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Changes in work and production organisation in the automotive industry value chain: an evaluation of the responses by labour in South Africa

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CHAPTER 1
INTRODUCTION, METHODOLOGY AND STRUCTURE

1.1. Title and central question

This study is titled *Changes in Work and Production Organisation in the Automotive Industry Value Chain: An Evaluation of the Responses by Labour in South Africa*. Central to this study is the objective of addressing the question: What are the changes in work and production organisation in the South African automotive industry value chain, their impact on members of the National Union of Metalworkers of South Africa (NUMSA) and the union's responses?

1.2. Introduction

The South African automotive industry value chain and its operating environment have undergone significant change. This applies particularly to the intensified change that has occurred since 1995 – a year after South Africa entered a democratic dispensation.

During apartheid rule, the country was largely, although not completely, isolated from the international economic operating environment. This was partly through sanctions. Isolation led to some of the automotive industry Multinational Corporations (MNCs), mainly assembly plant companies – Original Equipment Manufacturers (OEMs) – pulling their investments out of South Africa. As a result, among other generally the South African automotive industry has lagged behind in the introduction of new models. Factors that contributed to this include licensed production.

Justin Barnes (2000) points out that prior to the 1990s the majority of domestic-based OEMs were operating under licensing agreements under associated MNCs. Implicit in this is that frequent changes in work and production organisation, which are today associated with the rapid introduction of new models, were not much on the agenda at that time. The South African automotive industry was also extensively protected by a

series of Import Substitution Industrialisation (ISI) programmes pursued prior to the 1990s to promote local content (Black 2009).

South Africa's 1994 transition to a democratic dispensation changed the context completely from its pre-1990s conditions. The country was to undergo a rapid reintegration into the international economic operating environment. This time, however, it was not under colonisation, but globalisation, as discussed in Chapter 3.

As a leading manufacturing sector in the South African economy, the automotive industry merits close study; the strategic nature of this industry is further examined in Chapter 3.

Linked to the strategic nature of the automotive industry, in 1995 the democratic government adopted a new industrial policy for the industry: the Motor Industry Development Programme (MIDP). The MIDP was to mediate the reintegration of the country's automotive industry into the global economic operating environment. The MIDP gradually phased down tariffs but provided export incentives and support, including duty rebates and import–export complementation mechanisms (Barnes 2000; Black 2001).

Under the MIDP, tariffs were scheduled to phase down to 40 per cent for light vehicles and 30 per cent for components by 2002 (Black 2009). Later policy reviews scheduled further phased-down tariff reductions to 2012 (Black 2009). Compliance with the World Trade Organization (WTO) led government to review the MIDP and replace it with the Automotive Production and Development Programme (APDP). This involved a shift from export support to production support, while phased-down tariff reduction (albeit at a slower pace) are transitionally maintained as the MIDP gives way to APDP. The MIDP is further discussed in Chapter 3 in terms of the location and position of South Africa with regard to the automotive industry.

Under globalisation and as part of the reintegration of the domestic automotive industry into the global operating environment, the mid-1990s also marked the beginning of a process of rapid change in ownership structures within the industry. Barnes (2000) points out that prior to the 1990s the majority of domestic-based OEMs were either South African owned or owned under joint ventures with associated MNCs. He underlines the fact that since the mid-1990s there has been a change, in that all seven of the OEMs with production facilities in South Africa are now fully owned by the respective MNC parent companies. The seven MNC OEMs are as follows: headquartered in Germany, Bavarian Motor Works (BMW), Mercedes Benz (Daimler-Benz) and Volkswagen (VW); headquartered in the USA, Ford Motor Company (FMC) and General Motors (GM); and headquartered in Japan, Toyota Motor Corporation and Nissan Motor Company.

Changes in ownership were to be followed by radical changes in work and production organisation. These were largely driven by functional integration as implemented by the respective MNCs under globalisation of production. Functional integration in the automotive industry has largely been implemented through global production and management strategies. Part of this, as discussed in Chapters 3 and 4, are production systems that MNCs standardise across their production facilities worldwide, regardless of where they are actually located. The automotive MNCs' restructuring process does not begin and end with assembly plants; as discussed in Chapters 3 and 4, MNC OEMs also develop and restructure the supply production chain.

Unlike the automotive industry, other manufacturing industries in South Africa – for example, white goods (stoves, fridges, microwaves, washing machines etc.) and clothing and textiles – did not enjoy an industrial policy treatment like the automotive industry under MIDP and now APDP. They suffered seriously under the regime of rapid liberalisation, which became the dominant feature of market integration in the dominant form of globalisation (as discussed in Chapter 3). The new South African democratic government – controversially – also embraced liberalisation under a macroeconomic policy titled *Growth, Employment and Redistribution* (GEAR).

Although facilitated under the MIDP, the impact of liberalisation in the South African automotive industry has received much attention (e.g. Black 2009; Barnes 2002, 2007; Barnes & Morris 2007; and Masondo 2003). With the exception of Barchiesi (1997), Forrest (2005), Masondo (2003), Sitas (1983) and Webster (1985) much of the literature development in the automotive industry has tended to focus on industry competitiveness, with little attention paid to labour, particularly unions.

David Masondo (2003) looks at trade liberalisation and work restructuring in post-apartheid South Africa, using BMW as a case study. He reveals the nature of the workplace regime that emerged at BMW in the post-apartheid period and in the context of the drive for competitiveness. He finds the existence of a number of institutional forums that BMW has put in place to provide for worker participation in work organisation. These include: the Scheduling Committee; Suggestion Schemes; Quality Circles; a Joint Committee, inclusive of management and NUMSA shop stewards; and even the use of production teams (which are common under lean production in-plant work organisation). The objectives of these structures include soliciting worker views, skills and abilities to the benefit of the company.

Masondo (2003) finds that restructuring of the workplace regime at BMW has led, among other things, to what he calls ideological flexibility. This includes strategies for identifying workers as 'associates', which can have the effect of making them feel at one with the company. However, he also finds that to some degree there is, among workers, a lack of confidence about the institutional mechanisms that the company has put in place. Ensuring that workers identify themselves with the company's objectives appears to be overwhelming their meaningful involvement in work organisation. Masondo (2003) further finds that there are generational tensions in the workforce. With regard to the white goods industry, Webster et al. (2008) find the same.

At BMW, the generational tensions correlate with the introduction of new technology and subsequent changes in work. In turn, this is associated with increased demand for higher level skills, which are said to be possessed mainly by younger workers.

In line with Franco Barchiesi (1997, 1998), Masondo (2003) too finds that there is increased flexibility in the automotive industry. Barchiesi (1998) concludes that collective worker organisation is faced with the challenge to identify contents, structures and languages to bring together multiple strands of contestation. This is pertinent for the present study. In Barchiesi's view, further research is necessary, to look at the ways in which workplace strategies of resistance are still relevant for factory working class solidarity that is undoubtedly weakened and fragmented by accelerated restructuring of production organisation.

This context, while briefly outlined, serves to locate the present study, which looks not only at assembly plant in-plant work and production organisation changes, but also at the activities between OEMs and the supply chain – with a consideration of labour and its responses.

Globalisation of production by MNCs has also meant increasing fragmentation of value-adding activities across geographic space and between companies. This seeks to resolve impediments to capital accumulation, but it does so by means of strategies that give rise to new bases for fresh impediments by creating new sources of power for unions. To this end, this study finds particularly Just In Time (JIT) to be a classic case. JIT constitutes the dominant logistical system upon which companies increasingly rely in connecting fragmented production stages and distribution. JIT has evolved to encompass a similarly vulnerable Just In Sequence (JIS). JIT and JIS are discussed in Chapters 4 and 5.

The phenomenon of geographically dispersed and fragmented value-adding production activities – in other words, globally outsourced production – makes the coordination of linkages between OEMs and their suppliers, and between these suppliers and their suppliers, one of the inherent and strategic features of the automotive industry value chain in its current state of development. The present study contextualises this in terms of the concepts of Global Commodity Chain (GCC) and the logistical revolution. Yet the

study comes across something that needs explaining: insourcing. What does it imply after the era of rigid outsourcing? This question is explored in Chapters 4 and 5.

1.3. Methodology

In looking at work and production changes in the automotive industry value chain and responses by labour, I selected BMW South Africa and a manageable sample of its suppliers: Venture, ZF Lemförder and Lear Corporation. BMW produces popular brands, especially among the youth in South Africa. As Masondo (2003) states, the company is recognised globally for the quality of its products. Chapter 4 shows that, in the case of BMW South Africa, these products are mainly exported to the USA.

The BMW South Africa assembly plant is situated next to Automotive Supplier Park (ASP) in the country's administrative capital, the City of Tshwane. This supplier park, in which Lear Corporation (one of the suppliers that form a focus in the present study) has a production facility, is one of the developments associated with the MIDP, but in addition has developed forms of production organisation such as lean production and its elements such as JIT.

As a focus of study, BMW South Africa offered another opportunity; namely, to draw a reflective comparison between NUMSA and the largest of its international fraternal unions *Industriegewerkschaft Metall* (IG Metall): the German industrial metalworkers' union. As discussed in Chapter 3, these two unions are the largest in the two countries' metal and related industries, have close ties and, together with BMW (both in South Africa and Germany) would provide greater access to labour and its perspectives.

As shown in Chapter 3, Germany is South Africa's largest trading partner in the automotive industry. This trade also takes place within MNCs such as BMW, both in terms of components and Complete Built Up (CBU) vehicles. For example, BMW's Rosslyn assembly plant produces one product series; it imports the rest, and, in this, BMW in Germany occupies a central role.

The study was conducted by employing the following methodological activities: a literature review; interviews; a research trip to Germany (which included interviews and presentations); and reflection on my own extensive involvement in the labour movement in South Africa, including work for NUMSA.

The literature review played an important role in the present study. This largely focused on relevant books, journal articles and research reports. I also looked at relevant reports from NUMSA and BMW South Africa, among others; and I made use of the Internet to access information from South African, German and global industry players, including industry associations. During the research process I also searched for automotive industry news in every academic/research paper and newspaper that I came across, and this contributed to formulating approaches regarding the next step.

In South Africa I held interviews with the executive director of the National Association of Automotive Component & Allied Manufacturers (NAACAM), Roger Pitot, and with one of South Africa's leading researchers and writers on the automotive industry, Justin Barnes. Other important interviews in South Africa included interviews with NUMSA shop stewards from Venture, ZF Lemförder and Lear Corporation. At BMW South Africa I held two sessions of interviews with NUMSA shop stewards; held a focus group with them; attended one of their consultation meetings with the representatives of hourly human resource management; and as this study (especially Chapter 4) reflects, I held important and invaluable (in terms of information) interviews with plant director Knudt Flor.

I originally planned to hold interviews with NUMSA national office bearers. However, given that, in my capacity as NUMSA national official based at the union's head office, I participated in meetings directly with national office bearers (or at least with some of them), I decided that such contact would suffice for the purposes of the present study. These meetings included two Central Committee (CC) meetings (the CC is the union's highest authority, meeting between four-yearly gatherings of the National Congresses or

NCs); a mini-NC; national and Gauteng regions' job security conferences; and meetings for the union's broader project on work and production reorganisation in the automotive and components industries.

During this period I was also appointed NUMSA's acting spokesperson, communicating to the public the union's perspectives, decisions and intentions, and announcing and defending its actions. Thereafter, the union appointed me head of Organising, Campaigns and Collective Bargaining (OCCB) and (on an acting basis) national coordinator for the automotive assembly and tyre manufacturing industries. This whole process provided more information than I would have been able to obtain in an interview.

Before being appointed a full-time union official in 2007, I was for just over seven years a trainee and worker in an automotive assembly plant, and a shop steward, as well as forming part of the union's automotive industry negotiation team to the National Bargaining Forum (NBF). My own experience in the automotive industry was thus important in this study as a point of reference.

As part of NUMSA's much bigger study on the automotive and components industries, conducted by the University of the Witwatersrand-based Society, Work and Development Institute (SWOP), I formed part of a research visit to Germany. In Germany I participated in interviews with and presentations by the BMW Regensburg-Wackersdorf Works Council. The Works Councils of BMW Regensburg assembly plant and Wackersdorf components supply plant had formed a joint Works Council. As is further reflected in Chapter 4, this came about as a result of the Wackersdorf components supply plant Works Council responding to pressures in the supply chain. When I returned from Regensburg I left a questionnaire behind, which was emailed back to me completed.

I attended interviews with and a presentation by Dr Detlef Gerst, sociologist and director of IG Metall's Work and Production Innovations Department. I also attended and had interactive sessions and interviews with Konrad Siegel, an IG Metall official who is

renowned as a German specialist in labour economics (International MTM Directorate 2005).

Further, during the German research visit I formed part of interviews with and presentations by the Works Councils of the VW components plant in Kassel, and the Daimler-Benz (Mercedes Benz) assembly and components plants in Rastatt and Gaggenau. Although VW and Mercedes Benz were not included in my case studies, I nevertheless obtained invaluable information from them. This I used in the background when analysing facts obtained from my case study and to develop judgments about the trends in terms of work and production changes in the automotive industry value chain and union responses.

1.4. Structure

This study is divided into five chapters.

Chapter 1 is the introductory chapter, reflecting briefly on the context of this study, and outlining the methodology and the structure.

