

8<sup>th</sup> September 2021

Senate Standing Committees on Economics  
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*To the Senate Standing Committees on Economics,*

### Re.: Inquiry into the Australian Manufacturing Industry

#### Background:

The Manufacturing Excellence Forum (Sunshine Coast) Limited ("MEF(SC)") is a NFP Platform that has been tasked with accelerating the creation of an Advanced Manufacturing (AM) clusters across Regional Australia. MEF(SC) is the pilot program for this effort with an initial focus on the Sunshine Coast.

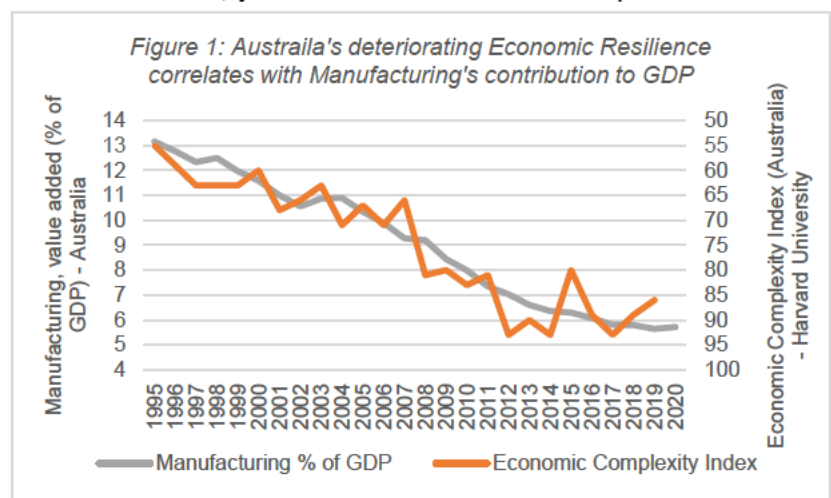
The need for MEF(SC) stems from the headwinds facing manufacturers in Australia, specifically:

1. A strong currency
2. The need to maintain a high standard of living, and
3. Limitations on in the development and supply of skilled human capital

The first and second points are beneficial to a number of sectors in Australia and are part of the reason that international capital flows into these sectors during periods of uncertainty elsewhere in the World (a flight to safety). Australian Manufacturing should (and can) enjoy these benefits if not for the structural headwinds it faces through an insufficient supply of skilled human capital. The headwinds we face on the skilled labour front mean that our strong currency, exemplar institutions, and high standard of living become competitive disadvantages for Australian Manufacturing.

We believe the depressed state of Manufacturing in Australia is a primary cause to our lacklustre economic complexity ranking of 86<sup>th</sup> in the world, just above Uzbekistan in 87<sup>th</sup> position<sup>1</sup>. More disappointing than our low economic complexity rating is that over the past 5 years the likes of Paraguay, Oman, and Qatar have improved their economic complexity rating at a faster pace than Australia.

There is little surprise that Australia's deteriorating economic complexity rating is highly correlated to Manufacturing's contribution to our GDP (Figure 1):



Source: World Bank, Harvard University, Manufacturing Excellence Forum (Sunshine Coast).

<sup>1</sup> <https://atlas.cid.harvard.edu/rankings>

If we stipulate for a moment that Harvard University's Economic Complexity Index can be used as proxy for Economic Resilience, the need to shift the perception that Manufacturing in Australia is too expensive, too difficult, too risky and thus not worthy of investment is necessary. *This shift in narrative is core to MEF(SC)'s activities.*

The challenge we face as a Nation is twofold. First, we struggle with a low level of technological sophistication. Second, we have few specialists who understand and can implement technological revolution inside Australian Manufacturing.

The lack of sophistication stems from general underinvestment and persistent/structural headwinds over the decades which has led to depressed knowledge development, diffusion, and application of advanced manufacturing at an industry level.

