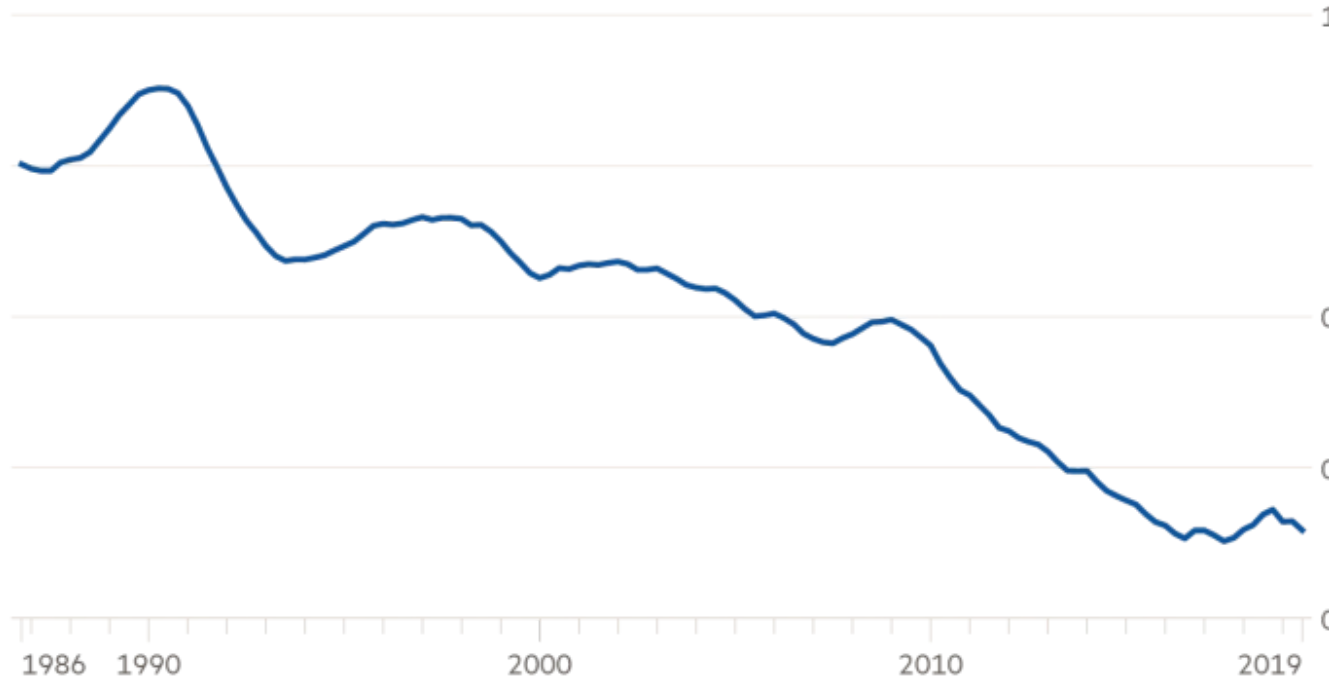
Jake Dingle is the chief executive and co-founder of Carbon Revolution, a high-tech manufacturer in Geelong, a seaside town near Melbourne that lost its Ford factory in 2016.

Carbon Revolution has developed the world's first single-piece carbon fibre wheel and won Ferrari, Ford and Renault as customers for a product that is 45 per cent lighter than standard aluminium alloy wheels.

"We have been told that we have at least a five-year advantage over the competition, based on the fact that no one else has actually started successfully manufacturing carbon fibre wheels at scale," Mr Dingle said.

Manufacturing in Australia has been in terminal decline

Million people



Source: Australian Bureau of Statistics

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Carbon Revolution trebled the size of its factory last year and Mr Dingle still aims to boost his workforce from 400 to 1,000 in response to strong demand from global carmakers.

The wheelmaker is one of a growing crop of advanced Australian manufacturers that are defying a long-term trend of falling employment in a sector that many analysts initially feared could lose as many as 200,000 jobs when local carmakers finally closed in 2017.