Chapter 2 builds the theoretical framework in which this study is located. In this, *Capital* (Vol. I) by Karl Marx (1990/1867) occupies centre stage. To participate I enrolled under Stephen Shapiro (2008) as a student in *How to Read Marx's Capital*, in order to augment my previous interactions with the book. I draw on further references on Marx, among which the contribution of Eddie Webster (1985) is crucial.

In *Cast in a Racial Mould: Labour Process and Trade Unionism in the Foundries* Webster (1985) reflects on Marx so critically that it was difficult for me, as a student, to imagine adopting a similar approach. Yet I had to wrestle with the frustrating question: What new contribution will I make? It was the organic nature of Marx's theory, which he developed from the constantly changing reality, that got me started on analysing the labour process.

The basic theme that runs from Chapter 2 onwards is that the capitalist mode of production has inherent impediments, which it resolves – but only by means that in turn set up new impediments, thus providing workers with fresh grounds for renewing and redirecting their resistance to exploitation. This theme also influences the conclusions that I draw in Chapter 5 about weak links in the present automotive industry's superior mode of organising work and production.

Chapter 3 looks at the automotive industry generally, and the position and location of South Africa and Germany in particular in that industry. Chapter 4 moves from the general to the particular, what Marx (1990/1867) termed the hidden abode of production, where capital is not only producing, but is itself produced. In this study, this is our modern day workplace – the automotive industry's globalised world of work. Chapter 4 provides empirical evidence of both how capital is deepening the subordination of labour to capital and how, in turn, workers are resisting, using logistical power that capital gives them by virtue of JIT and JIS.

Another key theme, then, that runs through this study, is labour's resistance to exploitation; that is, labour's responses to changes in work and production organisation which deepen exploitation and labour's subordination to capital in the automotive industry.

Chapter 5 draws conclusions, partly through a reflective comparison of NUMSA and IG Metall. However, throughout, greater emphasis is placed on NUMSA, as the main focus of this study, in evaluating labour's responses to work and production changes in the South African automotive industry.

CHAPTER 2
THE CAPITALIST MODE OF PRODUCTION: THE LABOUR PROCESS AND CHANGES IN WORK AND PRODUCTION GENERALLY

This chapter looks at the theoretical foundations for an analysis of the labour process, in which I locate changes in work and production organisation.

2.1. The foundations for an analysis of the labour process, changes in work and production organisation

It is now 143 years since *Capital* (Vol. I) by Karl Marx (1990/1867) was first published. Nonetheless, the book remains non-inconsiderable. This arises mainly from the theories and concepts that Marx developed, as well as from his analysis of the underpinnings of the capitalist mode of production and changes within that mode of production with regard to work and production organisation. Marx's analysis of the labour process and the capitalist system of production remains fundamentally convincing.

In *Capital* (Vol. I) Marx laid the 'foundations for an analysis of the transformation of the labour process' (Webster 1985: 1). By the 'labour process' is meant human 'purposeful activity aimed at the production of use-values' (Marx 1990/1887: 290). By 'use-values' is meant products that are useful 'to supply the necessities, or serve the conveniences of human life' (John Locke 1777, quoted in Marx 1990/1887: 126). Under the capitalist mode of production, though, use-values largely take the form of a commodity, which Marx analyses in detail in *Capital* (Vol. I), particularly in Chapters 1–3, and then also in Chapters 4–5 (when dealing with money and capital), Chapter 6 (when dealing with the sale and purchase of labour-power as a commodity), and generally throughout the book.

According to Marx, use-value is the qualitative aspect of a commodity, with exchange-value as its quantitative aspect. Capitalist production is not primarily for meeting human needs. What capitalists want is the production of use-values only because, and in so far

as, they form the material substratum of exchange-value, and are the bearers of exchange-value (Marx 1990/1887). In this, capitalists have two objectives.

First, capitalists have the objective of subjecting workers to produce a use-value that has exchange-value, i.e. an article destined to be sold – a commodity; and second, they want that commodity to be greater in value than the sum of the commodities used to produce it, namely, the means of production and labour-power (Marx 1990/1887). In this way, the capitalist's aim is not only the production of 'a use-value, but a commodity; not only use-value, but value; and not just value, but also surplus-value' (Marx 1990/1887: 293). Commodity exchange leads to the value added during the labour process and thus surplus-value being realised, e.g. in money form.

The labour process has three simple elements, namely: '(1) purposeful activity, that is work itself, (2) the object on which that work is performed, and (3) the instruments of that work' (Marx 1990/1887: 284). Cognisant of the fact that the products of a human labour process are visualised first, accordingly, workers interface in this process with the instruments of labour in order to effect a purposeful alteration to the objects (materials) worked upon.

What is the fundamental reason for the labour process, or production in general? Marx (1990/1867) brings to our attention the fact that, in order not only to live but also to work, a human being needs the means of subsistence. 'Just as on the first day of his [/her] appearance on the world's stage, man [referring to a human being] must still consume every day, before and while he [/she] produces' (Marx 1990/1887: 272). Thus the production of the means to support human life – the fundamental reason for the labour process, or production in general – is at the same time the production of the material life itself (Marx 1972/1845, cited in Webster 1985).

Under capitalism, though, economic production largely takes place in the 'hidden abode of production' (Marx 1990/1887: 279–280) – the capitalist workplace where, according to Marx (1990/1867), capital is not only producing but is itself produced. This involves

the production and modes for increasing the rate of surplus-value. As such, capitalists constantly seek to introduce changes in the labour process in order to increase the rate of surplus-value. This is important to underline because changes in the labour process are either inextricably linked to or are simultaneously part of changes in work and production organisation, which are constantly pursued by capitalists for the same reason. As such, changes in work and production organisation cannot be considered in isolation from the labour process.

Webster (1985) finds Marx to have been successful in identifying the broad tendency of the capitalist system to transform the labour process. Marx's work 'remained largely unchallenged and, until the 1970s saw a rediscovery of the labour process, undeveloped' (Webster 1985: 6). Clarifying this point, Webster (1985) references Harry Braverman (1974). According to Braverman, Marx understood the tendencies of the capitalist mode of production and accurately generalised 'from the as yet meagre instances of his time', to the extent that decades immediately after completing *Capital* (Vol. I), 'Marx's analysis seemed adequate to each special problem of the labour process and remarkably faithful to the overall movement of [capitalist] production' (Webster 1985: 6). This fact is said to have contributed to dormancy in the study of the labour process among Marxists (Braverman 1974, cited in Webster 1985). For this present study, as this chapter particularly illustrates, Marx's work constitutes the central theoretical framework to the study of the labour process.

Braverman, argues Webster (1985), contributed much to the renewal of interest in the labour process; he took as his point of departure the link between capitalism and work; and his major contribution to the understanding of the capitalist labour process since Marx is his analysis of 'scientific management' – 'Taylorism'. I return to Taylorism along with other forms of work and production organisation in the automotive industry value chain as a matter of historical review.

However, there are particular omissions in Braverman's important contribution that links work and capitalism. Webster (1985) points to lack of an account of the way in which the

development of machine-based production has generated sources of leverage for effective workplace organisation; and neglect of the new bargaining power conferred on unskilled and semi-skilled workers when mechanisation replaces craft skill.

Webster (1985) then turns to Marx regarding the above point, worker resistance. 'Although class struggle is central to Marx's analysis of the transformation of the labour process, with the exception of Chapter 10 in *[Capital]* Volume I it is capital and not labour that is the central actor' (Webster 1985: 12). Webster references Harry Cleaver (1979), who suggests that what has led to the neglect of worker resistance in the labour process is to see in *Capital* [Vol. I] only abstract laws of motion 'in that it completely ignores the way working class power forces and checks capitalist development' (Cleaver 1979: 28, quoted in Webster 1985: 12).

Indeed in *Capital* (Vol. I) Marx raises the question of worker resistance for the first time in Chapter 10, which provides an account of the history of social and political conflict over the length of the working day. The establishment of the normal working day, writes Marx (1990/1867), was the product of a protracted and more or less concealed civil war between the capitalist class and the working class. This working class struggle was necessitated by capitalists' pursuit of absolute surplus-value. Marx (1990/1867) shows that capitalists were advancing a boundless and ruthless extension of the working day. According to Marx (1990/1867), the English factory workers were the champions in this battle, not only of the English, but also of the modern working class of his time in throwing down the gauntlet to the theory of capital. His account for this is that the contest takes place in the arena of modern industry, and that is why it was fought out first in the homeland of that industry – England.

'It is the English workers who against the pressures of overwork conducted a centuries-long struggle, going back to the fifteenth century, for laws that limited the working day' (Shapiro 2008: 90). While the English workers achieved successes in limiting the working day and securing legislative milestones, it is, according to Marx (1990/1867), American workers who, as a fruit of the American Civil War, won the eight-hour

working day, which the English working class had been unable to achieve (Shapiro 2008).

Yet, while Marx (1990/1867) raises the question of worker resistance in *Capital* (Vol. I) for the first time only in Chapter 10, he does not leave it there. Marx takes the question of worker resistance further. For example: in Chapter 15 of *Capital* (Vol. I) Marx (1990/1867) deals with machinery and modern industry (of his time) and worker responses to the introduction and use of machinery in production. Marx (1990/1867) also deals among other things with the struggle between worker and machine. He reflects on the numerous resistance struggles in which workers responded to the introduction of machinery in the labour process by directing their attack on it. 'In the seventeenth century nearly all Europe experienced workers' revolt against the ribbon-loom, a machine for weaving and lace trimmings' (Marx 1990/1887: 554). The outcomes include instances where machinery was destroyed, faced legislative restrictions or was prohibited, or was burned, and even cases of far reaching steps taken against some persons involved in inventions or innovations of machinery (Marx 1990/1887).

Marx (1990/1867) finds the struggle between the capitalist and the wage-labourer starting with the existence of the capital relation itself, and ranging throughout the period of manufacture. It is only since the introduction of machinery that the worker has fought against the instrument of labour itself, capital's material mode of existence (Marx 1990/1887). This fight broke out as a result of a variety of factors, including what Marx (1990/1867) identifies as the most immediate effects of machine production on the worker.

Capital appropriates supplementary labour-power. According to Marx (1990/1867), the instrument of labour strikes down the worker; and the direct antagonism between the two becomes most apparent whenever newly-introduced machinery enters into competition with handicrafts or manufactures handed down from former times. When capital appropriates supplementary labour-power, among other things work processes are

segmented into monotonous tasks that are left to the worker, who is rendered the appendage of the machinery. This involves de-skilling.

Further, machinery dispenses with muscle power. Marx (1990/1867) argues that this is used by capitalists to effect changes in the age and sex of the workforce, thus shifting to the employment of a younger generation of workers, including child labour and women – not intentionally for purposes of social transformation but for increased exploitation that involves the suppression of wage levels. In *Grounding Globalisation: Labour in the Age of Insecurity,* Webster et al. (2008) find that the shift to the employment of younger workers in the South African white goods (e.g. fridges) industry correlates with generational tensions between them and the older workers.

Capitalists also use machinery to prolong the working day; for example, by introducing the shift system, which adds on night and even weekend work. This is entrenched by the competitive struggle between the capitalists themselves, depreciation of machinery and the introduction of more effective new inventions. Basically, idling capital represents a cost to capitalists, a waste that must be avoided or eliminated.

According to Marx (1990/1867), the prolongation of the working day limits the time available to workers as social beings, which includes the time needed for rest, social interaction in communities and households, and intellectual development.

Last but not least, capitalists utilise machinery to intensify labour. Under capitalism the application of machinery is by no means intended to lighten workers' toil (Marx 1990/1887). Rather, capitalists employ machinery as one way of increasing the productivity of labour. This is intended to cheapen commodities by shortening 'necessary labour-time' and lengthening 'surplus labour-time' – that part of the working day during which workers' production results in surplus-value expropriated by the capitalists.

By necessary labour-time Marx (1990/1867) refers to the labour-time required to produce any use-value under the conditions of production normal for a given society and with the

average degree of skill and intensity prevalent at a given time; as well as that part of the working day during which workers work for themselves (Marx 1990/1887), carrying out production that results in the equivalent of the means of subsistence necessary to support their lives. The latter, in other words, relates to the production of commodities equivalent to wages. By surplus-value is simply meant the difference between the value of products (goods or services) and the value of the elements consumed in the production of such products, 'in other words the means of production and the labour-power' (Marx 1990/1887: 317).

Work intensification occurs in one way by decreasing the number of workers and redistributing the work of those that are affected among those that are retained. Capitalists also tend to reduce the workforce they employ by means of increasing the application of machinery. This contributes to the formation of or an increase in the industrial reserve army – the so-called surplus population or, simply, the unemployed. This is but a further example of capitalists using machinery as an instrument of class struggle to increase surplus-value.

Unemployment is crucial in keeping wages down and disciplining workers, asserts Webster (1985). For example, if unemployment is high, workers' struggles over wage increments are made to attract less sympathy, as they are portrayed as self-centred, while brutal competition for jobs leaves no mercy for those seeking decent wages.

Marx (1990/1867) sums up his reflection on workers' resistance against machinery by a note that it took both time and experience before they learned to distinguish between machinery and its employment by capital, and therefore to transfer their attack from the machinery to the form of society that utilises it; in other words, from fighting the enemies of their enemies to fighting the form of society that their enemies construct also by the use of machinery (Marx & Engels 2004/1848). Shapiro (2008) reads Marx as believing that labourers erred in not resisting the capitalist mode of production at an earlier point when it was less entrenched. In this sense, now when workers resist they often do so less to overthrow the system than to soften its hardest edges (Shapiro 2008).

