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The Australian manufacturing *Mittelstand*: an initial exploration

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Abstract:

This paper examined the nature of the German Mittelstand and how it is defined within the academic and non-academic literature. In doing so, a brief history of the German Mittelstand provided a context for characteristics of this class of business, which are largely qualitative in nature, and which indicate that Mittelstand is not necessarily synonymous with small and medium enterprise (SME), however that may be defined. Nevertheless, a conceptual framework for an Australian Mittelstand is suggested, based to some degree on the size of the firm to differentiate between Kleiner and Größer Mittelstand. Several Australian manufacturing firms were identified which, based on the publicly available information, appear to qualify as Mittelstand. The paper endeavours to provide a starting point for the development of a working definition of an "Australian Mittelstand", to be used in future research aimed at the reinvigoration of the Australian manufacturing sector.

Keywords: Australia, characteristics, Germany, manufacturing, Mittelstand, SME.

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INTRODUCTION

The term "*Mittelstand*" is German for "middle class" (Collins ; WordReference ; Google), and according to Berghoff (2006, p. 264) is a "... very attractive social concept". However, it is also used as a rather broad term to describe small to medium enterprises (SMEs) as found in countries such as Austria, Germany and Switzerland (TU Chemnitz), although it is rather more than that. According to Meyer-Stamer (2000):

In this sense a definition of a *Mittelstand* company cannot be restricted to the value of its assets, the amount of its turnover or the number of its employees. Just looking at numbers leads into a wrong direction, because it neglects that the *Mittelstand* is characterized by certain convictions and attitudes in the context of socio-economic and political processes.

However, despite having a history that can be traced back to at least the 19th Century (von Saldern 1992), these companies have been acknowledged as having played a critical role in the economic growth of post-war Germany and more broadly Europe (Meyer-Stamer 2000). The success of the German *Mittelstand* has been viewed by many outside the German speaking world as a way to stimulate the economic growth of their own SME sector Wooldridge (2014). However, a problem with attempts to develop effective *Mittelstand* oriented policies is the lack of an accepted definition for these firms. This was noted by Hommel and Schneider (2003) in relation to the financing of *Mittelstand* firms:

"The challenges of financing the *Mittelstand* are mostly discussed in practitioner publications, which are in many cases co-sponsored by organisations with a commercial interest in funding these types of companies. Empirical treatments of the subject are scarce and typically struggle with the limited availability of adequate data sources. The absence of a generally accepted definition of *Mittelstand* adds to the difficulty. Quantitative approaches generally use a size criterion - either the number of employees, annual turnover, or a combination of both - to differentiate between *Mittelstand* and other firms". (p. 53)

Berghoff (2006) traces the historical origins of the *Mittelstand* and notes that almost 99 per cent of all German businesses are SMEs as defined by having fewer than 500 employees and annual sales of less than €50 million. These firms employ around 70 per cent of the German workforce and contribute about 57 per cent of value added. They also provide most of the vocational training in that country and are "the backbone of the German apprenticeship system" (p. 269). This reflects their crucial role in providing apprentices with the necessary work experience required to complete their qualifications. However, despite the apparent key role played by the *Mittelstand* firms Berghoff (2006) notes the paucity of adequate definition:

"It is pointless, however, to insist on better definitions, as there are no supportive data and no consensus on them anyway. It is revealing that the German government, citing the extreme heterogeneity of the sector, refuses to offer an official definition. Politically it might be unwise to exclude groups that consider themselves part of the *Mittelstand*. Therefore family firms with five thousand employees are regularly referred to as *Mittelstand*. In any case, there is no consensus among social scientists and statisticians." (p. 270)

Despite this lack of definition the quest for developing a *Mittelstand* within countries in order to stimulate enterprise and replicate the success of Germany has seen much attention given to this type of firm. This has included non-German speaking nations such as the United Kingdom where the growth of "mid-sized companies" is now a subject of keen interest Dakers (2015). For example, in 2011 UK Chancellor George Osborne declared the need for Britain to emulate the *Mittelstand*:

"We want to learn the lessons of the successful *Mittelstand* model, which has operated in Germany for many decades." Kirkup (2011)

This enthusiasm by political leaders to emulate the German *Mittelstand* ignores the problem that the sector lacks definition and reliable measures over the precise contribution that it makes to the national economy Audretsch and Elston (1997).

In Australia the SME sector comprises firms with fewer than 200 employees and these make up around 99.7 per cent of the nation's 2.1 million businesses DIISR (2011). Although the majority of these firms (approximately 60 per cent) are non-employing micro-businesses or micro-firms with less than 5 employees, small to medium sized enterprises represent 15.5 per cent of the total ABS (2002); DIISR (2011). Such firms contribute significantly to the Australian economy by providing around half of all industry employment and more than a third of the industry value added DIISR (2011). This is a similar pattern to that found in New Zealand where firms with fewer than 50 employees contribute over half the nation's employment, and where firms with less than 20 employees comprise more than 97 per cent of all registered businesses (MBIE 2014). SMEs (using the European Union definition of firms with fewer than 250 employees) also form the majority of the firms in most of the world's advanced economies, where they provide most of the employment and a high proportion of the value added (OECD 2010b).

This paper examines the nature of the German *Mittelstand* and how it is defined within the academic and non-academic literature. It aims to generate an initial starting point for the development of a working definition of the *Mittelstand* concept, which can be used in future research relating to the rejuvenation of the Australian manufacturing sector.

BACKGROUND – A BRIEF HISTORY OF THE MITTELSTAND

The *Mittelstand* has its origins in the emergence of a German lower middle class in the 19th Century. According to Blackbourn (1977) it was this group of independent, self-employed artisans, small businessmen, shopkeepers and peasant farmers who rose up in the midst of the 1848 revolution and lent their support to the conservatives. Their own self-interest in resisting the rise of socialism and working class trade unionism made them convenient allies for the German right wing. At the time of this massive political and social revolution across Europe, Karl Marx and Friedrich Engels forecast the destruction of all small businesses by the large corporations (Berghoff 2006). This pattern continued through the second half of the 19th and first half of the 20th Centuries, where the *Mittelstand* provided the foundation constituency of the conservative political movement, including that of the National Socialist (Nazi) Party. In 1891 the German Social Democratic Party (SDP) was announcing that:

"It is the law of nature that the economic development of the bourgeois society leads to the ruin of the small firm." (Berghoff 2006, p. 264)

By 1925 the SDP was declaring that the trend was towards the rise of the large corporation and monopoly, with the ultimate outcome the death of the SME. What is more this view was accepted by both the left and right wings of politics (Berghoff 2006). The impact of the Great Depression of the 1930s was particularly severe on these smallholder farmers, self-employed artisans and small business owners. This economic event saw what has been described as the "Old" *Mittelstand* become linked to the Nazi Party.