A government report published in September painted a rosier picture. Just 14,000 carmaker supply chain jobs have been lost since Ford, Toyota and GM shut their plants Down Under, and less than a quarter of the nation's 215 automobile suppliers have closed. Instead, automotive suppliers have diversified into new sectors, including clothes lines and medical devices, the report said.

This was often with the help of transition grants provided by federal and state governments through a A\$1bn automotive transition fund.

The resource sector dominates Australia's export trade, accounting for three-fifths of all outbound trade compared with just under 10 per cent for manufactured goods. But in terms of overall economic output, mining makes up 10 per cent of gross domestic product, compared with 6 per cent for manufacturing.

Canberra recently launched a A\$160m manufacturing modernisation fund that aims to help 350 companies to invest in new technology and develop higher-value products. R&D tax breaks are also

available for manufacturers.

Manufacturers are also benefiting from a 40 per cent depreciation of the Australian dollar since 2011, record-low interest rates and a A\$200bn government spending programme on defence, a portion of which must be spent locally.



Geelong-based Carbon Revolution has won Ferrari, Ford and Renault as customers for a product that is 45 per cent lighter than a standard aluminium alloy wheel © Carbon Revolution

Industry advocates hope this transition can lay the foundations for a new wave of industrialisation in Australia, which was recently ranked 93rd in the world, between Senegal and Pakistan, in terms of knowhow and industrial capabilities in Harvard's Atlas of Economic Complexity.

Australia's experience of dealing with the closure of its entire carmaking industry could also become a model for other developed economies, such as the US and Canada, which are coping with deindustrialisation, they say.

"One of the consequences of the collapse of the domestic car industry was that Australian suppliers have had to think hard about their future, adapt to changing circumstances and focus much more on export markets," said John Spoehr, director of the Australian Industrial Transformation Institute at Flinders University.

"The long lead times provided by carmakers before closures took effect and government assistance for workers and companies really helped the transition process, which holds valuable lessons for other countries undergoing similar types of industry-wide closures," he said.

Employment in manufacturing has steadily declined over the past 30 years, as lower-cost competition from Asian economies and free trade deals have removed [tariff protection](#) for locally produced products. But since falling from 1.1m in November 1984 to 856,000 in November 2015, employment in the sector has steadied at 855,300, according to official statistics.

"Australian manufacturing is not dead but it is changing and for the most part it is changing in a positive direction," said Roy Green, a board member at Australia's Innovative Manufacturing Cooperative Research Centre.

“There is a shift with companies undertaking more research, adopting more advanced manufacturing techniques and looking overseas for growth.”

There is plenty of complexity on display at Carbon Revolution’s assembly line at its Geelong factory, which is crammed with advanced robotics and first-in-the-world industrial processes used to manipulate the carbon fibre raw material that makes its wheels.