Accordingly, 'struggles over wages within the manufacturing system presuppose manufacture; they are in no sense directed against its existence' (Marx 1990/1887, cited by Shapiro 2008: 131). This is not withstanding Marx's ultimate analysis of the contradictory nature of capitalist development generally (for example, in *Capital* [Vol. I], Chapter 32), which is that the overall class struggle between the capitalist class and the working class leads to the victory of the latter by challenging the whole structure of class exploitation and domination through broader political forms of action.

The '"optimistic" prognostication of the revolutionary potential of trade unions', writes Webster (1985: 10–11), without necessarily scrapping it completely from the map, has not been confirmed by subsequent developments. This is because, according to Webster (1985, drawing on Lane 1974), trade unions were to become the exclusive preserve of the aristocratic minority of privileged craft workers.

Yet the capitalist mode of production has inherent impediments, which it resolves – but only by means that set up new impediments, thus providing workers with fresh grounds for renewing and redirecting their resistance to exploitation.

For instance, writing in Chapter 15 of *Capital* (Vol. III) about the contradiction between extension of production and production of surplus-value (capital valorisation), Marx (1991/1894) argues that capitalist production constantly strives to overcome the immanent barriers that are embedded in this contradiction, but only by means that set up the barriers afresh on a more powerful scale; and that the 'true barrier' to capitalist production is 'capital itself'. Coupled with worker resistance to exploitation and broader working class struggles this basically explains Marx's theory of working class victory over the capitalist class.

In related analysis, Webster (1985) argues that capitalism's transformation of the labour process from one formation to another is able to overcome impediments in the old, but only by generating new impediments in the new. Flowing from this, he argues further that

optimistic interpretations of trade unionism cannot be rejected outright. Therefore, workers' resistance cannot be neglected in all of this. Thus any serious, holistic examination of changes in work and production cannot escape or neglect the question of union responses, and hence the present study.

What one finds important from Marx for purposes of the present study is not only the foundation that he laid for analysing transformations of the labour process – and in this regard the standing theories and concepts that he developed – but also the conclusions that he drew. In this, and directly related to the present study, for example, is the fact that 'the evolution of industrial capitalism provided the pre-conditions for collective organisation by throwing workers together in large numbers and creating deprivations which spurred them to combination' (Webster 1985: 10). Flowing from this is the further point made by Webster (1985), that Marx's analysis of the revolutionary role of the working class was not an article of faith but a materialist account of the contradictory nature of capitalist development.

I formerly referred to the point by Marx (1990/1867) that capitalist production is not merely the production of commodities but in essence is, by its very nature, the production of surplus-value. To return to the question of the two proportions of the working day, necessary labour-time and surplus labour-time, as pointed out, one way of increasing surplus-value is to increase surplus labour-time by curtailing necessary labour-time. Consequently, therefore, capitalists constantly seek to effect changes in the labour process, in how work is performed and together with production is organised. This is clearly presented thus:

> But when surplus-value has to be produced by the conversion of necessary-labour into surplus-labour, it by no means suffices for capital to take over the labour process in its given or historically transmitted shape, and then simply to prolong its duration. The technical and social conditions of the process and consequently the mode of production itself must be revolutionised before the productivity of labour can be increased. Then, with the increase in the productivity of labour, the

> value of labour-power will fall, and the portion of the working day necessary for the reproduction of that value will be shortened. (Marx 1990/1887: 432)

Writing about the labour process turned into a process whereby capitalists consume labour-power, Marx (1990/1867) emphasises two facts. First, workers work under the control of the capitalists who own labour-power by buying it. By selling their labour-power to the capitalists, workers also part with its use in the same way as the use of any other commodity belongs to its purchaser. With the use of labour-power belonging to them, capitalists basically want it to be used to perform work in a proper manner, ensuring that 'the means of production are applied directly to the purpose, so that the raw material is not wasted, and the instruments of labour are spared, i.e. only worn to the extent necessitated by their use in the work' (Marx 1990/1887: 291). Second, the commodities produced belong to the capitalists and not their immediate producers, the workers (Marx 1990/1887). Thus from the point of view of the capitalists, writes Marx, the labour process is nothing more than the consumption of labour-power, which can occur only by adding the means of production to it.

All of this, however, it is important to emphasise, does not take place in a vacuum, but rather in a situation of unity and conflict of opposites. There is a degree of cooperation between workers and capitalists, each one for their own interests, as Marx (1990/1867) argues, in a situation that involves conflict arising out of their contrasting interests and the ways in which these translate into the labour process and influence the general societal relations.

On the one hand, workers own no means of production of their own, as a result of historical struggles during which they were divorced from ownership and control of the means of production, but are dependent on selling their labour-power for wages in order to live. By labour-power, Marx (1990/1867) refers to labour-capacity, or capacity for labour – the aggregate of those mental and physical capabilities existing in a physical form in a human being, who sets them in motion whenever producing a use-value of any kind. On the other hand, capitalists want, and constantly seek ways by which to increase

the rate of, surplus-value, which is set in motion for capital accumulation. Wages, which workers seek to increase, represent their income but a cost for capitalists; this is the basic source of conflict between them (Webster 1985).

Marx (1990/1867) defines the rate of surplus-value that can be increased by curtailing the necessary labour-time and altering the respective lengths of the two components (necessary labour-time and surplus labour-time) of the working day, as 'relative surplus-value'. As also discussed, capitalists can increase the rate of surplus-value by lengthening the working day. This he calls, as touched on earlier, absolute surplus-value.

According to Marx (1990/1867) the production of absolute surplus-value turns exclusively upon the length of the working-day, while, the production of relative surplus-value revolutionises the technical processes of labour. Absolute surplus-value and relative surplus-value are, however, interrelated (Marx 1990/1867). For example, central to the revolutionising of the technical process of labour as driven by the capitalists, is the objective of curtailing necessary labour-time by extending surplus labour-time during which workers produce surplus-value exclusively for accumulation by the capitalists. Marx (1990/1867) finds that once the capitalist mode of production has become the established and universal mode of production the difference between relative surplus-value and absolute surplus-value is felt whenever the rate of surplus-value has to be increased

From Marx (1990/1867) it can be seen that faced with impediments to prolonging the working day, capitalists were compelled to focus within the fixed working day in order to raise the rate of surplus-value; hence a shift from absolute to relative surplus-value. Impediments to prolonging the working day include physical and social limits and moral obstacles. For instance, notwithstanding the fact that capitalists constantly seek ways to undermine this achievement, workers have successfully resisted the prolongation of the working day and ensured that it is fixed. In terms of physical and social limits and moral obstacles, Marx (1990/1867) highlights the fact that within 24 hours of a natural day workers can only expend a certain quantity of vital force, while also needing to rest and

sleep, feed, wash and clothe themselves and, as touched upon earlier, satisfy their intellectual and social requirements.

Thus the motive among capitalists for raising the rate of surplus-value and the competitive struggles between them for the maximum surplus-value have, among other factors, resulted in major transformations in the labour process and the way in which work is performed and together with production is organised generally. Marx (1990/1867) identifies and looks into three phases of such transformation, namely, cooperation, manufacture and machinofacture (machinery and large-scale industry). Table 2.1 depicts these phases in terms of Chapters 13–15 of Marx's *Capital* (Vol. I). Just as the bid to prolong the working day met with impediments and capitalists were compelled to devise means within a fixed working day to raise the rate of surplus-value, so too each of the three phases identified by Marx (1990/1867) are, writes Webster (1985), 'characterised by a series of impediments to accumulation which are overcome by a transformation of the labour process' (1985: 2), but, as stated formerly, only by means that in turn set up new impediments.

Table 2.1: Historical phases of work and production changes under capitalism

Period	Dates	Mode of value creation	Method for creating surplus-value
Era of Handicrafts:	15th c.–mid-16th c.	Absolute surplus-value:	Lengthening of the working day
Era of Manufacture:	Mid-16th c.–18th c.	Relative surplus-value:	Cooperation; specialised labour
Era of Industry:	Last third of 18th c.–1860s	Relative surplus-value:	Machinery (automation); large-scale industry

Source: Shapiro (2008: 116)

According to Marx (1990/1867) the starting point of capitalist production – cooperation, both historically and logically – first occurs when individual capital employs simultaneously a comparatively large number of labourers to produce the same sort of commodity; and, consequently, when the labour process is carried out on an extensive (i.e. large) scale under the command of the capitalist and yields relatively large quantities of products. In this way, formal subordination of labour to capital is constituted. Transformations in the labour process and, along with them, the reorganisation of work and production, lead to real labour subordination to capital, which increases throughout the phases that Marx (1990/1867) identifies.

Using these phases as a reference point, real subordination reaches its zenith in the era of machinery and large-scale industry. Real subordination is achieved 'on the basis of a series of linked and mutually interdependent developments: the extraction of relative surplus-value; the employment of machinery; the conscious application of science and technology; the mobility and replacement of labour (the formation of the reserve army of labour); and large scale production' (Brighton Labour Process Group, summed up in Webster 1985: 9). Webster (1985) also writes that real subordination is, however, never complete. He points out that in calling capital due to labour-power (wages, for instance) 'variable capital', Marx made it clear that surplus-value is not determined in a mechanical way; and that, if powerful enough, employers can increase surplus-value; while, if strong enough, workers can vary it.

Cooperation therefore constitutes, according to Marx (1990/1867) read holistically, not only the starting point of capitalist production but also – on a concentrated basis – of the accompanying social relations such as worker resistance, which are also directed at influencing the variations of variable-capital and surplus-value.

In terms of work and production organisation, cooperation can hardly be distinguished in its earliest stages from the earlier handicraft trades era, except by the greater number of workers simultaneously employed by the same individual capital (Marx 1990/1887). As

illustrated in Table 2.1, absolute surplus-value is the mode of value creation that characterised the emergence of cooperation.

While cooperation is able to overcome some of the impediments (Webster 1985) characterising the handicraft era, it also creates the potential for resistance to capital as the number of cooperating workers increases (Marx 1990/1887). In this, 'the control exercised by the capitalist is not only a special function arising from the nature of the social labour process, but it is at the same time a function for the exploitation of a social labour process, and is consequently conditioned by the unavoidable antagonism' (Marx 1990/1887: 449) between the capitalist and workers. This antagonism is inherent 'in the nature of capitalism where the driving motive is maximisation of surplus-value' (Webster 1985: 3).

Cooperation laid the basis for, and was followed by a transformation of work and production organisation to, the phase of manufacture. As reflected in Table 2.1, according to Marx (1990/1867) manufacture extends roughly 'from the middle of the sixteenth century to the last third of the eighteenth century' (Shapiro 2008: 105). Arising out of cooperation, manufacture necessarily develops and entrenches division of labour. To illustrate this fact, Marx (1990/1867) looks at the production of carriages. He writes that carriages were formerly a product of a great number of independent craft workers but that under manufacture all these craft workers are assembled in one building where the unfinished product passes from hand to hand, one stage to another in a flow of segmented work organisation. Consequently, this leads to de-skilling as handicrafts are decomposed into their different partial processes (Marx 1990/1887). This generates another feature of manufacture.

Out of decomposed handicrafts, capitalists recruit labourers to perform smaller segments of a process that makes a commodity (Shapiro 2008). On the one hand, the skilled craft workers, artisans, in this way find their trades undermined; on the other, the addition of more and more semi-skilled and unskilled labourers associates them both socially and organisationally. Thus the transformation of work and production organisation from

cooperation only gives rise to new impediments to the production and accumulation of surplus-value, which under manufacture increasingly takes the form of relative surplus-value (see Table 2.1).

Marx (1990/1867) then turns to machinery and large-scale industry (machinofacture), which represents a shift from manufacture as a result of its impediments to the capitalist's pursuit of maximum surplus-value. Marx's (1990/1867) distinction between manufacture and machinofacture in terms of the transformation of work and production organisation is that the former takes as its starting point, labour-power, while the latter takes as its starting point, the development and application of the instruments of labour.

In treating the subject of worker resistance in the labour process, I earlier reflected on Marx's analysis of the impediments that emerge with the increased application of machinery and the forms of worker resistance necessarily arising as a result.

Machinofacture intensifies relative surplus-value (see Table 2.1) and leads to the transformation of the production process to the initial phases of our modern day industry, which is characterised by automaton: 'the name Marx (1990: 502) gives for a "system of machinery" as soon as it becomes a conglomerated, "self-acting prime mover"' (Shapiro 2008: 121). According to Marx (1990/1867) the automaton becomes all the more perfect, the more the production process as a whole becomes a continuous one whereby the raw material is effected in its passage from the first phase to the last not by the hand of the worker, but by the machinery itself.

Marx's distinction between the eras of manufacture and machinofacture (in its developed form, the era of the automaton) is basically that in the former, the isolation of each special process is a condition imposed by the division of labour itself; whereas in the latter, the continuity of the special process is the regulating principle. Taking the distinction further, Marx (1990/1867) writes that in a fully developed factory, 'along with the tool, the skill of the worker in handling it passes over to the machine' (1990/1887: 454). The latter is unlike in the case of manufacture, where the worker handles the tool.

