Manufacturing and its place in the value chain

Published in D!ssent number 43. Summer 2013/2014

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On an average working day around 10 000 Australians leave their jobs. Most of these separations are each workers' choice. People take other jobs, retire or take a planned break from employment. About a third are involuntary, resulting from retrenchment or the end of temporary employment. Over a year there are about 800 000 involuntary separations. Almost all involve hardship to the individuals and their families, and when there are mass redundancies, particularly in country towns, there are local knock-on effects.

This churn in the labour force is largely unnoticed. We focus on aggregate figures, particularly the unemployment rate, and so long as the number of people finding work matches the number losing work, we pay little attention to these movements.

That is, unless the job losses are in manufacturing.

Announced closures such as the Electrolux refrigerator plant (500 jobs in 2016) and Ford's car plant (1200 jobs in 2016) make headlines, generating claims that we are de-industrialising and losing important skills, and leading to calls for government interventions. Closure of a manufacturing plant is like a death in the family.

Why is it that we are so concerned about manufacturing? Are all manufacturing jobs 'good' jobs? What is so special about 'manufacturing' anyway? Perhaps the term 'manufacturing' had meaning in the past but is now only a statistical artefact. Is our thinking distracted by nostalgia about Aussie brands – Holden cars, Arnott's biscuits, Foster's beer? Is the idea that we must have a 'manufacturing' sector past its use-by date?

There was a time when manufacturing was the clear path to national prosperity. Those who ran the British Empire built their economic model around Britain as the manufacturing hub, drawing on the colonies for raw materials. The UK Iron Act of 1750, for example, was designed to suppress nascent industrialisation in the American colonies. As historians point out, the American Revolution was not just a tax revolt, it was also an assertion of the right to industrialise. This imperial economic model lasted almost 200 years, finally expiring when India won its struggle for independence. To Gandhi, India's status as a supplier of raw cotton to Britain for weaving and re-exporting to the world for a large profit not only symbolised national humiliation but also involved imperial exploitation, when the cloth and garments came back to India at prices hundreds of times the prices received for the raw materials.

That strategy paid off well for Britain. The second half of the nineteenth century kicked off with the Great Exhibition of 1851, a celebration of industrialisation, and for the next fifty years, until the rise of the USA around the end of the century, Britain was the world's largest and most prosperous economic power. In terms of GDP per capita it was pipped only by its Australian colonies, enjoying the windfalls of gold and wool booms.

In his economic history *Why Australia Prospered: The Shifting Sources of Economic Growth* (Princeton University Press 2012), Ian McLean of Adelaide University takes us through this period from an Australian perspective. Australia's luck ran out towards the end of the century, with a depression and a prolonged drought (the 'Federation Drought') of the 1890s. Around the turn of the century, while Australia's prosperity was faltering, another country with a colonial history, Argentina, was catching up and its GDP per capita had easily surpassed Spain's.

While most historians present Australia's economic conflicts around Federation in terms of 'free trade' vs 'protection', in his Chapter 'The Argentinian road not taken' McLean compares the political and institutional history of the two countries. Although both were 'settler economies', dependent on natural resources and the displacement of traditional owners, their political structures differed. Both countries had privileged classes benefiting from resource extraction, but in Argentina they had much more political power. He writes:

> If a wealthy elite emerges early, they will likely oppose the extension of the franchise, offer limited support for universal and publicly funded education, and secure an immigration program that suits their own labor requirements, thus reinforcing a skewed distribution of income and wealth in the community, and hence delaying the development of broad-based financial institutions such as a stock market.

While Argentina continued on its agricultural path, Australia's decision was to industrialise. McLean points out that it wasn't all plain sailing for Australia: the 1914-18 War with its deaths and war debts and the Great Depression imposed a great burden on the young country, but through centralised wage fixing and tariff protection we at least had the means of sharing what benefits were available.

Our next spurt of industrialisation came with the Pacific War, based on isolation and strategic necessity, and on its fit with the Curtin Government's vision of economic modernisation. Curtin would have identified with Kevin Rudd's statement that he didn't want to be Prime Minister "of a country that didn't make things anymore". Australia's response to that conflict was one of industrial mobilisation as much as it was of military mobilisation. We built ships, armaments and aircraft, and these were not mere assembly operations: McLean records that we built 3000 aircraft engines of three types, the height of industrial complexity at the time.