There is reference to the "Old" *Mittelstand*, which was a term in common use in the 19th Century to refer to these small shopkeepers, self-employed tradesmen and small farmers. It represented a highly diverse group of interests united primarily around their being neither part of the working class nor the wealthy *Junker* land owners or large industrialists. Of particular importance to the "Old" *Mittelstand* was the desire to have their skills and rights as artisans recognised and protected officially by the state. These rights were not fully granted by the German state in the era of the monarchy from 1871 to 1914, but were recognised in the 1930s during the Third Reich and continued during the post-1945 period (von Saldern 1992).

The rise of Germany's industrial economy in the late 19th and early 20th Centuries saw the emergence of big corporations and strong industrial trade unions. However, the *Mittelstand* continued to operate largely as small, typically family or privately owned firms with a strong focus on skilled artisanship and an investment in apprenticeships. The skills of the "master craftsman" were held in high regard amongst the *Mittelstand*, and they used their political influence to secure the passing of legislation to require such skills to be officially recognised and to control entry into certain industries. The Nazi Party drew on the *Mittelstand* in the 1930s as the foundation upon which to revive the German economy and use it as the keystone in the maintenance of a "healthy state". As noted by von Saldern (1992), citing the German historian Frank Domurad:

"If they [the artisans] were cautious and played their cards right, they would soon no longer be compelled to tolerate the anomic strain imposed on them by the Weimar Republic and enforced by the naked power of large capital and organized labour." (p. 40)

In this manner the "Old" *Mittelstand* became natural allies for the Nazi Party and rallied to its calls to oppose the communists and the bourgeois establishment. The *Mittelstand* found itself caught between "big business" on one side and "socialism", as manifested by trade unions, on the other (Berghoff 2006).

Ultimately the rise of the Nazis did little to improve the situation of the "Old" *Mittelstand* although it did see the introduction of regulations designed to protect skilled artisans and recognise their crafts. As Germany engaged in the Second World War, the *Mittelstand* were impacted by forced closures of small workshops and their consolidation into larger, more efficient enterprises. The artisan skills of many of the manufacturing *Mittelstand* were also turned towards the German defence industries, which initially helped to boost the profits of these firms in the early years of the war (von Saldern 1992).

The post-war era from 1945 saw Germany divided and its economy ruined. It is interesting to note that Berghoff (2006) suggests that the *Mittelstand* survived the turbulent years of the first half of the 20th Century "relatively unharmed", and also avoided the long term historical trends that had threatened its existence (i.e. rise of corporate giants, mass production and the managerial revolution). However, the success of the *Mittelstand* is attributed to two key factors: (1) social approval and political support; and (2) the continuing demand for high quality specialised goods. This has helped to foster a post-war "New" *Mittelstand* built on niche markets into which high quality, specialised manufactures could be sold. The core attributes of the *Mittelstand* business model have been the production of high quality, differentiated products that command premium prices and require a highly skilled workforce, strong entrepreneurial leadership, family-owned "paternalistic" management and innovation.

However, according to Berghoff (2006) the German *Mittelstand* was faced with a crisis by the 1970s. This comprised a loss of competitiveness in the West German economy, foreign competition and a conservative mind-set in the management of these firms. Germany's reunification in the 1990s did not improve the situation and probably made it worse as the former East Germany's largely state-owned enterprises were broken up but not replaced by viable SMEs. This led to instability within the German *Mittelstand* and forced those that remained to adopt a more global orientation.

From this short historical overview of the *Mittelstand* it can be seen that the fundamental "DNA" of these firms is their adherence to an SME ownership mindset characterised by private often family ownership, adherence to artisanal skills and the production of high quality specialised products sold for high margins in niche markets. However, as Berghoff (2006) notes, the nature of the German *Mittelstand* has changed significantly since the 1970s and many of what were formerly SMEs are now very large firms with global focus, plus a social and cultural orientation that had lost much of the original characteristics. This makes defining the *Mittelstand* even more complex.

DEFINING THE MITTELSTAND

As noted above there are no reliable and universally accepted definitions of *Mittelstand* firms. Our review of the literature suggests that a useful and obvious starting point is firm size, with most definitions of *Mittelstand* highlighting their inclusion of SMEs. However, while some authors, and German Government agencies in particular, tend to equate *Mittelstand* to SMEs (itself a poorly defined concept), other authors accept the inclusion of large firms. For example, Logue et al. (2015) state:

"...a firm with a workforce of over 1,000 can be considered part of the *Mittelstand*"

Meyer-Stamer (2000) includes manufacturing enterprises of more than 500 employees, and McDonald et al. (2003) classified as *Mittelstand* firms with 50 to 1,000 employees. Further, Berghoff (2006) notes:

"There are good reasons to increase the cut-off point to one thousand or more employees".
(p. 270)

However, there are numerous other attributes that have been used to define *Mittelstand*. According to Berghoff (2006) these include six characteristics: (1) family ownership; (2) focused on long-term strategies; (3) ownership that is emotionally attached to the business; (4) intergenerational continuity of ownership; (5) an informal and patriarchal culture; and (6) independence.

Almost all German *Mittelstand* are family owned and many are managed by the owner (Berghoff 2006). Perhaps as a result, there is a strong emotional attachment to the firm and a strong sense of independence (BMW 2013). The *Mittelstand* are also identified as exhibiting "generational continuity" with many, as family owned firms, having survived the transfer of management across one or more generations of the owning family (Berghoff 2006). Such firms also tend to have a management outlook and planning style that is especially long-term with focused strategies and an SME-style close proximity to their customers, while also being regionally located and helping to support local communities (Berghoff 2006).

As outlined earlier, the products produced by German *Mittelstand* are often niche, with many feeding into the supply chains of larger firms BMW (2013). There is a strong commitment to

innovation and quality within the *Mittelstand*, reflecting the long history of an artisanal culture and mindset, and this is supported by strong investment in R&D. Traditionally the financing of these *Mittelstand* firms has been based on retained profits and bank financed debt with only limited recourse to third-party equity through venture capital investment Audretsch and Elston (1997).