'This increasing reliance on machinery ultimately makes all the factory's workers equal, since it erases the hierarchies of skilled and unskilled labour' (Shapiro 2008: 129) that characterise manufacture.

2.2. Changes in work and production organisation: our modern day automotive manufacturing industry in historical perspective

Our modern day automotive industry reflects the state-of-the-art automaton. This applies both to automotive assembly and components manufacturing plants, with a few exceptions of labour-intensive production in the latter. In addition, the production process is continuous not just within plants, but also between assembly plants and components manufacturing plants, which supply the means of production (mainly in the form of discrete parts or components) to assembly plants. In this, logistics make up one of the critical elements that play an important role in the mode of production. Some historical reflection is required, with a consideration of where our modern day industry comes from in terms of changes in work and production.

In their study of the automotive industry, James P Womack, Daniel T Jones and Daniel Roos (1990) look at the industry's transformations in work and production organisation. In *The Machine That Changed the World: The Story of Lean Production* a key argument is that in order to become competitive the industry had to transform work and production organisation from craft production to a mass production regime and from the latter to lean production. All of these production regimes generally fall within the broad transformations of the labour process that Marx identified (see Table 2.1 and related reflections) and analysed, as well as the associated propelling motive – the production and increase in the rate of surplus-value.

When discussing handicraft production earlier, I reflected on its basic elements as articulated by Marx (1990/1867). The framework remains the same; for example, Womack et al. (1990) write that 'a craft producer[1] uses highly skilled workers and simple

[1] This presupposes a capitalist.

but flexible tools to make what the consumer asks for' (1990: 12–13). With respect to automotive vehicle production specifically, Womack et al. (1990) argue that under craft production, the following applied:

- Most parts and much of the vehicle's design came from small design shops, with the system coordinated by an owner (entrepreneur) in direct contact with everyone involved (customers, employers and suppliers).
- General-purpose machines were the main instruments of labour, used for drilling, grinding, and other operations on metal or wood.
- There were very low production volumes (1 000 or fewer a year), of which only a few were built to the same design. In terms of quality, under craft production, few of the few automotive vehicles that did have the same design did not necessarily have the same dimensions, since craft techniques inherently produced variations.
- Goods produced by craft method, as automotive vehicles once were exclusively, cost too much.

Without looking at worker resistance, which is generally not given much (if any) attention in their work, Womack et al. (1990) conclude that the solution to these impediments within craft production was the development of mass production in the twentieth century.

According to Webster (1985) the emergence of mass production deepened the tendency towards greater control over labour by capital. Capital did not realise such levels of control under craft production. This constituted one of the impediments to accumulation.

The role that Henry Ford of Ford Motor Company (FMC) played in the development of mass production, otherwise known after him as *Fordism*, is widely acknowledged and analysed. Among others Webster (1985), Womack et al. (1990), Jarvis (1999) and Masondo (2003) reflect in varying degree and emphasis on mass production, which has 'mass consumption' as one of its elements. The latter arose out of cheapened prices of automotive vehicles as a result of higher productivity levels of mass (as compared to

craft) production; and, in the case of FMC, also out of comparatively higher wages. But how did mass production realise higher productivity?

The continuous assembly line played a significant role in mass production, in terms of both the social and technical organisation of work and production. Ford adopted Frederick Winslow Taylor's principles of what he called scientific management, otherwise known after him, as previously mentioned, as *Taylorism* (Jarvis 1999; Masondo 2003; Webster 1985). This was to make mass production successful, argues Jarvis (1999). Taylor's principles of scientific management can be summarised from Jarvis (1999: 24), Webster (1985: 7–8) and Womack et al. (1990: 30–37) as follows.

First, managers had to gather all the traditional knowledge that previously had been possessed by workers, and classify and tabulate this knowledge, reducing it to rules, laws and formulae. Webster (1985) calls this 'the dissociation of the labour process from the skills of the workers' (1985: 7). In the past, workers had kept this knowledge from employers, an act described by Taylor as 'soldiering' (Webster 1985). This was one of the impediments to the production of capital.

Second, brain and manual work had to be separated. Workers were left with manual work – according to Womack et al. (1990), they were to keep their heads down and think about other things. All possible brain work had to be removed from production lines, and be centralised elsewhere; for example, in a planning and layout department, as the responsibility of industrial engineers. Webster (1985) calls this 'the principle of the separation of conception from execution' (1985: 7). In all of this, according to Jarvis (1999), supervisors were tasked to exert discipline over workers.

Taylorism aside for a bit: Ford's moving conveyor not only created an enabling environment for uninterrupted production flow on a technical basis, but also facilitated a transformation in the technical conditions of production towards a technological revolution, in which increased use of machinery and automation play a significant role. The uninterrupted production flow and constant development of this automaton – as

Marx would call it – have a role in disciplining workers. For instance, about the moving conveyor, Womack et al. (1990) write that workers were to be 'relentlessly disciplined by the pace of the line, which speeded up the slow and slowed down the speedy' (1990: 31–32). Moreover, discipline over workers included treating them as being 'as replaceable as parts on the car' (Womack et al. 1990: 32).

The breakdown of skilled jobs, the entrenchment of repetitive tasks and increases in line speed by management contributed to the treatment of workers as being as replaceable on production lines as parts on the car, to work intensification, and to productivity. Linked with all of this, Womack et al. (1990) write that 'the complete, consistent interchangeability of parts [components] and the simplicity of attaching them to each other…were the manufacturing innovations that made the assembly line possible' (1990: 27).

To return to our summary of Taylorism: finally, managers had to plan the work of every worker beforehand, and reduce this to written instructions, describing the detailed tasks to be accomplished, and specifying work motions to detail and prohibit any deviations (Jarvis 1999; Webster 1985). In this, complex work is subdivided into classifications, each made of simplified, repetitive tasks, with time and motion studies conducted to set a time standard for each task (Jarvis 1999).

On the question of time, Ford is said (Beynon 1973, quoted in Webster 1985) to have put it thus: 'the ideal is the man [worker] must have every second necessary but not a single second unnecessary' (1985: 8). In terms of subdivision of complex tasks into classification, with each task simplified and repetitive tasks entrenched, for example, Womack et al. (1990) write that 'the assembler at Ford…had only one task – to put two nuts on two bolts or perhaps to attach one wheel to each car' (1990: 31). Decomposed skilled jobs and intensified division of labour necessarily reduced the duration of training for workers to a minimum. The latter, according to Jarvis (1999), was linked to another principle: the hiring of unskilled workers into subdivided classifications.

Years before conceiving of this study, I was trained under an apprenticeship system and thereafter worked in an engineering discipline in an automotive industry assembly plant, for a combined period of just over seven years. The empirical evidence gained from my personal experience confirms all of the above, notwithstanding a few changes that have taken place since the advent of Fordist-Taylorist production regimes – mass production in its developed form.

What is scientific about Taylor's 'principles of scientific management'? This is a question for fuller consideration elsewhere, but it is important to allow it to flow from a critical examination. Most of the things in the Taylorist regime, incorporated in a further developed Fordism, have been about capital exercising control (Masondo 2003; Webster 1985) in order to raise the productivity of labour, in turn to increase the rate of surplus-value, and therefore the production and accumulation of more capital. About this question broadly on the capitalist mode of production Marx (1990/1867) writes:

> Capitalist production is not merely the production of commodities; it is, by its very essence, the production of surplus-value. The worker produces not for himself [/herself], but for capital. It is no longer sufficient, therefore, for him [/her] to simply produce. He [/she] must produce surplus-value. The only worker who is productive is one who produces surplus-value for the capitalist, or in other words contributes towards the self-valorisation of capital. (Marx 1990/1887: 644)

For Marx (1990/1867), the above context makes it not a piece of good fortune but rather a piece of misfortune to be a productive worker. No wonder trade unions could have divided discourses on productivity engagements and collaboration.

As a result of improvements in the productivity of labour, writes Webster (1985: 8), by 1925 Ford had created an organisation that produced almost as many automotive vehicles in a single day as it had at first produced in an entire year. Womack et al. (1990: 29) record this to have reached a peak of 2 million similar automotive vehicles (Model T) a

year. Despite this productivity success, though, mass production generated its own impediments.

Mass production's exercise of technical control and transformation of the technical conditions of production in general, including constant development of what Marx called the automaton, linked together the relatively homogeneous labour – unskilled and semi-skilled workers (Webster 1985). As a result of this development, writes Edwards (1979, quoted in Webster 1985): 'when the line stopped every worker necessarily joined the strike. The combination proved to be exceptionally favourable for building unions' (1985: 13–14). According to Webster (1985), by increasing the proportion of workers strategically involved in mechanised production, the regime also increased the bargaining power of a large section of the workforce, and facilitated industrial unionism as a new form of unionism, or the mass-production union movement as Womack et al. (1990) call it in the case of the USA, and taking United Auto Workers (UAW) as an example.

This union movement was to take charge of coordinating workers' resistance to and engagement with capitalists. However, Womack et al. (1990) suggest that, in the case of the UAW, the union's 'leadership fully accepted both the role of management and the inherent nature of work in an assembly-line factory' (1990: 42–43). In this, the union's main issues were seniority and job rights. According to Womack et al. (1990) this union movement was called 'job-control unionism'. The question of seniority was, according to Womack et al. (1990), partly influenced by the cyclical nature of the automotive industry, which meant that companies would retrench workers during downturns. In such circumstances, the question of who would go and who would stay becomes important to workers. In the South African context this is institutionalised in such retrenchment criteria as Last in First Out (LIFO) and with skills retention.

On a daily basis unions play a role in facilitating worker responses to conditions of work and production, and in engaging companies on these issues. As key players, then, unions must be included when considering changes in work and production.

Another impediment to mass production lay, according to Womack et al. (1990), in mass production's organisation and coordination of production. They suggest that this applied particularly to the way in which mass production related to the manufacture and coordination of supplies of the means of production in the form of parts and components that go into the assembly of Complete Build Up (CBU) vehicles.

The bulk of the automotive vehicle production process 'involves engineering and fabricating more than 10,000 discrete parts and assembling these into perhaps 100 major components – engines, transmissions, steering gears, suspensions, and so forth' (Womack et al. 1990: 58). They argue that, under mass production, assembly plant companies – Original Equipment Manufacturers or OEMs – found it a challenge to coordinate this process so that everything comes together at the right time with high quality and low cost. This is among the reasons for the emergence of lean production and the logistical revolution.

Ford sought to achieve complete vertical integration – 'Do it all yourself in your own company' – while Alfred Sloan of General Motors (GM) advocated decentralised components production and supply divisions that functioned as independent profit centres – 'Do it all in your own company, but set up decentralised parts-making divisions as independent profit centres' (Womack et al. 1990: 138). Sloan, write Womack et al. (1990), 'had a solution to the problem of the cyclical car market as well: When the market slumps, lay off workers in the supply system just as you lay off workers in the assembly plant' (1990: 139). Continuing efforts by Ford to overcome the impediments of components manufacture and supply led to FMC in the 1950s shifting to an 'arm's length' approach to production and components supply: placing out to bid components that were formerly supplied from within (Womack et al. 1990). In this, suppliers were given detailed drawings and asked for prices per part; the lowest bidder generally won a one-year contract. This led to an attack on wages in the supply chain. According to Womack et al. (1990) these suppliers were laid off in the form of cancelled contracts when the market slumped, just as workers were.

Womack et al. (1990) find that in the 1980s mass production automotive companies around the world were using both of the approaches developed by FMC and GM. In this, the latter was the most integrated, with about 70 per cent of the parts in each car and truck supplied by in-house parts divisions. According to Womack et al. (1990), the mid-1980s saw many OEMs outsourcing the production and supply of parts, and in the USA the UAW resisted this change in production organisation. They argue, however, that a competitive consideration is not whether parts come from inside or outside an OEM, but how it works together with its suppliers.

The resistance of unions depending on context notwithstanding, the industry as it stands today reflects a web of what Gary Gerreffi (1994) would in his 'Global Commodity Chain' (GCC) analysis call producer-driven commodity chains. In this, OEMs wield power. The dispersal of production and reorganisation of the automotive industry value chain into supply tiers generally result from outsourcing. While this was an old phenomenon (Womack et al. 1990), the 1980s were to mark an era of heightened outsourcing, which carried on into the 1990s and 2000s. For instance, in South Africa cases of outsourcing still persisted at the time of this study.

The intense form of outsourcing in the automotive industry is called modular consortium. Robert Collins, Kimberly Bechler and Silvio Pires (1997) characterise a modular consortium as an outsourced production organisation where:

- the suppliers assume responsibility for modular assembly, the on-line final module assembly into the vehicle, an investment stake in the operation and the management of the module supplier chain; and
- the automotive manufacturer provides the plant and assembly line, and assumes the responsibility for plant coordination and final testing. (Collins et al. 1997: 499)

This is basically in-house outsourced production. Collins et al. (1997) looked at Skoda's facilities in the Czech Republic, and VW's truck and bus plant in Resende, Brazil, as part

of latest experiments with regard to a modular consortium approach. In a different but related study, Roberto Marx, Mauro Zilbovicius and Mario Sergio Salerno (1997) found that the modular consortium concept in VW's Resende plant was based on the transfer of all assembly operations to 9 first tier suppliers chosen from among 47 bidders. Collins et al. (1997) emerged from their study convinced that modular consortium was the route that the automotive industry would take.