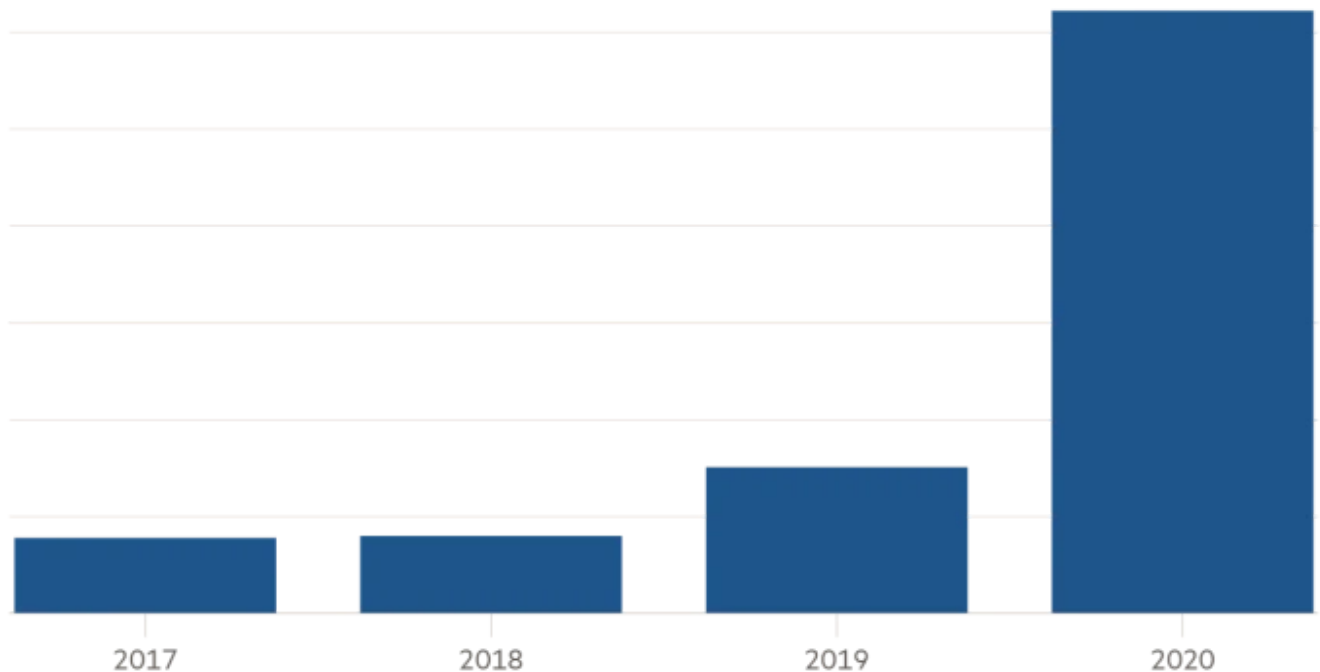
“We’ve broken new ground in automating the design, use and manufacturing process relating to carbon fibre,” said Mr Dingle, who sold his home to help finance the company in its early days. Carbon Revolution, which raised A\$90m in an initial public offering on the ASX on November 29, is scaling up rapidly and has benefited from the end of car making in Australia, which has made skills more readily available.

“We’ve brought in automotive workers from the shop floor, out of Ford, General Motors, Toyota into our manufacturing process,” said Mr Dingle. “We’ve also started to bring back Australians into senior leadership roles, who had moved from Holden or Ford to overseas carmakers such as Tesla and VinFast in Vietnam.”

Carbon Revolution recently poached Luke Preston, who established and built the general assembly manufacturing engineering team responsible for Tesla’s Model 3 in California.

Carbon Revolution's sales are set to surge

Revenues (A\$m)



Source: company
© FT

Other companies aiming to tap Australia’s auto-manufacturing talent pool include ACE Electric Vehicles Group, which is pursuing plans to build vans and utility vehicles in Adelaide. Industrialist

Sanjeev Gupta has teamed up with the UK's Gordon Murray Design to launch an electric car making venture in Australia.

Automotive suppliers Futuris and Toyoda Gosei in Adelaide closed their local operations, affecting several hundred jobs, but many others diversified into other sectors.

MH Group, a privately owned family company, sold its automotive division, including a factory in Thailand, and refocused around construction and property. In 2016 it acquired an architectural glassmaker and has expanded its existing plastics division to target medical, civil safety and construction.

Quickstep, a manufacturer of carbon fibre components, secured government funding to relocate its R&D function from Germany back to Geelong and to support the transition of engineers it recruited from the defunct auto sector. It has successfully targeted the lucrative defence sector by clinching a deal to supply components to the J35 Joint Strike Fighter.

“We are beginning to see a globally recognised cluster of advanced manufacturers in carbon fibre in Geelong, which are linked into Deakin University,” said Mark Burgess, managing director of Quickstep.

He added that Australian manufacturers needed to find their niche, be world-class and think globally to succeed. But he warned the transition was far from complete and faced challenges linked to a volatile currency in a market heavily focused on resources, high energy costs, lower levels of R&D spend than rival nations and a national brand that wasn't associated with industry or innovation.

“I too often see a deficit of self-belief that we can compete on the world stage, which is generally the opposite of our belief in our sporting ability,” he said. “This affects how others see us and holds us back from achieving our full potential.”

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