We are experiencing significant demand from Australian Manufacturers needing to reverse Industry 4.0 implementation projects after discovering that legacy manufacturing consultants (schooled in various efficiency practises valued by 'build to blueprint' manufacturers e.g. lean, etc) have limited understanding of the potential of i4.0 let alone how to implement and best leverage the technologies available.

*The challenges described above need attention to ensure that the next 30 years for Manufacturing in Australia are very different to the last 30 years.*

MEF(SC) has held workshops and engaged in on-the-ground discussions with leading and legacy manufacturers across Regional QLD. It is this engagement as well as the international experience held by MEF(SC)'s advisory board that forms the context of our submission.

The MEF(SC) looks forward to further collaboration with Senate Standing Committees on Economics and provides the following responses to the terms of reference for your consideration.

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**a. what manufacturing capacities Australia requires for economic growth, national resilience, rising living standards for all Australians and security in our region;**

The MEF(SC) believes that manufacturing is critical in securing our nation's future from both economic and security perspectives.

Many countries are already equipped for what won't change in 30 years – this is a highly competitive theatre characterised by a 'build to blueprint' approach. Strategically, Australia needs to be developing manufacturing process and capabilities for what will change over 30 years.

This is not to say that we abandon those Australian Manufacturers who will continue to service the status quo. The MEF(SC) believes the opportunity to facilitate the development of manufacturing processes for the next 30 years will also benefit those manufacturers that are already experiencing success in their given market.

The core areas needing new manufacturing processes and capabilities are in most part knowable and include:

- Space
- Clean Electrification
- Additive manufacture
- Autonomy

These core areas appear to have become feasible for two core reasons; charismatic leadership and a near zero-interest rate environment. The 'near zero' cost of capital facilitates the ability to fund lengthy project development cycles for new, aspirational, and speculative technologies.

Where substantial progress has been made in what we consider technologically possible or economically feasible, there has been relatively few or immaterial advancements in manufacturing processes to support these new technologies. Capacity to facilitate development of bespoke, complex and highly valued manufacturing processes to support scaling of these technologies is an area in which Australia can carve out an enduring advantage.

Manufacturing capacities required to support entry into these core areas are more so tangential than direct and include an expansion of tertiary positions to assist in the supply of trained human capital, expansion in industry incentives to support industry placement of tertiary students, and increased capacities in support of R&D into new manufacturing processes.

More generally and related to the above, the MEF(SC) agree's with the 6 priority areas highlighted by the federal government (space, defence, med tech, food and ag tech, clean tech, mining). These are areas of national strength that are also strategically critical and should be areas of focus.

Further, the MEF(SC) agree's with the Sovereign Industry Capability Priorities funded through the CDIC. These areas (such as space and guided munitions) will form a critical part of our nation's ability to deter and respond to evolving international threats.

**b. the role that the Australian manufacturing industry has played, is playing and will play in the future;**

The MEF(SC) firmly believe that manufacturing has a critical role to play in our nation's future. Specifically, the creation of sustainable, protectable, and highly-complex economic value that is difficult to replicate is critical and something that will be primarily driven through the manufacturing industry.

Australia continues to play a small-but-highly-respected role in manufacturing and technology innovation for which it continues to leverage a sterling reputation developed over the past 50 years. The rest of the world is, however, increasingly outstripping Australia in this space.

Australian Manufacturing currently excels in the market for complex, low-volume, and high value goods and components. These markets cannot support many competing participants and as a result each marginal revenue dollar earned by the Australian Manufacturer is a dollar that those limited competitors cannot support their own overheads and invest into their own Marketing and R&D efforts. In a sense, the strides made in these markets will filter through to the current manufacturing base.

From a security perspective, the integration of Australian Content into our institutions (particularly defence) will also be critical to ensure that Australian Manufacturing can be funded with minimal market interference.

**c. the drivers of growth in manufacturing in Australia and around the world;**

The primary growth driver of manufactured goods continues to be the broadening of the world's standard of living. As touched upon above, the market cannot unsee aspirations of autonomous electric mobility, space travel and the like. Similar to the 'minute mile' being broken, now that space communication, electric mobility etc, is within the grasp of the mass market, inertia to this end gathers.