Justin Barnes (interview), one of South Africa's leading writers on the automotive industry, argues that final assembly plant companies have for the most part not shifted in the direction of modular consortium; and that this is because the Toyota Production System (TPS), called lean production by Womack et al. (1990), is still proving a superior way of organising production. Further, Barnes points out that a modular consortium has greater risk exposures, for example, in terms of investment and the quality of the production process. From his experience of working in the South African automotive industry, Barnes holds that it is not only OEMs that have increasingly moved towards the adoption of lean production (or at least adapting elements of lean production for inclusion in their production systems), but that suppliers too are progressively doing the same. In terms of suppliers, he argues that there are companies in South Africa that already have certain 'world class' lean production elements although there are very few of them that can be said to be holistically 'world class' in lean production standards generally.

Coupled with lean production, the shift from mass to flexible production partly contributed to the emergence of what Bonacich and Wilson (2008) call the logistics revolution. This general shift away from a mass to a flexible production regime was to offer consumers greater product variety.

However, as with all other transformations in the labour process, or changes in work and production organisation generally, that have been and are being driven by capitalists, at the centre of the shift from a mass to a flexible production regime lies the same motive that Marx exposed and articulated: the production of and increase in the rate of surplus-value for the sake of increased capital accumulation.

Lean production emerged and gradually developed after World War II Japan's ascendance to a position of economic significance (Womack et al. 1990); and with the general 'rise of Japanese companies in [the] 1960s, and their rapid achievement of "best practice" status [which] was premised both on an update and an innovation of the Fordist-Taylorist processes' (Barchiesi 1997: 44). Of the Japanese companies, Toyota developed lean production as an alternative to the capital accumulation impediments of the mass production regime; and this, argue Womack et al. (1990), has contributed significantly to the company's success so far in the competitive struggle.

Lean production effected changes in work and production organisation, not only in the assembly plant but also down the value chain in the supply linkages. Increasingly, lean production – or at least elements thereof – has been or is being adopted not only in the automotive industry value chain but across industries and borders. It has become one of the non-inconsiderable global production regimes.

Womack et al. (1990) called it 'lean' because, compared to mass production, its orientation is unceasingly to use less of everything required in production. This includes, for example, less of the workforce, as well as fewer supplies, fewer engineering hours to develop a new product, and less inventory (which it seeks to eliminate), manufacturing space, investment in tools and etc. (Womack et al. 1990). According to Womack et al. (1990), again compared to mass production 'which sets a limited goal – "good enough", which translates into an acceptable number of defects; a maximum acceptable level of inventories; [and] a narrow range of standardised products' (1990: 13), lean production aims for perfection: continually declining costs, continuous and incremental improvement (*kaizen* in Japanese), zero quality defects, and identification and elimination of waste – *muda* in Japanese.

Lean production does not aim only at manual labour, which mass production separated from brain work. Instead it also targets brain work in all categories of workers. Lean production sets up in-plant structures and ways to gather workers' suggestions on a

continual basis (for example, as reflected in Masondo 2003); these suggestions are filtered down, with those that stand to benefit the company being selected. These structures and approaches include grouping workers into production teams with a team leader rather than a foreman (Womack et al. 1990).

In terms of components manufacturing and supply, lean production OEMs keep closer contact with their suppliers, for instance, by maintaining equity stakes in some if not most or all of their suppliers; these suppliers in turn have cross holdings in each other (Womack et al. 1990). This phenomenon partly contributes to making up what in Japanese is called *keiretsu* (original emphasis) (Womack et al. 1990). The selection of suppliers in this context is thus based on long-term relationships and profit share (Womack et al. 1990).

It is in that way that lean production OEMs involve their suppliers in product development and facilitate the sharing of information between them, as opposed, argue Womack et al. (1990), to mass production, where suppliers do not have to share information because this might jeopardise each one's competitiveness. Lean production reorganises production down the value chain into 'supplier tiers': first tier suppliers, second tier suppliers, third tier suppliers and so on. All suppliers from second tier suppliers backwards are mainly suppliers of suppliers in the value chain. Chapter 4 looks at this further and uses the case of BMW South Africa as an example to sketch a picture of a typical automotive industry value chain.

Comparing mass production to lean production, Womack et al. (1990) argue that the latter uses fewer suppliers than the former. However, the reduction of suppliers under lean production can occur in such a manner that it potentially negatively affects labour. This might occur due to loss of contracts leading to job losses and a decline in union membership, a problematic that Womack et al. (1990) do not unpack.

While maintaining a drive for constant in-plant changes in work and production organisation to increase the rate of surplus-value, OEMs have thus moved beyond this to

using the supply chain to maximise surplus-value. On this subject, Bonacich and Wilson (2008) write that under the logistics revolution the supply network has become an important unit of competition.

By the logistics revolution Bonacich and Wilson (2008) are referring to the coordination of the entire supply chain, which encompasses design and ordering, production, transportation and warehousing, sales, redesign and reordering. The strategic objective of the logistics revolution in both the backward and forward linkages of a value (commodity) chain is to have the inventory needed 'in terms of both quantity and the mix of goods' at the specified time in order that a company 'can avoid the twin dangers of overstocks and under-stocks' (Bonacich & Wilson 2008: 3–4). This has firmly positioned Just In Time (JIT) – an element of lean production – as among the central governance instruments in the automotive industry value chain.

The logistics revolution is correlated with, among other things, changes in the character of production, which affect workers and their unions; and generally, as touched upon earlier, a shift from a mass to a flexible production regime (Bonacich & Wilson 2008). The authors reveal the direction that changes in work and production organisation take under flexible production. They argue that flexible production encompasses a wide range of changes in the production process, which include contingent production and, as also already mentioned, outsourcing or contracting out. Barchiesi (1997) has an important addition to this (drawing on Sethi & Sethi 1990) on what flexibility further implies for workers. Flexibility as a concept, he writes, 'emphasises workers' capacity to adapt to rapidly diversifying production requirements responding to short-time market fluctuations, operating on multiple tasks and activating self-inspection and communication with upstream phases of the process' (1997: 3).

Bonacich and Wilson (2008) argue that outsourcing is correlated with offshore production. In terms of this, once firms begin to outsource production, there is no need to keep it closer; seeking the cheapest labour and having it produce under oppressed conditions become competitive activities. Linked to this, in terms of the South African

automotive industry, Barnes (2000) highlights the fact that with the adoption of the Motor Industry Development Programme (MIDP) and with global integration, South African OEMs were no longer compelled to procure components locally, as in previous schemes in line with the requirements regarding local content. Rather, OEMs in South Africa could now engage in offshore component procurement. In this way, global integration posed a challenge not only to local component manufacturing but also to workers in the supply chain, as OEMs' activities governing the supply chain forced suppliers to adopt ways by which they might survive the competitive struggle.

The challenge posed to workers by offshore production (and, in fact, all other outsourced production) notwithstanding, the geographic dispersion of production and, similarly, the fragmentation of value-adding activities between companies, do provide unions with new sources of power. Webster et al. (2008) present a summary of sources of power provided to workers in advancing their resistance to exploitation. For the purpose of the present study it suffices to highlight three: associational power, structural power and logistical power. By centrally assembling large numbers of workers to carry out production, capital constitutes a source of both associational power and structural power. Associational power results from the formation of collective organisation such as a union, and structural power results from the location of workers in the economic system (Webster et al. 2008). Further, structural power is subdivided into subtypes.

Webster et al. (2008) reference Erik Olin Wright (2000) to identify these subtypes of structural power: market bargaining power and workplace bargaining power. The former results from tight labour markets, the latter from the location of a particular group of workers within a key industrial sector (Webster et al. 2008). Another source of structural power is located in logistics systems, and this is referred to as logistical power (Webster et al. 2008). The spatial fragmentation of production and the segmentation of value-adding activities between OEMs and suppliers provide unions with sources of logistical power. In this respect, the present study points to the vulnerabilities inherent in JIT and JIS as such sources of logistical power available to unions as stated in Chapter 1, this is further discussed in Chapter 4.

CHAPTER 3
THE AUTOMOTIVE INDUSTRY IN GENERAL: THE LOCATION AND POSITION OF SOUTH AFRICA AND GERMANY

This chapter looks into the automotive industry in general and the positions in it of South Africa and Germany. As reflected in Chapter 1, the case studies of this present study in terms of both companies and unions fall within these countries of the South and the North respectively.

3.1. The 'industry of industries' in transition

In *The Concept of the Corporation* Peter Drucker (1946) conceptualises the automotive industry as 'the industry of industries'. This has since received much attention in analyses of the industry's value chain.

In Chapter 1 of *The Machine That Changed the World: The Story of Lean Production*, Womack et al. (1990) draw upon Drucker (1946) to begin their analysis of the automotive industry as 'the industry of industries in transition' (1990: 11). In this, the transitional nature of the automotive industry is located in the context of a constant change in the labour process, within and between assembly plant companies (Original Equipment Manufacturers, or OEMs), suppliers and countries. Connected to this is the automotive industry's enormous influence over other industries, and significant contribution to the position of countries in the world economy.

Womack et al. (1990) find the automotive industry's leading role in effecting changes in work and production organisation transcending other industries within and across borders by way of being emulated.

With regard to the economic position of countries in the world economy, Barnes (2008) points out that the other reason why the automotive industry is considered the industry of industries is largely because it has been the bedrock of the manufacturing industry in the

USA, Japan and various parts of Western Europe[2] since the end of World War II. Linked to this, which is actually about the strategic importance of the automotive industry, Womack et al. (1990) suggest that the rise of the USA to dominance over the world economy after World War I, and Japan's rise to its current economic prominence, are both partly due to the leading role of these two countries' automotive industries in effecting changes in work and production organisation.

The US-based Ford Motor Company (FMC) and General Motors (GM) moved (automotive) production from craft to mass production, and Japan-based Toyota pioneered lean, flexible production. Both these changes were emulated in other industries within the US and Japan respectively, and in the automotive and other industries in other countries the world over. Increased labour productivity is among the other results of these transitions or transformations.

Considering the automotive industry as the industry of industries, Barnes and Hartogh (2009) make an important observation. In *KwaZulu-Natal Automotive Industry Strategy Report*, Barnes and Hartogh (2009) identify the automotive industry's 'multiplier effects into a wide range of other manufacturing- and service-related sectors' (2009: 6).

Indeed, the automotive industry's multiplier effects extend into retail, both of Complete Built Up (CBU) vehicles and of components (modules and discrete parts); finance; insurance; service stations and repair shops, including automotive body repairs; filling stations (fuel and oil) and so on.

In terms of components and other inputs that go into a CBU, we find among the obvious distinguishing features, design, colour and shape. We also come across, for example, glass and wheels. Just from vehicles' appearance therefore (before getting inside or underneath, or opening boot and bonnet), one can begin to identify the industries that are involved in the production and reproduction of automotive vehicles. This would include

[2] In terms of Western Europe, I later draw reference from quantitative data to illustrate the point that Germany is the central player.

the following industries: paint production; glass production; iron and steel production; metals engineering; and tyre manufacturing. The many other components and features will, when considered, expand this list further. Linked to this, in *A Commodity Chains Framework for Analysing Global Industries*, Gereffi (1999) cites important quantitative data from Hill (1989): 'In the 1980s, the average Japanese automaker's production system, for example, contained 170 first-tier, 4,700 second-tier, and 31,600 third-tier subcontractors [suppliers]' (Gereffi 1999: 1).

Another intervention in looking at the automotive industry as the industry of industries comes from Timothy Sturgeon and Richard Florida (2000). In *Globalisation and Jobs in the Automotive Industry*, Sturgeon and Florida (2000) find that the automotive industry is,

> an industry in profound transition: from an older 'domestic' model of competition that allowed automakers to compete by exporting from supply-bases rooted in their home countries, to an emerging 'global' model of competition that increasingly demands day-to-day production functions be organised on a regional and global basis; from an industry that once treated emerging markets as dumping grounds for old models and production equipment, to an industry that is building leading-edge productive capacity in far-flung corners of the globe; from an export-led industry where firms from different countries competed mainly through markets, to a network-led industry with each major firm producing within each major market. (Sturgeon & Florida 2000: 92)

While dealing with many other aspects of work and production organisation and markets with reference to the automotive industry, the findings of Sturgeon and Florida (2000) can also be located in the automotive industry's economic geography in relation to the distinction and interrelationship between internationalisation and globalisation.

3.2. The automotive industry, internationalisation and globalisation

According to Dicken (1998), 'internationalisation processes involve the simple extension of economic activities across national boundaries' (1998: 5). As such, internationalisation 'is, essentially, a quantitative process which leads to a more extensive geographical pattern of economic activity' (Dicken 1998: 5). On the other hand, globalisation processes 'involve not merely the geographic extension of economic activity across national boundaries but also – and more importantly – the functional integration of such internationally dispersed activities'. In this way, globalisation is 'qualitatively different from internationalisation' (Dicken 1998: 5). This notwithstanding, the two are interrelated in terms of world-scale geographic spread of economic activity and, according to Dicken (1998), they also coexist. Nevertheless, functional integration of geographically dispersed economic activities (e.g. production of goods and services) makes globalisation more recent than internationalisation (Dicken 1998).