The *Mittelstand* management culture has also been characterised as "enlightened patriarchy", which has been described as:

"...the fatherly concern most *Mittelstand* managers feel for their employees and their employees' families". BMWi (2013)

This reflects the family business ownership of many *Mittelstand*, but also the small business mindset of the owner-manager who has a strong sense of caring for and guiding their staff. In keeping with this small business mindset and culture other characteristics of the *Mittelstand* firm are a degree of informality and flat hierarchies Simon (1992), as well as fast decision making Berghoff (2006). Their human resources policies are characterised by stable employment and commitment to training (BMWi 2013). Perhaps as a result, there is close employee identification with the firms (Linnemann 2007).

Since the 1970s Germany's *Mittelstand* have become more focused on international trade, initially across Europe and then more widely into other countries (Berghoff 2006; Parnell 1999). However, they have tended to show a "cautious and sequential" approach to internationalisation, with some becoming "hidden champions" and some taking a multi-domestic approach to production as a means of being closer to customers. As a result, Linnemann (2007) describes some as "pocket multinationals".

Characteristics of the German Mittelstand

Our preliminary view of the literature identified at least 18 distinct attributes associated with the German *Mittelstand* firm. These are listed in Table 1 where it can be seen that the most common attributes are that these firms are SMEs and family owned. However, the view that the *Mittelstand* firm is an SME representing the small business and skilled artisan has become challenged in recent decades with definitions including large firms. For example, Berghoff (2006) notes:

On the other hand, a firm with a workforce of over a thousand can be considered part of the *Mittelstand* if it is owned and run by a family and if its business culture has retained aspects of the original economic and cultural arrangements, such as family control and management, lean management structures, strong family values, a patriarchal culture, and an emphasis on continuity.

It should be noted that our review has primarily focused on the literature in the English language. Further, in reading Table 1, it should be noted that not all authors addressed all characteristics as most cited papers were addressing some aspect of the German *Mittelstand*. Hence, the absence of a characteristic from an author's list is not indicative of them dismissing that factor. That said, the most commonly nominated defining characteristics in addition to size are: (1) family ownership; (2) long-term focus; (3) niche product; (4) generational continuity and (5) innovation. Moreover, while *Mittelstand* is often equated to SME status, half the authors included large firms in their grouping.

Table 1: Attributes of the German *Mittelstand*, Frequency and Sources

Attributes	Frequency	Sources
1. SMEs	7	Berghoff (2006); BMWi (2013); Colli, Rinaldi & Vasta (2013); Fear (2014); Linnemann (2007); Louge et al. (2015); McDonald et al. (2003).
2. Family owned	7	Nightingale & Coad (2013); Berghoff (2006); Bryant (2012); Coli et al. (2013); Fear (2014); Institut für Mittelstandsforschung Bonn (IFMB) (2015b); Simon (1992a).
3. Large firms included	6	BMWi (2013); Coli et al. (2013); Fear (2014); Linnemann (2007); Logue et al. (2015); McDonald et al. (2003).
4. Long-term focus	6	Nightingale & Coad (2013); Berghoff (2006); BMWi (2013); Fear (2014); Linnemann (2007); Simon (1992a).
5. Niche products	6	Berghoff (2006); BMWi (2013); Bryant (2012); Linnemann (2007); Louge et al. (2015); Simon (1992a).
6. Generational continuity via family succession	5	Nightingale & Coad (2013); BMWi (2013); IFMB (2015b); Linnemann (2007); Simon (1992a).
7. Innovative	5	Berghoff (2006); BMWi (2013); Bryant (2012); IFMB (2015b); Simon (1992a).
8. Regionally located	4	Berghoff (2006); Coli et al. (2014); IFMB (2015b); Logue et al. (2015).
9. Enlightened patriarchy	4	Nightingale & Coad (2013); Linnemann (2007); Meyer-Stamer (2000); Simon (1992a).
10. Flat hierarchy / informality	4	Nightingale & Coad (2013); IFMB (2015b); Linnemann (2007); Simon (1992a).
11. Cautious internationalisation	4	BMWi (2013); Coli et al. (2013); IFMB (2015b); Logue et al. (2015).
12. Avoidance of debt/equity financing	4	Berghoff (2006); BMWi (2013); Audretsch & Elson (1997); IFMB (2015b).
13. Services focus	3	BMWi (2013); Coli et al. (2013); Logue et al. (2015).
14. Emotional attachment to firm by management	3	Nightingale & Coad (2013); Fear (2014); Simon (1992b).
15. Close to customers	2	Berghoff (2006); Linnemann (2007).
16. Commitment to skills training of workforce	2	Berghoff (2006); BMWi (2013).
17. Independence of ownership	2	Nightingale & Coad (2013); BMWi (2013);
18. Fast decision making	1	IFMB (2015b)

This initial review of the way the *Mittelstand* concept has been defined in both the academic and wider literature highlights the lack of consensus over definition for this type of business. Although it provides a useful starting point for future research that is important if the real value of *Mittelstand* firms are to be properly understood. As Audretsch and Elston (1997) observed, the lack of good definition and as a result good measures of the role of the *Mittelstand* makes it difficult to assess their direct contribution to the German economy. The ability to accurately determine their contribution to trade, employment and economic growth is compromised by this lack of definition. This remains important not only for assessments of the role played by the *Mittelstand* within the German economy, but also for countries that seek to emulate it and compare the performance of their own “*Mittelstand*” firms against those of Germany. Examples of this can be found in nations such as Japan, Italy, Portugal, the United States and Britain (Audretsch & Elston 1997).

Given that the ultimate purpose of the research, of which this paper is a first step, is the rejuvenation of Australia's manufacturing sector, and given the dearth of large Australian manufacturing firms, it is tempting to simply aim for the creation of more SMEs. However this may not have the desired effect. Despite the aura surrounding small business in Australia, the UK and the USA, Nightingale and Coad (2013) observe:

This belief in entrepreneurship [i.e.: startups] as a potential solution to unemployment, economic growth, regional development, and innovation leads to substantial levels of public support. Looking at UK data, Storey (2006: 248) estimates that "the annual total financial support for small business is equivalent to a public expenditure of GBP 7.9 billion...To contextualize that expenditure, each year the UK spends more taxpayers' money on small businesses than it spends on the police force" or universities at GBP 7 billion each.