While the 1914-18 War had left us weakened, the Pacific War left us with a stronger economy. In the postwar era Australia was tooled up for further industrialisation. An iconic picture of the time is of Prime Minister Ben Chifley standing beside the first Holden to come off the assembly line of the Fisherman's bend works in 1948. It was an article of economic faith that no country could claim to be modern and prosperous unless it had its own car industry, which was, and perhaps still is, the accepted symbol of industrial sophistication.

The story of our car industry is taken up in Gideon Haigh's work *End of the Road* (Penguin 2013) a short but rich work, set in the context of the politics and policies around manufacturing.

The postwar era was one of rapid economic growth, in both absolute and per capita terms. It was as if half a century of pent-up demand and production capacity were suddenly unleashed.

Immigrants from a war-devastated Europe, many of whom were highly skilled, teemed to our shores, and manufacturing provided them with ideal workplaces.

In the postwar era there was bipartisan commitment to industrialisation. Although Labor's origins were in the woolsheds at the time of the 1891 shearers' strike, industrialisation had been a strong plank of the Labor Party from the outset. The very nature of manufacturing fitted with the Party's economic strategy. Factories were places of mass employment, easy to unionise, and manufacturing workers were sufficiently skilled so as not to be easily replaced with 'scab' labour. Industrialists could be brought on side with the understanding that, protected by tariffs and restrictions on competition, there was enough surplus to go around. The Menzies Government, elected in 1949, easily went along with Labor's strategy, and the Country Party (later renamed the National Party), which should have been in favour of free trade, saw a growing and prosperous Australian population as a surer market for primary produce than an international market constrained by agricultural trade barriers.

The 1950s are easily remembered for Movietone newsreels of Menzies opening car factories. General Motors, Ford, Chrysler (later Mitsubishi), Volkswagen, Renault, Rootes (a variety of UK brands), Toyota, Nissan and Leyland (remember the P76?) all had car factories in Australia at some time in the following years, some with high value-added, some with assembly operations, and all protected by elaborate mechanisms of tariff and import quota protection. While the car industry was at the pinnacle of manufacturing, behind the same tariff wall we also had a full range of consumer electrical and electronics industries, as well as labour-intensive clothing and footwear industries.

That economic model worked well – too well perhaps. As McLean says "the tendency to conflate industrial development with modern economic growth is unfortunate", for there were many other drivers of our prosperity, and the investment phase of industrialisation always brings short-term benefits, particularly political benefits, even if that industrialisation is going to result in long-term costs.

In the 1970s the model was showing stresses. By 1975 the factories which had been state-of-the art in 1955 were looking old and shabby. There had been inadequate re-investment, in part because it had been easier to go to the government for increased tariff protection (a strategy with strong labour-capital unity) than to deprive shareholders of dividends, and in part because it was difficult to achieve the scale economies to justify investment. In the early 1970s I was an engineer in a domestic appliance factory, and it was always difficult to justify investment in high-volume labour-saving machinery because we and our competitors were struggling in the same limited market. I remember a line of press shop workers, whose task, repeated 16 times a minute, was to take a blank sheet of metal from a bin, insert it into a press, operate the press with a foot pedal, remove the pressed lamination and place it another bin. In the press shop was a haze of marijuana smoke – only those who were zonked for eight hours a day could bear the tedium.

Government policy took several paths, well-described in Haigh's work. Thanks to the work of the Industries Assistance Commission (later to become the Productivity Commission), the costs of made-to-order tariff protection were becoming quantified and exposed. These costs fell on those least able to afford them in the form of expensive clothing, cars and appliances. Those few who travelled overseas saw the difference in price and quality between consumer goods in Australia and in other countries, returning with suitcases bulging with new clothing and as many duty-free electronic goodies as they were allowed (and usually a few more).

As Haigh points out, by the time the Hawke Government was elected in 1983, we were producing 13 models of cars in 15 factories. The Fraser Government had been aware of the problem of our uncompetitive manufacturing sector but it was too timid to reduce protection. For a time it was attracted to the idea of developing scale economies, particularly through development of export markets, this having been the emphasis in the 1975 Jackson Committee Report into manufacturing. That may have been technically feasible, but the path of our industrialisation had largely shut off this option, because most larger manufacturers were subsidiary operations of multinational firms which set restrictions ('franchise restrictions') on the markets our subsidiary firms could serve. In many industries our operations were restricted to manufacturing, while other, often more profitable, parts of the value chain were controlled by foreigners. Relying on foreign equity investment rather than mobilising domestic capital is an easy and quick path to industrialisation, but it has its costs.