Gereffi (1999) argues in general terms that internationalisation 'has been a prominent feature of the world economy since at least the seventeenth century when colonial empires began to carve up the globe in search of raw materials and new markets for their manufactured exports' (1999: 1). 'Firms internationalise when they invest in new offshore production capacity that is discrete from domestic capacity' (Florida & Sturgeon 2000: 20). Florida and Sturgeon trace internationalisation in the automotive industry to the 1800s: 'Production of German Daimler motor cars began under licence in France in 1891; Coventry, England in 1896; and New York City [USA] in 1907' (Sturgeon & Florida 2000: 21).

Sturgeon and Florida (2000) cite GM's investments in Europe as being a good example of the early internationalisation. In this, GM's operations 'began with acquisitions of local firms (Opel and Vauxhall) that continued to develop, manufacture, and sell a set of products that were almost completely distinct from those developed and produced by the parent company's home operations' (Sturgeon & Florida 2000: 20). GM established its first production facility outside the USA in 1907 in Canada, only a year after its

founding, following FMC, which had done the same in 1904. Womack et al. (1990) highlight another consideration in terms of FMC. By 1926, FMC was assembling automotive vehicles in more than 19 foreign countries; and by the early 1930s, the company had established 3 fully integrated manufacturing systems – in England, Germany and France: these produced special products for national tastes, while being run by native managers who tried to minimise meddling from the company's headquarters in Detroit, USA (Womack et al. 1990: 34–35). Compared to this early internationalisation, Multinational Corporations (MNCs) allow no, or are limiting, space for disintegrated management and production strategies of their geographically dispersed production facilities under globalisation.

In dealing with the distinction and interrelationship between internationalisation and globalisation, Sturgeon and Florida (2000) suggest that interaction between the two leads to globalisation surpassing internationalisation. Within MNCs this is particularly so when they have presence within each global region – which could simultaneously represent a regional trading bloc. This is linked with the *saturation* of presence in each global region and the exploitation of market opportunities provided for by intra-regional trade regimes, as defined by common market policies. To some extent, the latter reflects the world that is characterised by regionalism and therefore in this context not yet fully globalised.

The driving factors of internationalisation and globalisation include political action. This involves, for example, tariff structures, including import duties (Dicken 1998; Sturgeon & Florida 2000; Womack et al. 1990). In order to gain access to strategic markets, OEMs have been compelled, as discussed, to establish production facilities offshore. For instance in this way, according to Sturgeon and Florida (2000), restricted trade leads to globalisation in the sphere of production; those authors contrast this with globalisation in the sphere of markets, which, they argue, is driven by free trade, in other words, trade liberalisation. As such, their suggestion is that it seems that state policy can only be effective in choosing which aspect of globalisation will advance the fastest: markets or production.

In terms of production, in the automotive industry OEMs' globalisation strategies have led to, among other things, the emergence of global suppliers (Sturgeon & Florida 2000; Veloso & Kumar 2002), and according to Veloso and Kumar (2002), to larger suppliers that are, however, smaller in number. Linked to this is the emergence of monopolisation in the supply value chain as in the final assembly operations. This is driven largely by consolidations, mergers, acquisitions and joint ventures.

Another driver of monopolisation – especially in the supply chain – is identified by Ron Blum (2009) and Womack et al. (1990) in looking at lean production. Within their global production strategies, OEMs have been pushing to reduce the number of their own direct suppliers, which are mainly first tier suppliers. These suppliers, which have assumed increased responsibility – including coordination of their supply chains as a result of outsourcing by OEMs – have at the same time been tightening their rationalisation of production facilities, and have also, at the same time, been further reducing their own suppliers. Thus OEMs' and suppliers' contract awarding strategies and selection criteria contribute to monopolisation in the automotive industry value chain.

In terms of globalised MNCs there has been standardisation (as driven by functional integration) of other measures such as cost cutting that contribute to internal rationalisation by both OEMs and suppliers. According to Blum (2009), in the two decades preceding the 2009 crisis within the global capitalist system, 'the industry's map and its workforce encountered unprecedented change as emergent countries fully incorporated into the global market system' (2009: 19). In this, employers continually pushed cost cutting measures, not only through increased productivity of the workforce and more efficient methods for designing and building vehicles, but also through outsourcing, subcontracting and substituting of precarious for permanent work (Blum 2009). Located in this context, for example, are changing forms of employment – to flexible, mainly insecure, forms of employment such as Short Term Contracts (STCs) and employment by labour brokers – which are also tied to increased market volatility.

Blum (2009) links MNCs' global production strategies to what he calls a mix of fundamentalist policies, the financialisation of economic activity and rules of international trade and investment favoured by MNCs. Blum (2009) also charges that as part of this, MNCs' global strategies 'have tended to exert a general downward pressure on wages, conditions and social protections in many parts of the world'; and that, along with this, 'income and wealth inequalities have reached extremes not seen since the 1920s, moving the world in a direction opposite to authentic sustainable development' (2009: 19).

According to Sturgeon and Florida (2000), MNCs apply the low cost approach, particularly in terms of labour, even within the global regions, i.e. the trading blocs, where they invest. Strategies aimed at constantly lowering labour cost impact negatively on labour. In general terms (for instance, in terms of trade), the low cost approach finds among other things restricted trade as an impediment; restricted trade leads to higher cost in terms of, for example, prices of imported goods, which are viewed as being distorted by tariff structures including import duties. However, in the general relations of production and exchange, cost is also embedded in logistics, for example, transportation. According to Womack et al. (1990) transportation was a complex terrain in the past partly due to the nature of the heavy automotive vehicles required (Womack et al. 1990).

Thus, among the drivers of globalisation are contradictory considerations that confront capitalists as they seek to resolve established impediments to accumulation. After all, globalisation is not merely a neutral spatial process.

3.3. Neoliberal globalisation

In the present work I adopt Dicken's (1998) identification of functional integration of globally dispersed economic activities as globalisation's central and defining feature, while acknowledging that the term is highly contested, and therefore understood in various ways (although more often as a matter of economic interest than scientific analysis). There are, however, other similar references to the term globalisation, which

also have a fairly wide acceptance. Richard Peet (2003) summarises these references thus:

- Anthony Giddens (1990: 64): 'the intensification of world-wide social relations which link distinct localities in such a way that local happenings are shaped by events occurring many miles away'.
- David Harvey (1989: 240): people 'have to learn to cope with an overwhelming sense of compression of our spatial and temporal worlds'.
- Roland Robertson (1992: 8): 'the compression of the world and the intensification of consciousness of the world as a whole'.

To understand globalisation as not merely a neutral spatial process, and to understand the dominant form that it has taken at least since the 1970s, it is important to look at its principal underlining ideology – neoliberalism.

At the macro level, Peet (2003) defines neoliberalism as 'an entire structure of beliefs founded on right-wing, but not conservative, ideas about individual freedom, political democracy, self-regulating markets and entrepreneurship' (2003: 8); and as renewed nineteenth-century, especially British, 'classical' liberalism. In this context, Peet (2003) writes that 'the classical liberal past is remembered in the neoliberal present not merely as received wisdom, but also through a series of creative re-enactments that respond to changed circumstances' (2003: 8). One of the central policy obsessions in this regard is deregulation and privatisation of previously State Owned Enterprises (SOEs) (Peet 2003). Deregulation, along with liberalisation, has on a global scale been the driving force of globalisation in the sphere of the market (Sturgeon & Florida 2000).

Unlike liberalism's earlier reaction to mercantilism, neoliberalism emerged partly as a critical reaction to Keynesianism (Peet 2003) and also partly as a response to the 1970s crisis of the capitalist system (Bond 2009; Brenner 2009; Desai 2004), which was blamed by the right and the liberal school of thought on the interventionism that had followed both the 1929 and 1930s Great Depression and World War II.

Neoliberalism has thus attacked the role of the state in the economy. This has implied the introduction of policies such as slimlining of the state and, in addition to privatisation of SOEs, the outsourcing away from the state of functions considered the business of business, which is business. In addition, Peet (2003) suggests that neoliberal policies favour an outward-oriented export economy, organised through markets, trade liberalisation and limited budget deficits. Along with limiting budget deficits, neoliberal policy prescriptions, which have been globalised – or, more crudely speaking imposed, especially, on weaker countries without regard to national contexts – include cuts in social spending (Peet 2003).

Institutions such as the International Monetary Fund (IMF), the World Bank and the World Trade Organization (WTO), which are dominated by the USA and its allies as underpinned by the MNCs' interests have, while having been established for different purposes, moved closer and coalesced in imposing neoliberal policy prescriptions (Peet 2003).

Therefore, what we have had as the dominant form of globalisation, at least since the 1970s, is none other than *neoliberal* globalisation. This means that 'rather than disparate peoples simply interacting as space collapses' (Peet 2003: 2), the globe has instead experienced neoliberal functional integration – neoliberal globalisation.

Unlike in the sphere of the market, where the IMF, World Bank, WTO and powerful capitalist states such as the USA have used their power to champion neoliberal globalisation and serve MNCs, as Peet (2003) argues that they do, in the sphere of production the MNCs have directly implemented their own programme, functionally integrating their globally dispersed operations. This has largely been driven by centralisation of decision-making on management and production strategies – or production systems as they are also called – at the headquarters of the respective MNCs (Barnes 2000, 2008; Barnes & Morris 2007; Black 2008; Peet 2003; Sturgeon & Florida 2000; Veloso & Kumar 2002). Peet (2003) points out that this centralisation of power is

one of the instruments whereby MNCs that functionally integrate production strategies dominate competing labour forces.

The automotive MNCs' strategies have included:

- Outsourcing of what is identified as non-core operations to suppliers – while an old phenomenon, this has been aggressive since at least the 1980s (Gereffi 2008; Sturgeon & Florida 2000; Womack et al. 1990).
- A shift in employment as a result of outsourcing, from the final assembly operations to the supply chain operations (Gereffi 2008; Sturgeon & Florida 2000).
- As a result of outsourcing too, a reduction in the quality of jobs and a negative impact on unionisation (Sturgeon & Florida 2000).
- Increasing competitive pressure in general, but more so towards geographically dispersed networks of plants, affiliates and suppliers (Barnes 2000; Bonacich & Wilson 2008; Sturgeon & Florida 2000; Veloso & Kumar 2002).
- Aggressive cost reduction measures in general, but more so in the supply chain as part of contractual prerequisites and requirements by OEMs over suppliers, including increased quality requirements and enhanced Just In Time (JIT) systems (Barnes & Morris 2007; Veloso & Kumar 2002).
- Global sourcing strategies (Sturgeon & Florida 2000).

Related to globalisation as not just a neutral spatial process, Blum (2009) also points out that while automotive MNCs prioritise standardisation of their global production strategies, they have treated the upward harmonisation of terms and conditions of work, health and safety and industrial relations differentially. To this end, Blum (2009) identifies that there has been a growing divergence between productivity gains on the one hand, and improvements in wages and conditions for many workers across the automotive global value chain on the other; and that MNCs that have established industrial relations with unions in some countries nonetheless often fail to respect worker and trade union rights in others.

For example, regarding the global restructuring process in the white goods industry, Webster et al. (2008) find that it has actually contributed to the manufacture and reproduction of insecurity, which it uses to discipline the workforce. Nevertheless, they conclude that this process does provide fresh grounds for labour creatively to explore new forms of organising.

Webster et al. (2008) argue that in restructuring production, capital itself creates points of vulnerabilities; and they identify three of these. First, there is the dependence of large institutional investors that depend on pension funds of workers; second, there is the high trade dependence of the global economy; and third, there is the dependence of corporations on successful marketing of products in global consumer markets. Taking up each of these points, Webster et al. (2008) argue that it is possible to pressurise corporations through an active worker presence in pension funds, disrupt the movement of goods and services to compel corporations to the bargaining table, and engage in consumer boycotts to make corporation lose their reputation. Webster et al. (2008) argue for the construction of global unionism that challenges the market logic corporation. This argument is linked to the new sources of power – including logistical power – that Chapter 2 ends by highlighting for the purpose of the present study.

3.4. The world's strategic industry, and South Africa and Germany's location

The automotive industry is a strategic industry in a range of ways.

According to the *Organisation Internationale des Constructeurs d'Automobiles* (OICA)[3] – International Organisation of Motor Vehicle Manufacturers – which was established in 1919, were the automotive industry a country it would be the sixth largest economy in the world. OICA records that in 2005 the industry produced over 66 million cars, vans, trucks and buses and that these vehicles are essential to the workings of the global economy. According to OICA the 2005 output level, which was less than the industry's 2006, 2007 and 2008 output levels respectively, was equivalent to a global turnover

[3] See www.oica.net.

(gross revenue) of almost €2 trillion. The automotive industry is the world's largest manufacturing sector, accounting for approximately 15 per cent of the global Gross Domestic Product (GDP); and its scale of operation makes it one of the largest employment sectors globally, accounting for one in nine jobs directly or indirectly in developed countries (OICA 2005, cited in Barnes 2008: 2) where the industry remains concentrated, notwithstanding the globalisation current (Sturgeon & Florida 2000).

Table 3.1 shows the 2008 automotive industry's global production of motor cars.