Nevertheless, while start-ups may not be the answer to the creation of jobs and high growth sustainable companies, they do play a role. However, the *Mittelstand* is less about start-ups and more about established SMEs that have the sustainability to grow modestly and provide employment and economic contributions to the national GDP in a way that most start-ups will never do (Mason & Brown 2013).

Care will need to be taken in any future investigation into the Australian *Mittelstand* to ensure they are the firms that can offer significant contributions to the national economy. The concept is not just a replacement for the term SME.

While the term SME is widely used around the globe in industry, government and academia, it is specific to the particular environment in which it is used. Not only are quantitative criteria very different from definition to definition, but the criteria themselves vary greatly from definition to definition, with some based on employees, others based on turnover and some both. Hence, except in a narrow set of circumstances, "SME" is not very useful and is certainly not a synonym for *Mittelstand*.

Other terms appearing in the literature that could also be confused with *Mittelstand* include "high growth firms" (HGF) and "gazelles". The OECD defines HGFs as:

All enterprises with average annualised growth greater than 20% per annum, over a three year period should be considered as high-growth enterprises. Growth can be measured by the number of employees or by turnover. (OECD 2010a)

A related term is "Gazelle firm", which is described by the (OECD 2010a) as "... the subset of high-growth enterprises which are up to five years old." Hence, the definition of gazelle used by the OECD and the European Communities / OECD (2007):

All enterprises up to 5 years old with average annualised growth greater than 20% per annum, over a three year period, should be considered as gazelles.

In this regard, they have little in common with *Mittelstand*, which in contrast with the gazelles are likely to be older than five years and generally take a risk-averse approach.

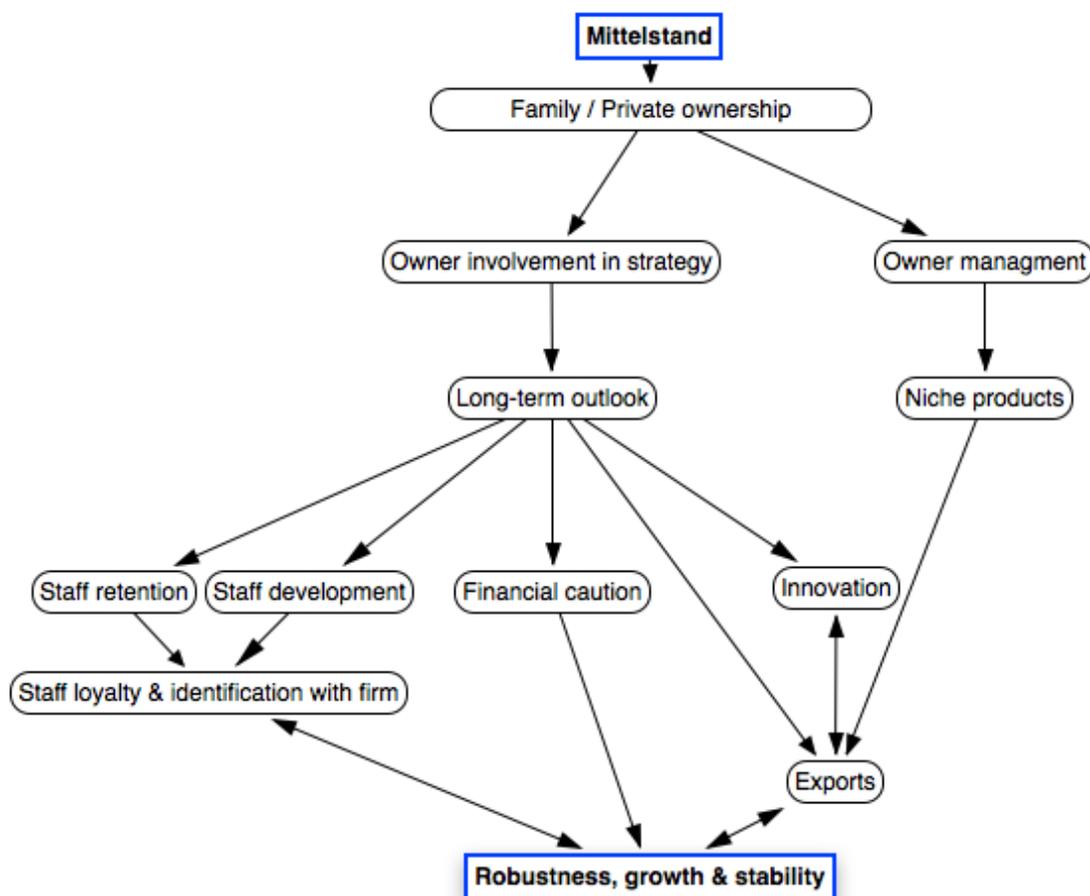
The final definition and business type associated with *Mittelstand* is that of "hidden champions" (Simon 1992; Simon 2009), which arguably has a substantial degree of overlap with the *Mittelstand*. A company must meet three criteria to be considered a "hidden champion": (1) be first, second or third in a global market or number one on its continent; (2) have revenue below \$US4 billion; and (3) possess a low level of public awareness. Clearly, given the modest size of the Australian economy and market, the first criterion must be treated with caution in Australia. Indeed, referring to a company being "number one on its continent" is arguably only relevant in Europe, North America and Asia. At this time, in most segments, becoming one of the top three competitors in Australia, Africa or South America would be a relatively modest achievement and one which could not be compared to being a top three firm globally.

Some authors infer that all *Mittelstand* are hidden champions, which is clearly not the case. Simon (2009) refers to about 2,000 hidden champions, whereas *Mittelstand*, however defined number in the millions (see Simon (2009)). Hence it is arguably true to say that while all *Mittelstand* are not hidden champions, many hidden champions are *Mittelstand*. That said, many Australian *Mittelstand* share some of the characteristics of hidden champions in that they have larger shares of global markets than would normally be expected of Australian manufacturers. Petzoldt (2013) identifies a handful as hidden champions.

Conceptual framework for *Kleiner Mittelstand* and *Größer Mittelstand*

To illustrate this emerging concept of *Mittelstand* we offer Figure 1 as a starting point. As shown the *Mittelstand* firm is characterised by family or private ownership and an ownership that is either engaged directly in the day to day operations as an "owner-manager" (common in the micro and small firms), or in an active way via strategy development (as is common in mid-sized and many larger family or privately owned firms). This characterises what we might label the smaller or *Kleiner Mittelstand* and the greater or *Größer Mittelstand*.