From a security perspective, the shift in global power base and geopolitical tensions will drive much of what is deemed strategic and growth will likely focus in those areas.

Leveraging our natural competitive advantages and shoring up weaknesses (much like the SICP's and 6 national priorities are intended to do) needs to be a consistent focus for an extended period.

**d. the strengths of Australia's existing manufacturing industry and opportunities for its development and expansion;**

Considering the headwinds previously mentioned and lack of cut-through over the past 3 decades – manufacturers that have survived and thrived in international markets are “match-fit” and should be seen as something special to emulate.

The MEF(SC) recommends carving out separate support for these entities, independent of whether they sit within an AM priority industry.

**e. the sectors in which Australian manufacturers enjoy a natural advantage in energy, access to primary resources and skilled workers over international competitors, and how to capitalise on those advantages;**

Many of the limitations seems to be the economic viability of value adding activities – particularly around the mining and agriculture sectors.

**f. identifying new areas in which the Australian manufacturing industry can establish itself as a global leader;**

Australian Manufacturing requires a new trajectory. The traditional ‘build to blueprint’ model that has been dominated by low-cost economies for the past 30 years will continue to be dominated by low-cost economies for the next 30 years.

The distinct absence of intellectual property in the ‘build to blueprint’ model means that Australian manufacturing could only compete on quality and experience. Overtime, as these low cost economies built their experience and increased their quality, Australian margins were squeezed.

The opportunity exists for Australia reach up the value chain and influence the design and manufacturing processes that look to leverage new manufacturing technologies in the delivery of new products. This will provide Australia with the opportunity to generate and leverage unique IP and re-engage with its legacy of quality manufacture to deliver unique solutions to new products.

As mentioned previously, electrification, space, additive, and AI are going to be the drivers in the MEF(SC)’s view. Hardware integration with AI will continue to be a critical driver of the economy and advanced manufacturing generally.

**g. the role that government can play in assisting our domestic manufacturing industry, with specific regard to:**

- i. **research and development;**
- ii. **attracting investment;**
- iii. **supply chain support;**
- iv. **government procurement;**
- v. **trade policy;**
- vi. **skills and training; and**

Attracting the ‘right’ investment is seen as critical by the MEF(SC) for the success of this endeavour.

Australian manufacturing needs time to re-establish itself. This means the right structures are needed to attract the right investors.

In the MEF(SC)’s opinion, Australia needs to find suitable Capital holders and target them with suitable tax structures, or legislation to support new and unique return models, and the like. For example, it would be worth considering

- Establishment of a Tradable Tax Credit Market to allow pre-taxable Manufacturers to trade future tax credits to industry in order to fund investment, or
- Adapting royalty structures typically found in extractive industries, or

- A form of Special economic zone or activities (these have been well studied and the attributes common to their success are known), or
- Tax breaks for investment funds who allocate into Australian Manufacturing.
- Etc.

Further, the MEF(SC) believes that the Education market has done a poor job (generally) of

- integrating with industry to increase the quality of its graduates, and,
- commercialising IP in a broad sense, and specifically commercialising IP from research institutions.

Where the market has failed, the Government should step in. An inquiry in how to create structural reform around this area with studies of Israeli, US, or Northern European models to be beneficial, but will ultimately fall short given Australia's unique circumstances.

The MEF(SC) is tackling the enormous challenge of greater industry/education integration in a scaled down and isolated manner. Our experience will be later scaled across regions when it is proven successful.

Further, the MEF(SC) believes that government procurement has a huge role to play here. Creating more Australian Primes (like Nioa and EOS) will be critical in our future success. While grants funding is extremely helpful in growing these industries, government contracts are significantly more useful in the MEF(SC)'s opinion in catalysing industries.

Taking Space as one sector in particular – the current funding channels and mechanisms have been helpful, but nothing provides the certainty of a contract for the development of a fledgling capability. Looking to international institutions that do this well (such as NASA in the USA for the space industry) to see how they achieve this would be of benefit, we believe.