Another policy response, fashionable in the early 1980s, was to encourage the development of new manufacturing industries through further processing of raw materials. Woodchips can be converted into pulp and on to newsprint. Four tonnes of bauxite and three tonnes of coal (to generate electricity) can become one tonne of processed aluminium. In the form of concessional electricity prices huge subsidies have been given to the aluminium industry. The shortcoming of such a policy is that a concentrated commodity is still a commodity, subject to intense price competition and low margins.

In the meantime, world events, particularly industrialisation in Asia, were overtaking us. Those operations which are intrinsically labour-intensive, such as footwear, clothing and light metal manufacturing, were moving to countries with low labour costs, and while Australia has always had some on the wacky right who advocate lower wages and some on the romantic left who advocate ever-increasing tariff protection, neither path was economically feasible. The Hawke Government wisely embarked on a process of reducing tariff protection. Unlike the last six years of Australian politics, the Coalition Opposition was largely supportive of policies to allow market forces take a stronger role in economic policy.

The other development to have crept up on us is in transport. Policymakers and industrialists used to talk about 'naturally-protected' industries, where bulk-to-value ratios or perishability dictate that production has to be local because of transport costs. Bread and beer were the textbook examples, but many other industries such as furniture relied on natural protection. The shipping container, a modest invention but a breathtaking innovation, has changed that assuredness. One container ship carries up to 20 times the freight of the tramp ships of pre-container days, with very much lower costs in the transfer of freight from ship to train or truck. There has been a similar expansion in air freight: the largest cargo plane, the Antonov 225, carries 20 times the freight of a DC4, the cargo workhorse of the 1950s.

Perhaps the greatest changes have been in the technologies of manufacturing, and in the relationship between people and machines. That same firm where I worked in the 1970s was up with the best in information technology, with an IBM 360 computer boasting 256 K of RAM and a core processor capable of handling 34 000 instructions a second! It was a huge machine, with eight people on a three shift operation to keep it and its peripheral card readers and tape machines running. Now we have machines, with hundreds of times its capacity, in our houses and pockets.

In that factory in the 1970s and in earlier eras, people were an adjunct to the machine. Now we are coming to regard the machine as an adjunct to people's capabilities. Computing is an extreme example of that changing relationship, but it is happening elsewhere on a less spectacular scale. The average home handyperson, for example, can buy machinery which would have been found only in a factory just a generation ago.

Scale economies, which from the days of Henry Ford ("any color so long as it's black") were the *sine qua non* of manufacturing, have given way to flexible production, supported by numerically-controlled machine tools, robotics and clever production control systems. Haigh, in his chapter on Holden's Elizabeth works, points out that each car is a bespoke product.

On the horizon, but looming fast, is 3D printing. The machines will come down in price, but the real value, where profits are to be made, will be in the designs of the items to be printed.

In some cases the physical product itself is disappearing. The sound recording and the book are the most common examples. The service, which is the real source of value, remains but the physical product which delivered that service can be bypassed.

So, at first sight, it may be inferred that manufacturing cannot survive in a country like Australia, particularly in an era when mineral exports are propping up our exchange rate.

Those who rely on statistics cite 'hard' statistical evidence about the decline of manufacturing. From a high point of about a quarter of GDP and employment in the 1960s the economic share of 'manufacturing', as statistically defined, is now about seven to eight percent of GDP and employment. But these figures have become increasingly meaningless – except, perhaps, to a union official worried about a declining membership base, or a lobbyist seeking special consideration for a particular industry.

For a start, many activities once done 'in house' by manufacturing firms are now contracted out. Activities such as payroll, transport, security and cleaning, although done in or for manufacturing establishments, may appear under other industry classifications. Also many activities, once unambiguously the preserve of 'manufacturing', have moved to other industries. For example kitchen and bathroom cupboards, once made in furniture factories, are now made in joinery shops and are classified to building trades.