Figure 1: Characteristics of *Mittelstand*



The *Kleiner Mittelstand* firm, in the case of manufacturing, is therefore likely to be a micro or small firm that is owner-managed and focused on the production of artisanal products for specialist or niche markets. This requires these firms to orient towards high quality or at least unique products that can be exported and/or plugged into the global supply chains of major companies. Innovation is a key feature of these firms in order to enable them to maintain a competitive position within these markets. It should be noted that such innovation is not necessarily based on high-technology. Low to mid-tech industries can also have such firms operating within them (Hirsch-Kreinsen, Jacobson & Robertson 2006). However, if such firms are able to successfully commercialise their innovations and establish competitive niches in selected markets they will be able to sustain growth, employment and make a strong contribution to the national economy.

The *Größer Mittelstand* firm is a medium to larger firm with up to 1,000 employees. Its size and management structure will enable it to have a long-term strategic outlook. Attributes that characterise this type of firm are a commitment to maintaining a stable workforce and helping to keep its skills high through training and staff development. In return such firms are likely to engender the loyalty and identification of their staff with the enterprise. The *Größer Mittelstand* firm, like its smaller counterpart, is also committed to innovation and exporting, but it is likely to approach financing new products or export expansion in a relatively cautious manner.

Why is an Australian manufacturing Mittelstand important?

Our aim of identifying, defining and then researching the characteristics and dynamics of an Australian manufacturing *Mittelstand* is motivated by the desire to help reverse the decline of the sector. Public perceptions of the actual and impending demise of Australian manufacturing are no surprise given the regular feed of "bad news" headlines in Australia, although as alluded to above, there are some very high achieving Australian manufacturers.

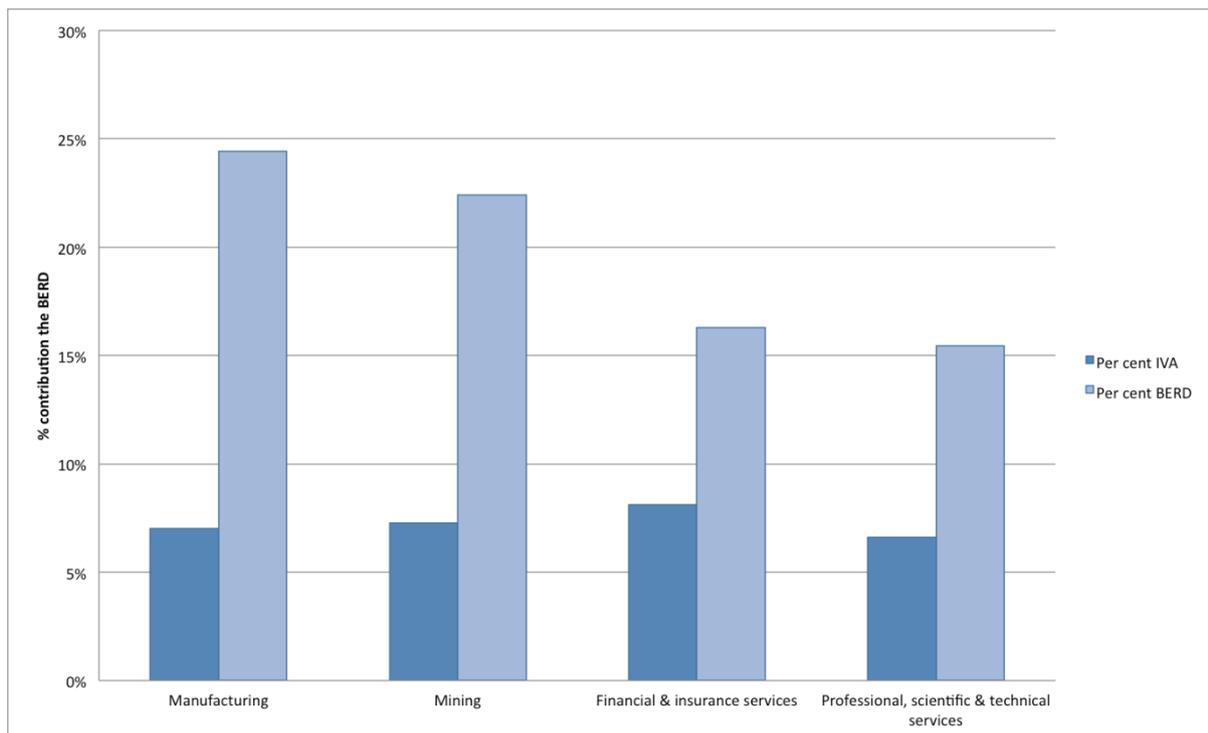
Although on the face of it, manufacturing is reducing in significance in Australia, it is a key element of any advanced economy. This is due not only to the sector's economic contribution to its host economy in the form of industry value add and employment, but also the high levels of involvement of the sector in research and development (R&D). According to the Australian Bureau of Statistics (ABS 2013), in terms of business expenditure on R&D (BERD):

"Manufacturing and Mining remained the largest contributors to total BERD in 2011–12, contributing \$4,474 million (24%) and \$4,104 million (22%) respectively. Financial and insurance services (\$2,985 million or 16%) and Professional, scientific and technical services (\$2,832 million or 16%) were the next largest contributors. Together, these four industries accounted for more than three quarters (79%) of total BERD in 2011–12."

Manufacturing's disproportionate contribution to R&D can be seen in Figure 2, which shows the contribution it makes as a sector to BERD and GDP.

It should also be noted that the mining sector's investment in actual R&D as demonstrated in Figure 2 has been challenged. For example, at the time of the debate in 2009-2011 on reforms to the Australian Government's tax incentives for R&D, it was contended that the mining sector's expenditure had been an accounting exercise. Green (2015) observed it had "... mostly been directed at tax minimisation rather than technology maximisation".

Figure 2: Major Australian Industry Sector Contribution to BERD and GDP



Source: Australian Bureau of Statistics (2015a) and Australian Bureau of Statistics (2013)

Further, manufacturing is also a major contributor to skills development and training. According to Green (2015):

"Without manufacturing, we face the prospect of losing science and engineering expertise that has taken generations to nurture in research and production. Manufacturing directly employs one in five engineers in Australia, and many more indirectly. These skills are not only critical to new growth industries but are core infrastructure skills on which every modern economy depends."

"Many people initially trained in manufacturing move to other industries. Where will the engineers, technicians, maintenance fitters and machinists come from to install and maintain our telecommunications, power stations, water plants, transport and defence systems? The resources sector does not train for these skills, but 'buys them in'."