Further, the maturity of our regulatory bodies in aviation and space (the ASA and CASA) are well below international levels and are an enormous hand-break to the space sector.

- h. the opportunity for reliable, cheap, renewable energy to keep Australia's manufactured exports competitive in a carbon-constrained global economy and the role that our manufacturing industry can play in delivering the reliable, cheap, renewable energy that is needed.**

As a developed nation we are expected and need to be doing more in this space. The climate problems faced by governments globally should be seen as the opportunity for Australian manufacturing.

For example, many have called for the removal of the luxury car tax and subsidies to support vehicle registrations/insurance for Electric Vehicles in order to increase Australia's green credentials.

Realistically, the reason that Electric Vehicles are expensive to purchase and insure is because they are expensive to build. The opportunity is in the 'problem' for Australian Manufacturers. Develop and commercialise improved manufacturing processes in support of clean electrification and the products that stem from this movement.

Beyond this, leveraging our geography to be a significant green contributor into the global energy market should be seen as both strategically critical, and as part of being a good (and better than we are now) global citizen.

Ultimately, the question is "how can Australia reduce waste and negative externalities". The MEF(SC) believes that:

1. The answers are known and knowable.
2. The management philosophies and known and knowable.

The key is to ensure that by business' embracing this and 'taking the initiative' they will not be further penalised with reduced margins.

**Conclusion:**

The MEF(SC) are committed to supporting the Australian manufacturing industry to be a sustainable source of resilient economic growth over time.

Where the past 30 years have seen distinct deterioration of Australia's manufacturing capability, it is MEF(SC)'s ambition to materially alter the next 30 years of Australian manufacturing.

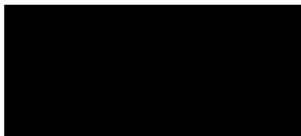
We see that there is material opportunity to accelerate core areas of development in Space, Clean Electrification, Additive manufacture, and Autonomy. We consider the improvements made in manufacturing processes do not match the aspirational technologies introduced to the market. As a result, market frictions in adoption will continue to be elevated due to prohibitive cost structures and waste.

Where the 'build to blueprint' manufacture model has proven to be incompatible with Australia's economic structure, it is in the delivery of new and innovative manufacturing processes, that Australia can begin to re-establish its position as a high-quality manufacturer, and in turn begin to increase Australia's economic resiliency.

As with anything, the first step is ensuring the supply of skilled human capital is available. With out the potential held in skilled human capital, attracting investment to support R&D becomes frustrated.

The MEF(SC) are happy to discuss these any other points relating to the development of our manufacturing industry as desired by the Senate Standing Committees on Economics.

Sincerely,



**Tim Kelly**

Director and Secretary



W: [www.MEFSC.org.au](http://www.MEFSC.org.au)

**COMMERCIAL IN CONFIDENCE**

***About Manufacturing Excellence Forum (Sunshine Coast)***

The MEF(SC) is an industry-run and led body that has been seed funded by local council and federal government. Our Directors and Advisory Panel have experience across international aerospace design and manufacture, ecosystem building, product commercialisation, leadership and culture development, and information technology systems.

In line with our mandate, the MEF(SC) is focused on the attraction of capital and talent (into the Sunshine Coast region, initially) to catalyse and sustain the development of AM clusters.

To make an impact in the short term, the MEF(SC) runs monthly events of up to 100 local manufacturers and supporting industries such as marketing and accounting, government bodies, and education institutions.

These events include keynote speakers and facilitated workshops on topics from commercialisation to manufacturing technology and talent attraction, as well as networking. This has been a key part of creating and strengthening local supply chains, sharing stories of onshoring, and creating a support network that helps our local manufacturers to scale and succeed in international markets.

In the medium term, the MEF(SC) is developing a range of platforms that will accelerate the attraction of both capital and talent into the region for our local manufacturers.

In the longer term, the MEF(SC) is collaborating with education institutions to develop contemporary curriculums that will become the driver of our nation's sustainable success in advanced manufacturing.