Table 3.1: Global motor car production (2008)

Global region	Volumes	%
Asia-Oceania	24 646 730	46.83
Europe	18 373 538	34.91
America	9 238 009	17.55
Africa	378 929	0.72
Total	52 637 206	100.00

Source: OICA (www.oica.net, accessed December 2009)

Note: Percentages are author's own calculations.

These figures exclude Light Commercial Vehicles (LCVs), heavy trucks and heavy buses. Were these to be included the figures would obviously rise. According to OICA the global automotive industry production of all vehicles was 70 526 531 in 2008; this represented a decline of 3.4 per cent[4] from 73 266 061 in 2007. This decline has to be understood in the context of the global capitalist system crisis, which had begun imposing a downward spiral in production. Blum (2009) underlines the fact that the process of globalisation in the automotive industry has led to global overcapacity. The crisis worsened this situation. Global overcapacity is among the sources of the hyper competition taking place and its associated pressures in the automotive industry.

The world's leading economies have the largest automotive industry production output globally, and within their respective global regions. Of the motor car figures shown in Table 3.1, the USA accounts for 3 776 358, which is 20.55 per cent of the Americas' 9

[4] Again, percentages are author's own calculations.

238 009; Japan accounts for 9 944 637, which is 40.35 per cent of Asia-Oceania's 24 646 730; and Germany accounts for 5 526 882, which is 30.10 per cent of Europe's 18 373 538. Within the global regions, there is also a big gap between the largest producer in each case, and those lower down. For example, in Europe Germany is followed by France, but at 2 145 935. In terms of Africa, the continent's leading developing economy is the single largest automotive industry production site. South Africa accounts for 321 124 motor cars, which is 84.745 per cent of Africa's total motor car production of 378 929.[5]

3.4.1. The South African automotive industry and NUMSA

South Africa's automotive industry is both nationally important (Barnes 2007) and important in Africa within the contexts of the African Union (AU) and the Southern African Development Community (SADC). South Africa contributes 40 per cent to Africa's GDP, and has more cars than the rest of Africa combined (AIEC 2008: 8).

The automotive industry is the leading manufacturing sector in the South African economy, contributing R1.995 billion (6.9%) in 2007 to the country's GDP. According to *South African Automotive Week*: 'There are more than 200 automotive component manufacturers in South Africa, and upwards of another 150 that supply the industry on a non-exclusive basis' (SAAW 2009: 26).

In terms of exports, the automotive industry in South Africa contributed 13.7 per cent in 2007 (AIEC 2008: 13), and has an important direct employment contribution, according to OICA, of 112 300 jobs. Other activities from the analysis of the industry of industries included, the automotive industry contributes far more jobs to the South African economy than just assembly and component production operations. For example, the motor trade (retail), distribution and service have their own employment contribution, of 195 000 (NAAMSA 2005: 15).

[5] All data are 2008 and the data source is OICA (www.oica.net, accessed December 2009), except percentage calculations, which are author's own.

All of this makes South Africa's automotive industry nationally important (Barnes & Morris 2007). However, according to Barnes and Morris (2007), global competitive pressures are substantial over the industry, whose survival under globalisation processes is credited largely to the Motor Industry Development Programme (MIDP) (see, for example, Barnes 2008; Barnes & Hartogh 2009; Black 2001).

Barnes (2008) points out that the MIDP has largely managed to assist the automotive industry with global reintegration. He argues that this has occurred with positive adjustments in realigning the position of the South African automotive industry within a global, rather than national, framework. This, writes Barnes (2008), is evidenced in large-scale export programmes with a substantial growth of components exports.

The South African automotive industry emerged in the early 1920s, with FMC and GM being the first to establish production presence in the country (Black 2001). This industry developed under a series of Import Substitution Industrialisation (ISI) programmes, with high levels of protection, at the centre of which was the objective of increasing local content (Black 2001).

It is a widely shared perspective that without the MIDP (now the Automotive Production Development Programme or APDP, as reflected in Chapter 1), the South African automotive industry would not have survived globalisation processes (see, for example, Barnes & Morris 2007; Black 2001, 2008). There is, however, an exception to this viewpoint.

For example, Frank Flatters (2005) is of the view that the MIDP, and therefore by extension the APDP, represents waste, and therefore, that policy focus must be redirected to the motor retail sector, where most jobs are located, rather than in the capital-intensive production processes as characterised by assembly plants' operations. Flatters's (2005) train of thought is, however, not aligned to the strategic importance of manufacturing, in particular viewed in the entirety of the automotive industry as the industry of industries.

The motor retail sector in South Africa cannot be understood comprehensively in isolation from components production and final assembly operations, either historically or under global integration following the country's transition to a democratic dispensation.

The MIDP's success in maintaining the survival of South Africa's automotive industry notwithstanding, Barnes & Morris (2007) argue that this industry is, nevertheless, globally insignificant. They draw this conclusion partly from the industry's low volume production as a percentage of total global production. South Africa's 321 124 motor cars produced made up only 0.61 per cent of the total 52 637 206 global motor car production in 2008. The executive director of the National Association of Automotive Component & Allied Manufacturers (NAACAM), Roger Pitot (in an interview in November 2009), pointed out that the lack of economies of scale within South Africa's automotive industry is a critical challenge to the components sector, the supply value chain.

According to Pitot (interview), this contributes negatively to the cost structure of local production and serves as one of the barriers to localisation (local production – otherwise referred to as local content) and investment. Embedded in this, points out Pitot, are limitations to South Africa's automotive supply value chain. In this the scope for raising productivity gets limited. For example, considering low production volumes, other employers do not use investment as a productivity measure because of the cost factor. Pitot pointed out that the best way to raise productivity is to increase volumes. This will allow increased investments. According to Pitot, however, huge investments to raise productivity under condition of low volume production are costly.

The capitalist mode of production is such that the capitalist puts less into commodity production, where workers add value from which the capitalist pulls out more; the 'more' being the surplus added by workers – i.e. surplus-value (Marx 1990/1887).

Implied in lack of investment is pressure on labour, as other employers treat it as the main adjustable lever – a variable cost (variable capital). In this, unions are not left

untouched. Along with their members, they too are affected and at times in a manner that renders them embroiled in addressing internal problems. For example, organisational instability erupted in 2009 at VW South Africa's Uitenhage-based assembly plant for reasons that include the handling of changes in work and production organisation. As a result, NUMSA removed all shop stewards, thereby dissolving the Shop Steward Committee (SSC), and conducted fresh elections. Whether such a solution would be sustainable in the context of constant restructuring would require further time and another study.

On other challenges that face the South African automotive industry value chain, Pitot (interview) pointed to what he called lack of proper monetary and industrial policies. As part of the resolutions from its job security conferences held in 2009 (in response to the global capitalist system crisis that was under way), NUMSA has since intensified and championed a campaign against the Reserve Bank of South Africa's use of high interest rates to advance a policy of inflation targeting. Pitot agrees with NUMSA that the Reserve Bank's predominant focus on the policy of inflation targeting and to this end the use of high interest rates counts negatively against suppliers.

High interest rates burden suppliers, particularly small, medium and micro enterprises, in terms of credit by either limiting access to credit or making existing credit unsustainable. This, Pitot (interview) argued, is a barrier to investment. He also suggested that South Africa's high inflation rate is a structural problem, whose sustainable solution cannot lie in cosmetic measures and is rather to be found in proper monetary, fiscal, industrial and economic development and growth policies.

Further, Pitot did not fail to mention the volatile exchange rate and progressively increasing cost of energy, particularly electricity, as challenges to the industry. At the time of the interview the exchange rate was up and acting against exports, while Eskom, the state-owned electricity utility, was pushing for increases in end-user rates.

All of the challenges to which Pitot pointed are significant macro policy issues that would merit close attention in another study. They are, however, important to highlight in terms of the challenges leading to short-term and long-term restructuring in industries such as the automotive industry.

NUMSA as the largest trade union in the South African automotive industry

NUMSA is the largest trade union in the South African automotive industry. This is an industrial union structurally located and organising in the metal and related industries in general. According to the report, *The State of COSATU Affiliates*, prepared by the National Labour and Economic Development Institute (NALEDI) for the Congress of South African Trade Unions' (COSATU) 10th National Congress held in 2009, NUMSA organised 216 808 members in total in 2008. According to this NALEDI report, NUMSA's membership consists of 60 per cent males, 40 per cent females, and 75 per cent young people under the age of 30.

NUMSA is considered to be one of COSATU's militant affiliates and its militancy's influence is felt even in the formulation of government policy, for example, the Reconstruction and Development Programme (RDP) (see Forrest 2005).

Barely two years into South Africa's transition to a democratic dispensation NUMSA got confronted with a difficult situation arising out of the country's reintegration into the global economy. This was partly the function of the legacy of apartheid that led to years of isolation, which included sanctions. In its 5th National Congress (September 1996) and National Policy Conferences (1997) in response to the challenges of the corresponding competitive pressures and effects of the associated management techniques on workers, NUMSA (NUMSA 1997: 29) resolved the following:

a. That workers need to be productive, but that as a union NUMSA rejected the ideology and proposals for competitiveness.
b. To oppose any attempt to make workers compete against their counterparts elsewhere.

c. To reject the new management and production techniques on the basis that they would not lead to genuine worker participation and democratisation of the workplace.
d. That instead of focusing on making different companies competitive, the union should devise industrial policies that would lead to the development of productive capacities and job creation.
e. That – partially in recognition of managements' unilateral implementation of restructuring, encompassing changes in work and production organisation as each company strives for competitiveness, and in line with the ideal of worker control – the union should put forward a programme for workplace democratisation, and demand that the following issues be negotiated:
    - strategic business plans;
    - introduction of new technology, use of machines and line speed;
    - plant utilisation and layout;
    - benchmarks, targets and production schedules;
    - product development plans;
    - work organisation and work processes;
    - a quality assurance programme;
    - working time and patterns;
    - company and organisational structures;
    - investments in human and capital resources;
    - human resource planning (which includes workforce levels), training and skills;
    - affirmative action programmes;
    - productivity and performance assessment;
    - remuneration, bonuses, incentive schemes, grading and wage structure; and
    - wealth sharing schemes and a dividends policy.

This underlines the extent to which the union was determined to play its role in the workplace and in extending collective bargaining rights.

3.4.2. The German automotive industry and IG Metall

As already highlighted, the German automotive industry is the largest in Europe. According to OICA, it accounted in 2008 for the production of 5 526 882 vehicles, which is 30.1 per cent of Europe's total motor car production: 18 373 538. The automotive industry accounts for over a fifth of Germany's total industrial investment, and has over the last 10 years invested over €100 billion in Germany as a location for industry (VDA 2009: 268). According to the *Verband der Automobilindustrie*,[6] in 2008 the German automotive industry achieved a turnover of €287 billion, which is over a fifth of the country's corresponding total industrial turnover (VDA 2009: 267–268).

Also known as the 'motor' of German industry (VDA 2009) because of its strategic importance to the country's economy, the German automotive industry's 5 526 882 car production volume in 2008 constituted 10.5 per cent of the corresponding global production: 52 637 206.[7]

The automotive industry in Germany accounts for 17 per cent of the country's exports (Straubhaar 2007: 98). According to the VDA (2009: 54), three out of four cars produced in Germany are exported, and the country has an automotive trade surplus of €100 billion (VDA 2009: 268). Unlike that of South Africa, Germany's automotive industry is thus an important global player. Located in 'the world's third largest national economy after USA and Japan', the German automotive industry is in the global top four automotive producing countries, along with Japan, China – which is increasingly gaining economic significance and has overtaken the USA in automotive production – and the USA itself (VDA 2009: 269).

The strategic nature of Germany's automotive industry is underpinned not only by its host of other countries' OEM MNCs, but also by the fact that it has its own, including the old OEM MNCs, namely Audi, BMW, Daimler (Mercedes Benz), Opel (which was

[6] Association of German Automotive Manufacturers
[7] The source of the figure is OICA; the percentage calculation is the author's.

acquired by the USA's GM), Porsche and VW. As stated in Chapter 1, three of these (BMW, Mercedes Benz and VW), are part of the seven MNCs that have production facilities in South Africa. This gives Germany not only enormous presence, but also a leading role in terms of foreign investments, in the South African automotive industry. Further, according to the Automotive Industry Export Council (AIEC 2008), VW, a German MNC, captured South Africa's largest proportion of market share in 2007.

Germany is South Africa's leading automotive trading partner, at R39.47 billion worth of trade in 2007; South African imports of light automotive vehicles from Germany totalled 26 per cent, and Original Equipment Components (OECs), 30 per cent, of the respective imports in 2007 (AIEC 2008). According to the AIEC (2008), trade rankings between South Africa and its trading partners in the automotive industry reflected the global linkages of OEM parent companies. For instance, Germany has three OEMs in South Africa, the highest to any country, and it is South Africa's leading automotive trading partner. This phenomenon falls within the view that intra-MNCs' trade contributes significantly to world trade. As already stated, compared with other countries, Germany has a greater proportion of OEM production facilities in South Africa. Again, South African imports from German far outweigh the country's exports to Germany, with thus a deficit for South Africa.

The German automotive industry accounts for every seventh employee in that country's economy (Straubhaar 2007: 98). It is thus the most important employer in the country (VDA 2009: 266). According to OICA[8] the automotive industry employs 773 217 workers in Germany. As is the case in South Africa, were other employment spin-offs due to the extended nature of the automotive industry to be taken into consideration, the figure would be far higher.