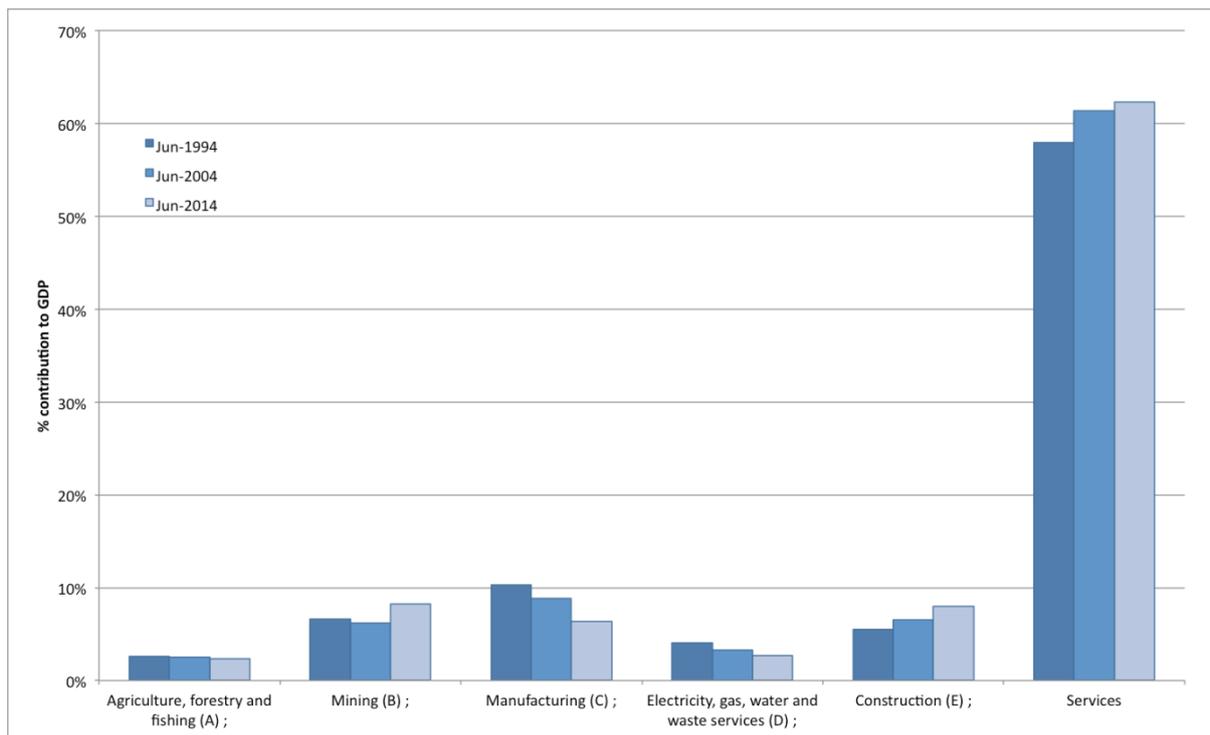
By comparison, Karmel and Rice (2011, p. 49) noted that the resources sector:

"... is in general a small player in the provision of apprenticeships and, moreover, it employs fewer apprentices than would be expected, given its share of trade employment."

Nevertheless, in Australia the proportion of GDP contributed by manufacturing and both the absolute and relative the size of its workforce is reducing as illustrated in Figure 3.

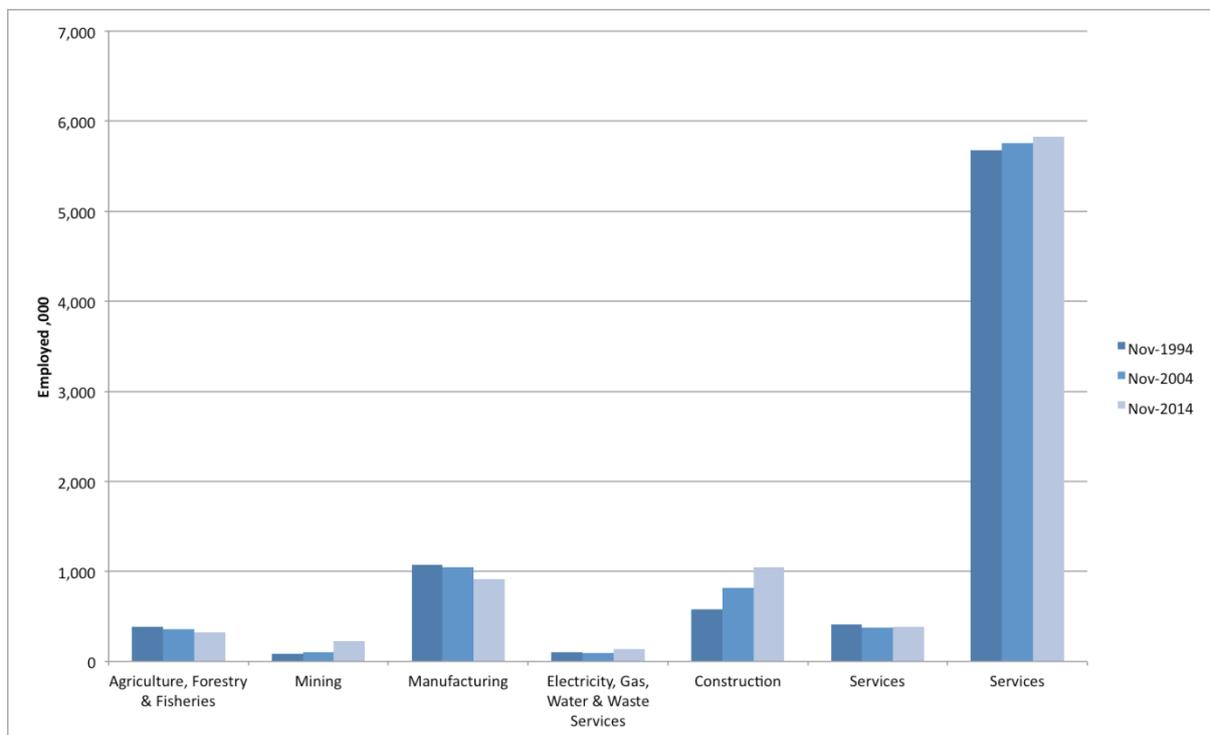
Some observers attribute this proportionate reduction to the relative growth of the service sector, and in the recent "mining boom", the contribution to GDP of mineral exports has increased substantially. Further, as the manufacturing sector has introduced greater levels of automation and offshore manufacture of key components, the level of employment provided by the sector relative to services or construction has declined as illustrated in Figure 4.