'Manufacturing' itself – the processes of bending, milling, drilling, casting, sewing, cutting, welding, assembling and a host of other activities – is simply one part of the chain bringing value to customers. For the technological reasons outlined above, these processes have become much cheaper over the years. At the same time, processes, once considered peripheral to 'manufacturing', such as design, plant engineering, production control, logistics and pre- and post-sale customer service, have become the source of much more value-added.

Perhaps politicians, unionists, journalists, economists and statisticians should stop thinking about 'manufacturing' and draw on other classifications to guide their thinking. What people *do* within a business establishment is far more relevant to our economic wellbeing than what comes out the door. Do they spend eight hours a day smoking dope while operating a press, or are they fully-engaged in mind and body, making full use of their capabilities? Haigh's chapter on Holden's Elizabeth plant describes a workforce that clearly falls into the latter category but there are still jobs in other establishments that don't require full engagement.

In many cases the 'manufacturing' processes may be such a small part of the value chain that their costs are not a vital part of a product's competitiveness. For example, the value in high fashion clothing lies in design and response to customer demands. Even if the tasks of cutting and sewing are labour-intensive and could be done more cheaply offshore, there are reasons to keep these activities close to the customer. That is why it is absurd to make generalisations that a high-wage developed country can never support particular manufacturing industries, such as ‘clothing’, ‘footwear’ or ‘sports equipment’. They can thrive in a country like Australia, but not in the form of the mass-production industries we once knew.

Often there is a great deal of value-added in preparing a product for manufacture – including market research, product design, process design, prototype development, trial run and customer evaluation. These are all skill-intensive, including the traditional skills found in factories. But once these tasks are completed, it may make sense to send the ongoing manufacturing process offshore, and to turn those skills to the next product to be developed. Or, in some cases, once an automated process is developed, it hardly matters where it is carried out, because the ongoing manufacturing processes employ so little labour. For example, the manufacture of sterile medical devices is often carried out in sophisticated automated processes where the only humans employed are filling bins of raw materials at one end and driving pallet trucks of finished products at the other.

Plant closures command our attention. We become upset when a manufacturer closes its doors, even though we may not have noticed the long-term decline leading to that closure. The local car industry, for example, which in the days of tariff protection supplied almost the whole local market, now has only a 20 per cent market share. That final 20 per cent has much more political salience than the 80 per cent already gone.

We become concerned about plants bearing brand names of finished products, such as ‘Falcon’ or ‘Holden’. (Somehow ‘Toyota Camry’ just doesn’t seem to be so Australian, even though Toyota’s manufacturing is around the same scale as General Motors’ and much bigger than Ford’s.) We hear about the 10 000 or so jobs in the brand-name manufacturing plants but hardly notice the other 40 000 people employed in the automobile components industry. Component manufacturing, even if for a world market, doesn’t seem to be as publicly valued as the operations which see finished cars roll off the assembly line.

It’s as if we are yearning for an industrial landscape that no longer exists, and which perhaps never existed, when ‘manufacturing’ was the preferred employer and the repository of skills. In its heyday manufacturing did indeed employ many engineers, chemists, skilled tradespeople and craftsmen, but most jobs were unskilled and boring. The idea that manufacturing jobs were unquestionably ‘good’ jobs has never stood up to scrutiny.

In that imagined landscape ‘manufacturing’ was in big factories churning out finished goods for the Australian market, where the employee car parks were filled with Holdens and Falcons. The image, a legacy of the 1960s, hangs around, crowding out ideas of different possibilities – small enterprises in niche markets, and enterprises in which ‘manufacturing’ is only a small (but important) part of the value chain.

The irony is that if we concern ourselves too much with preserving ‘manufacturing’ in the traditional style, we may de-industrialise completely, because many of those older-style enterprises are vulnerable to movements in exchange rates, material costs and labour costs. If we fail to recognise and nurture other industrial patterns, there will be nothing to take the place of what we lose.

As an alternative industrial model we may consider Germany, a high-wage country that has managed to dominate the world in many industries. The stereotypical image of Germany is of huge firms like Siemens and Bosch, and a massive industrial complex in Ruhr, but that is a false impression. Germany's industrial strength is in medium-sized private companies – its 'Mittelstand' firms – scattered throughout the country, some involved in finished products and others supplying to the well-known brand-name multinationals. The Mittelstand owners are patient investors, who prioritise re-investing over distributing profits and who value the investments they make in the skills of their workforces and in the relationships with their suppliers and customers.