Figure 3: Industry Contribution to Australian Domestic Product, 2003/04 to 2013/14



Source: ABS 5206.0 Australian National Accounts: National Income, Expenditure and Product

Figure 4: Change in Employment from November 2004 to November 2014 ('000s)



Source: ABS 6291.0.55.003 Labour Force, Australia, Detailed, Quarterly

In terms of the absolute performance of the manufacturing sector, increased competition from China and similar expanding economies under liberalised trade arrangements have been among the factors working against manufacturers. So have the terms of trade arising from the high Australian dollar bolstered by the boom in minerals exports. That said, it has also been suggested by some authors that the apparent lowering of the proportion of manufacturing's contribution to GDP reflects an underestimate of the value add of the sector is due to the increasing importance of the services bundled with tangible goods that are increasingly the product being offered by successful manufacturers. As Banks (2011, pp. 10-11) notes:

"The fact that the relative importance of manufacturing is falling does not mean that its absolute importance has changed that much. Real output has actually risen by around 50 per cent since 1984. A shift to more capital-intensive production nevertheless saw manufacturing employment fall from 1.1 million in 1984 to 950,000 in 2011, but this is a small change relative to the economy-wide increase in employment over that period. Finally, the reduction in employment in the manufacturing sector may to some degree be a reflection of increased productivity arising from substantial investments in capital equipment."

"Furthermore, official employment numbers significantly overstate manufacturing's relative decline. Part of this is a statistical artefact, with many services once provided 'in-house' – such as transport, accounting, IT, legal, and design services – now being outsourced, and the jobs therefore no longer classified as 'manufacturing' in official statistics."

Nevertheless, the loss of key sub-sectors such as the impending closure of the automotive assembly industry can be expected to have a cascading effect across both the manufacturing sector and the wider economy. Anticipated losses may include reduced industry value-add, loss of employment, de-skilling, and loss of the services directly and indirectly provided by the automotive sector to the wider economy and society (the "base-load demand to justify the installation of production facilities in other industries" (KordaMentha Partners and staff 2013). As is common with manufacturing sectors around the world, substantial investments in staff training occur in this sector, and these benefit the entire economy.

Similarly, as noted above, R&D expenditure by the Australian manufacturing sector is disproportionately high and again, it is reasonable to assume positive spillover effects for the broader economy. For example, in 2009 manufacturing contributed 26 per cent of all expenditure on R&D across Australian industry even though it represented only nine per cent of total GDP (KordaMentha Partners and staff 2013).

IDENTIFYING AN AUSTRALIAN *MITTELSTAND*

If manufacturing in Australia is to survive and prosper it must become more focused on innovation both in terms of product and business model design. It must also adapt to both new technologies and also the globally networked and interconnected nature of world trade. Close proximity to customers, plugging into global supply chains and offering solutions not products with high levels of customisation are all essential factors for success (KordaMentha Partners and staff 2013).

These are a good fit to the characteristics of German *Mittelstand* described above, but not necessarily features of many Australian SMEs. Furthermore, as outlined in our introduction, the Australian SME sector comprises a significant proportion of the national economy and plays a key role in employment generation and economic growth. Is it possible to identify an Australian *Mittelstand* and if so what might its attributes be?

In addressing this question our focus is primarily on manufacturing firms. This is a reflection of our wider interest in this sector, but also because the manufacturing industries have been the primary source of much of Germany's *Mittelstand* "hidden champions" (Simon 1996).

Defining the Australian manufacturing Mittelstand

Drawing on the attributes outlined in Table 1, any definition of an Australian *Mittelstand*, particularly one that is relevant to the manufacturing sector would need to initially focus on firm size and ownership structure. As our conceptual model illustrated in Figure 1 suggests, there is likely to be at least two broad groups that we have labelled the *Kleiner Mittelstand* and the *Größer Mittelstand*. These would have the characteristics discussed earlier in this paper.

Australia's manufacturing industry is a diverse sector that employs an estimated 991,800 people, while contributing significantly to gross industry value added (FMIIC 2011; KordaMentha Partners and staff 2013). Of this workforce the majority (61per cent) are employed within SMEs, divided into micro (28per cent), small (24per cent) and medium sized firms (9per cent) (ABS 2008). However, if we draw on the attributes of the *Mittelstand* outlined in Table 1 and include larger firms with up to 1,000 or more employees a further 20 per cent of all employment would be added. This would suggest that the Australian *Mittelstand* manufacturers would represent 81 per cent of all employment and 72 per cent of all value added within the sector (ABS 2008).

In terms of businesses, the Australian manufacturing sector has around 131,183 operating firms of which just over half (52.3 per cent) are non-employing micro-enterprises that are operated by a self-employed artisan. The next largest groups are small firms (41.9 per cent) with less than 20 employees, and then medium sized firms (5.3 per cent) with between 20 and 200 employees. Large firms comprise around 0.5 per cent of the total (ABS 2006). This would suggest that within the Australian manufacturing sector there is a potential structure as follows:

Kleiner Mittelstand: This group comprises about 123,575 micro/small manufacturing firms. It provides employment for around 511,769 people (including self-employed artisans), representing 52 per cent of the total manufacturing workforce. In addition it contributes around 36 per cent of the total industry value added.

Größer Mittelstand. This group comprises about 7,000 medium to larger firms (with up to 1,000 employees). It employs around 286,630 people or 29 per cent of the manufacturing workforce, and contributes 36 per cent of the total industry value added.

In common with German *Mittelstand* the Australian variety would need to have similar attributes across the two generic types. While size of payroll is only one attribute of such firms, the elements identified in Figure 1 reflect a range of components that offer a useful framework for guiding future research. D'Amboise and Muldowney (1988) provided a further conceptual framework for the analysis of SMEs comprising five key dimensions: (1) the "task environment" surrounding the firm (e.g. industry environment, export or domestic markets, competition etc.); (2) the "organisational configuration" of the firm (e.g. size, ownership structure, complexity); (3) the "managerial characteristics" of the firm's owners and managers; (4) the "evolution" or growth cycle of the firm; and (5) the "success-failure" of the firm in seeking its strategic goals. Together these provide a conceptual framework for exploring the Australian manufacturing *Mittelstand* as shown in Table 2.

Table 2: Conceptual framework of Australian manufacturing *Mittelstand* definition

Units of analysis	<i>Kleiner Mittelstand</i>	<i>Größer Mittelstand</i>
Task environment	<ul style="list-style-type: none"> • Service focused (solutions not products) • Export oriented • Niche products as a core focus • Close to customers • Staff development 	<ul style="list-style-type: none"> • Service focused (solutions not products) • Export oriented • Long-term outlook in industry • Close to customers • Staff development
Organisational configuration	<ul style="list-style-type: none"> • Non-employing micros • Employing micros • Small firms • Family owned / Private company • Flat hierarchy / informality • Avoidance of debt/equity financing • Independence of ownership 	<ul style="list-style-type: none"> • Medium firms • Large firms up to 1,000 employees • Family owned / Private company • Lean management • Avoidance of debt/equity financing • Independence of ownership
Managerial characteristics	<ul style="list-style-type: none"> • Self-employed artisans • Owner-managed business • Emotional attachment to firm by management • Fast decision making • Enlightened patriarchy • Commitment to skills training of workforce 	<ul style="list-style-type: none"> • Professional management team • Owner closely involved in strategy • Emotional attachment to firm by management • Fast decision making • Enlightened patriarchy • Commitment to skills training of workforce
Evolution	<ul style="list-style-type: none"> • Cautious internationalisation 	<ul style="list-style-type: none"> • Generational continuity via family succession • Cautious internationalisation / pocket multinationals
Success-failure	<ul style="list-style-type: none"> • Commercialisation of innovation • Exports 	<ul style="list-style-type: none"> • Commercialisation of innovation • Exports • Staff loyalty & identification with firm

CONCLUSION

An Australian *Mittelstand* is yet to be defined but as outlined in this paper, any definition will need to focus on more than just size of payroll. Also important are the ownership structure and characteristics of the management and their approach to customers, R&D, innovation, human resource development and exporting. Financing the *Mittelstand* may be further area for future research, as it has been seen as an area for special attention within the German economy (Audretsch & Elston 1997; Hommel & Schneider 2003). Niche products, particularly for the smaller *Kleiner Mittelstand*, plus the need for high levels of innovation and global focus will all be part of the units of analysis required in investigating these phenomena.

Australian *Mittelstand* in common with their German counterparts McDonald et al. (2003) appear to place a stronger focus on bundling services and support than is often the case with Australian SMEs and this appears to provide them with a strong competitive advantage. However, it has the potential to lead to an under estimation of their value add Banks (2011).

In order to conduct any study of Australian *Mittelstand*, it is necessary to define or at least, describe their characteristics. While it is as difficult to define Australian *Mittelstand* as it is the German variety, it is possible to ascribe characteristics; many of which as can be seen above are shared. To further illustrate this we have provide in Table 3, a list of 10 examples of firms that might fit the general profile of an Australian *Mittelstand*.

Table 3: Examples of successful Australian manufacturers

The **ANCA Group**. Based in Bayswater, Victoria, ANCA has used its expertise in motion control to produce a range of CNC tool grinding machines. With a presence in the United Kingdom, Germany, China, USA, Brazil, Italy, Japan, and India, service to their high-end clients is assured. About 99 per cent of the company's product is exported.

Blackmagic Design is a Port Melbourne-based privately owned company, which makes about 100 video products ranging from cameras to editing equipment. Their products are sold in 100 countries and they have offices in the UK, Japan, Singapore and the United States. Australia accounts for one per cent of the company's sales.

Hofmann Engineering Pty. Ltd is a Bassendean, WA based family-owned heavy engineering firm with facilities in Victoria, North and South America and India. Although originally specialising in servicing the mining industry, the firm now provides services and components to renewable energy, defence, aerospace and transport applications.

Miller Camera Support Equipment was founded in 1954. The company designs and delivers professional fluid heads and tripods to the film and television industry, providing support for the world's leading camera operators. Miller holds the first patent for fluid head design for film cameras, which it obtained in 1946. Today, Miller's tripod and camera support systems are used by the world's leading networks, production houses, corporate, educational and government institutions in more than 65 countries.

Orica is an Australian publicly owned multi-billion dollar, global providing explosives for the mining industry. The company has a diverse workforce of over 12,500 people, with operations in more than 50 countries and customers in more than 100. It is recognised as a "hidden champion" by Simon (2009).

Quickstep Holdings Limited is an Australian-listed company which manufactures advanced composite in Australia and develops and licences advanced composite manufacturing technologies for the global market. The Company currently operates from its fully-commissioned aerospace-grade manufacturing facility located at Bankstown Airport, NSW, where it manufactures parts for the F-35 Lightning II Joint Strike Fighter and the C-130J wing flaps for Lockheed Martin. In 2014, they announced the creation of an automotive division.

Redarc Electronics is based in Lonsdale, SA and has over 30 years' experience in the research, design, development and manufacture of a range of electronic voltage converters and associated products, inverters, power supplies, battery chargers, turbo timers, glow plug timers and trailer braking products automotive and heavy vehicle applications.

RØDE Microphones is an Australian owned and operated audio company. Based in Silverwater, NSW the company has two warehouses, its manufacturing facility and a support staff of more than 140 people. The firm has offices in Seattle, Los Angeles, New York and Hong Kong.

Textor Technologies is a Tullamarine-based manufacturer of healthcare fabrics which has recently developed a product with the assistance of the CSIRO which has been taken up by Kimberly-Clark Australia and is being widely exported.

Visy is a privately owned packaging and resource recovery company. It employs over 5,500 staff and operates in over 120 sites across Australia, New Zealand, Thailand and Vietnam and trading offices across Asia, Europe and the USA. Visy also has a 'sister' company, Pratt Industries USA, which employs a further 3,500 staff in North America.

It should be noted that with the exception of Orica and Quickstep, all of these are private companies. Across this small sample we see firms, which are exporting, either from Australian manufacturing sites or on a multi-domestic basis, innovative, and succeeding by providing solutions, rather than merely physical products. Furthermore, Simon (2009) identifies Orica as a hidden champion while ANCA has since been also identified as such by Petzoldt (2013).

It appears from this preliminary work that Australia has manufacturers which are home-grown *Mittelstand* and in some cases, hidden champions. In order to take this work further to understand how they came about, further examples will need to be identified using objective criteria. In order to do this, a robust definition of "Australian *Mittelstand*" will be developed.

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