Also German industry is well-served by the country's finance sector, a network of 1500 small financial institutions, generally regionally-based. The *Economist* describes Germany's financial sector as "old fashioned" but that it is "working for the public or mutual good rather than for shareholders".

This business culture has allowed Germany to develop areas of deep specialisation, such as chemicals, special purpose fabrics, dyes, industrial machinery and luxury cars. These are industries with high barriers to the entry of competitors because of the need to build up competencies and customer relationships to become established. Some German industries, such as brewing, are based on craft skills which are very difficult to transfer. Most German firms can ride out temporary setbacks such as recessions and exchange rate movements because they have focussed on quality and reliability, thus commanding price premiums. Also, being reliant on domestic capital, German firms have strong control over their own destinies.

We are a long way short of thinking in such terms. We want and expect fast returns on investments – perhaps we're conditioned by our history of commodity booms, which generate expectations of quick profits. We have a taxation system which privileges speculation over long-term investment, and which is particularly favourable to the mining sector.

We think of competition in terms of matching competitors' prices rather than in terms of customer value-added. This comes from our experience as a commodity exporter, because firms in commodity markets are inevitably price-takers, and the only way they can return a profit is through cost reduction. Our mineral and agricultural industries, in fact, are among the world's most efficient through strong attention to cost competitiveness. That cost obsession flows through to our thinking more generally, and has framed the productivity debate in terms of labour costs – a narrow frame which inevitability leads to conflicts about the division of diminishing rewards between 'labour' and 'capital', and sustains institutions representing conflicting 'employer' and 'employee' interests. It's a strong contrast with Germany's more cooperative business approach. Also, our reliance on foreign investment, another aspect of our commodity dependence, has left us incapable of thinking that we may have some control over our own destiny.

The immediate future gives no grounds for optimism. As Haigh points out, there is no assurance that Toyota and General Motors will continue manufacturing in Australia, and if one goes the other becomes more vulnerable, because the parts industry which supplies both firms needs a scale of operation to keep costs down. Our uncertainty about the future of these firms reveals the fragility of our economic base: imagine if Angela Merkel were to tell the German people that she has to wait on a decision in Detroit to learn whether Volkswagen will still be making cars in 2016.

Our broader economic landscape is bleak, largely because of a lack of political leadership. McLean's economic history concludes with the observation that rather than using the recent commodity boom to finance public and private investments to see us through the time when the boom ends, we have dissipated its benefits in middle-class welfare and have failed to invest in our human capital.

Both books have been published in the last twelve months, before we elected a government said to be sympathetic to ‘employer’ and ‘business’ interests. The fact that we still see economic activity as a class struggle between ‘employers’ and ‘employees’, and the fact that we consider ‘business’ to be some homogeneous group with identical interests, show how much our thinking is locked in the past.

There is no homogeneous business sector: some firms will benefit from repeal of the previous government’s hard-won economic reforms such as carbon pricing and a minerals resource-rent tax, while some others, particularly those which have invested in reducing their CO_2 contributions, will be placed at a competitive disadvantage. The Government has promised to abolish instant asset write-off for small businesses, thus making it easier for existing firms not to be bothered by new competitors. And the Government has promised to protect industries with little or no economic contribution, such as the health insurers and the salary packaging industry.

It is a quirk of Australian politics that the party of the ‘left’, the Labor Party, has been much stronger in introducing market-based reforms than the party of the ‘right’, the Liberal Party. Those who remember the Hawke-Keating Government, which stripped away tariffs , which deregulated the finance sector, and which pursued competition policy, know that economic modernisation is disruptive. Businesses which had previously relied on government favours didn’t always survive. The Coalition Governments which preceded and followed the Hawke-Keating Government were much more conservative economically, and the Abbott Government, in its platform and early actions, seems to be even more inclined to protect the interests of those who want to be sheltered from the disruptive forces of economic modernisation.

Those who remember the 1950s and 1960s have seen it before, when the government was captured by those who sought to preserve economic privilege. Tariffs, import quotas and officially-sanctioned restrictive trade practices held us back economically, but we did at least have a means of sharing what benefits there were, particularly through a protected manufacturing sector employing a large share of the workforce. Now the rent-seekers who have the ear of this government are a small plutocracy, dominated by coal and other mining interests. This time we may be going down the Argentinian road we wisely avoided over a century ago.