[8] Information from OICA is obtained from its website: www.oica.net, accessed December 2009

IG Metall: 'the world of over 2.3 million citizens'

In terms of trade union organisation, IG Metall is the largest trade union in the German automotive industry. However, compared to NUMSA, its scope is much broader. It organises in the metal industry; extractive metallurgy; iron and steel industry; metal trades industry and other services in the metal sector; and textile and garment related industries and services; as well as in wood and plastics processing.[9]

IG Metall calls itself 'the world of over 2.3 million citizens'. The union organises 2 300 105 members, of whom 82 per cent are male, 18 per cent female, and 9 per cent under 27 years of age. The union's membership also consists of the unemployed, mainly those on pension, who form 10 per cent. In South Africa, NUMSA is mainly blue collar in terms of membership, and is still searching for ways to organise white collar workers. In Germany, IG Metall is relatively successful in organising white collar workers, who make up 18 per cent of the union's membership. IG Metall has more than 125 000 shop stewards and Works Councils in more than 18 000 companies.

IG Metall is the largest affiliate of the German Confederation of Trade Unions: *Deutscher Gewerkschaftsbund* (DGB). The union accounts for 36 per cent of DGB's affiliates' membership. Like NUMSA in South Africa, IG Metall has played an important role in Germany's industrial history. For example, IG Metall played a central role in the struggle that culminated in a 35-hour working week in Germany, through strikes, court actions and other labour movement tactics (Schneider 1991).

[9] The information in this section on IG Metall is drawn from the union's website (www.igm.de), accessed December 2009.

CHAPTER 4
THE LOGISTICAL REVOLUTION, NUMSA AND IG METALL IN A GLOBALISED PRODUCTION REGIME

This chapter turns to the 'hidden abode of production'[10] – our modern day globalised workplace – and the logistics revolution, to look into work and production changes as they have affected NUMSA and IG Metall. This is done largely through a reflection on the data gathered during field work (as explained in Chapter 1).

4.1. BMW South Africa, Rosslyn

4.1.1. Outsourcing, crisis and retrenchments, employment and the role of Munich in Rosslyn

Outsourcing of the warehouse, Midrand

BMW has a production plant in Rosslyn, and until 2009 the company also had a warehouse in Midrand. The warehouse has since been transferred as a going concern under Section 197 of the Labour Relations Act (LRA, No. 66 of 1995) to Kuehne + Nagel, a German Multinational Corporation (MNC) specialising in supply chain logistics. Kuehne + Nagel employs over 55 000 workers at 900 locations in more than 100 countries.[11] According to the BMW plant director in Rosslyn, Knudt Flor (in an interview in December 2009), because of its expertise Kuehne + Nagel has a contract with BMW globally.

The outsourcing of the warehouse in Midrand followed a decision by BMW's global headquarters in Munich (Germany), which required all warehouses to be outsourced as part of a global production and management strategy in respect of core and non-core functions as well as associated expertise (Flor interview).

[10] As discussed in Chapter 2, according to Marx (1990/1867), a capitalist workplace is a 'hidden abode of production', where capital is not only producing, but is itself produced.
[11] The statistics are from www.kn-portal.com, accessed December 2009.

Before it was outsourced, the company's Midrand-based warehouse was – jointly with the assembly plant in Rosslyn – part of the National Bargaining Forum (NBF). The NBF is a collective bargaining forum between NUMSA and all of the seven Original Equipment Manufacturers (OEMs) in South Africa. The implication of the outsourcing is that Midrand is now a standalone Parts and Accessories (P&A) entity. Therefore the workforce it employs will no longer be covered under the NBF, but will have to fall under the Motor Industry Bargaining Council (MIBC).

The case of BMW's warehouse shows that, from being vehemently opposed to outsourcing, the union's position has in practice became flexible depending on surrounding circumstances. These include the balance of power, and whether or not jobs stand to be placed on the line or employment benefits and terms and conditions to be varied downwards. Given that the particular example of the Midrand warehouse took place relatively recently (2009), and that management in such cases can provide guarantees that lead to agreement, it will be interesting to see long-term how the union will continue to engage in this area.

A NUMSA shop steward at BMW (in an interview in December 2009) recalled that the outsourcing of car seat production from the assembly plant in Rosslyn in the mid-1990s had almost completely concluded the process of outsourcing of production operations. He said that the outsourcing of Midrand – although a warehouse – served as confirmation to him that as long as production is for profit the process of restructuring by companies can never be guaranteed to be complete.

Economic and business downturns: retrenchments at BMW South Africa

The present study was conducted during a crisis of the global capitalist economic system. The automotive industry in South Africa has for the most part responded to this crisis with retrenchments, temporary lay-offs and short-time. In terms of the practice of crisis retrenchments, workers are retrenched during downturns and hired during upturns. This makes employment in the automotive industry cyclical.

According to Flor (interview), retrenchment is not part of BMW's philosophy. This is partly why there were no retrenchments in the BMW's Rosslyn assembly plant during this crisis. Further, retrenchments are normally preceded by the termination of Temporary Short Term Contracts (STCs) where they exist. Unions such as NUMSA consider this to be part of job loss, which it is.

Flor (interview) argues that retrenchments lead to companies losing skills and that this is a problem because skilled workers are likely to find jobs elsewhere, and then are hard to rehire during upturns, when production pressures build up from a rise in demand. That is why, according to Flor, BMW has systems in place to avoid retrenchments.

BMW has a system of standing voluntary separation, which, along with termination of STCs, resignations, natural attrition, and dismissals for misconduct, plays a role in workforce reduction (NUMSA shop stewards from BMW interview: 2 November 2009). Most of the time there are no replacements. But if there are, the trend is that of STCs.

Further, as reflected in Masondo (2003), BMW has a system of overtime banking, called Working Time Account (WTA). This is a voluntary overtime savings scheme. The WTA now provides for more options (Flor interview). Workers can now choose whether to save the overtime premium or the wage base rate of any overtime worked in any day. In terms of this system, when production output is down – as during transitions to new models, and economic and business downturns – BMW places workers on temporary lay-off with WTA savings paid out in the form of ordinary wages. If the savings are not sufficient to cover for ordinary wages, the company still pays ordinary wages in full to respective WTA volunteers, but in the form of an advance. This advance is recovered from future WTA savings or workers' separation funds if they resign or for any reason (including death) have their employment terminated while on the negative balance. A simple mathematical or political economic analysis is that ultimately the company does not incur any cost from WTA as practised in its Rosslyn's assembly plant; on the contrary, it appears that BMW stands only to reap benefits.

When looked at in isolation the WTA facilitates the 'no work, no pay' principle because it is ultimately the workers themselves who pay, from their own savings. These savings can still be made independently of the WTA, directly or through the union should it make this consideration in view of its principle of worker control. Also, as already stated, the advance made by the company under WTA is recovered. This is unlike in Germany (Regensburg assembly and Wackersdorf components plants), where the advance is not recovered when workers resign or have their employment terminated for any reason (including death).

It also appears that WTA plays a role in facilitating flexibility in respect of the use of overtime work to respond to a rise in demand. Rise in demand often leads to an increase in production volumes. The manner in which this flexibility could be realised has an effect of deepening real subordination of labour to capital.

For instance, in BMW's Rosslyn assembly plant, when workers know that they have to make savings under WTA in order to prepare for a future temporary lay-off or pay back a WTA advance (debt) made by the company, they are less likely to resist working overtime. In the South African automotive industry, overtime work sometimes involves disputes, as workers refuse it. From my own seven years' experience training and working in an automotive assembly plant, the reasons for this are best summarised by Marx (1990/1867) when dealing with the working day in Chapter 10 of *Capital* (Vol. I), as also reflected in Chapter 2 of the present report. To recap, according to Marx (1990/1867) the prolongation of the working day limits the time available to workers to satisfy their needs as social beings, which include rest time, involvement and social interaction in communities and households, and intellectual development.

To locate but three examples from workers' material life: first, there are workers who are also studying. Especially when working, studying requires extra effort and much more effective and efficient use of time. Second, many workers are involved in their communities. In looking at Defy in Ezakheni (Ladysmith) in the province of KwaZulu-Natal, Webster et al. (2008) found that workers not only attend funerals at weekends, but

are in this regard also directly involved in providing assistance in their communities through burial societies and other forms of help schemes. Finally, in South Africa there are various community participatory structures, which require workers' involvement in various capacities including as parents. These structures include school governing bodies, local government ward committees and community policing forums.

NUMSA's political strategy is to combine workplace and community struggles (Forrest 2005; Von Holdt 2003). As such the union expects its members to be involved in community structures and struggles. The union also encourages its members to join and be active in South Africa's ruling party, the African National Congress (ANC), and in the South African Communist Party (SACP).[12] These two formations are together in an alliance with the Congress of South African Trade Unions (COSATU), to which NUMSA is affiliated.

In BMW's Rosslyn assembly plant, the WTA was resisted when management first wanted to introduce it. Workers gave their NUMSA shop stewards a mandate to reject it, and this was done. The WTA was then left to a voluntary process during which the outcome was the opposite; when management approached workers individually to opt for the WTA on a voluntary basis, one after another (up to approximately 70 per cent), did so. The voluntary nature of the WTA in Rosslyn still, however, presents impediments to the company. Flor (interview) points to management complexities in administering the different voluntary options available under the WTA. Then too, the WTA in Rosslyn's assembly plant has not been joined by all workers. Flor stated that the company prefers how the WTA is managed in Germany, where standard negotiated agreements would cover all workers.

[12] For example, this is stated in NUMSA's 7th and 8th National Congress Resolutions (NUMSA 2008).

Employment, workforce profile and the role of Munich in employment decisions in Rosslyn

BMW South Africa's employment contribution typically encompasses assembly plant operations, the supply network, sales and distribution (e.g. dealerships and transportation), maintenance and repair services. Taking this into consideration, Flor (interview) suggests that if the company were to shut down completely, over 15 000 jobs would be lost. This is significant in the light of the country's high unemployment rate, at 24.5 per cent in terms of the official (narrow) definition according to Statistics South Africa's 2009 third quarter *Labour Force Survey* (LFS) (Stats SA 2009b).[13]

In terms of direct employment, according to BMW South Africa's Employment Equity (EE) report (BMW South Africa 2009), in this period[14] the company employed a total of 2 394 workers. According to Flor (interview), the warehouse in Midrand employed approximately 450 workers. The company's total workforce of 2 394 included 686 white collar workers: mainly legislators (top management), senior officials, professionals, technicians and associate professionals. These categories are mainly white people, at 405, with 306 of these being male and 99 female. Within the categories of legislators, senior officials, managers and professionals, there are 19 foreign nationals, all of whom are male. The appointment of foreign nationals in top and senior management positions is common to all automotive MNCs in South Africa. Those holding key positions are mainly rotational, come from the respective headquarter countries and have to do with the implementation of global production and management strategies. One can term them 'global workers'.

BMW South Africa's workforce is also made up of clerks (342): mainly African males (221), followed by African females (44). A larger proportion of the company's workforce (1 131) is constituted by blue collar workers, defined in the EE report (BMW South Africa 2009) as plant and machine operators and assemblers. According to that report, they are mainly black Africans, with 983 of these being male and 135 female, and with 5

[13] The expanded definition of unemployment obviously provides a higher unemployment figure than the official or narrow definition.
[14] 1 June 2007–31 May 2008

coloured and 8 Indian people. This is the bedrock of the membership of NUMSA, the largest trade union at BMW South Africa. NUMSA has 863 members in the Rosslyn assembly plant. It has 9 shop stewards; the 10th one had passed away and at the time of this study there was no replacement effected (NUMSA shop steward interview: 9 December 2009).

Coupled with unions' political policy[15] the white top and black bottom disparity in employment hierarchy has influence over the profile of the union membership. As stated in Chapter 3, NUMSA is largely entrenched in the blue collar workforce. In South Africa, the blue collar workforce is for the most part black people ('black' as defined in the Employment Equity Act – EEA – No. 55 of 1998, as Africans, coloureds and Indians). In this, Africans make up a larger proportion. Thus, the white top and black bottom disparity in employment hierarchy is not unique to BMW South Africa; rather, it is a general reality that is still prevalent in South Africa, particularly in the private sector.

The Commission for Employment Equity (CEE) annual report (2009) argues that 'the current progress rate will take employers approximately one hundred years to achieve equitable representation in workplaces' (2009: 2). This is unlike in the public sector where transformation has been faster. 'Government's progress in terms of equitable representation is masking the little achievement made by all employers', remarks the CEE (2009: 2).

The white top and black bottom disparity in employment hierarchy reflects the legacy of the country's colonial and apartheid past. Karl von Holdt (2003) calls the corresponding workplace relations the 'apartheid workplace regime'.

Through its EE plan and report (BMW South Africa 2009), the company seeks to redress the racial and gender imbalances of the past and provide for equal opportunities,

[15] For instance, there are workers (particularly at the top of the employment hierarchy) who would not join unions such as NUMSA because of their political policy as characterised by COSATU's alliance with the ANC and SACP. There is another history to this. Colonisation and apartheid, under which racism meant incentives to and partial co-option of some sections of the white working class in some instances, could still have part of their legacies in place.

including accommodation for people with disabilities, as is required in the rest of the country's economy under the EEA.

According to its EE report, BMW South Africa also employs 186 non-permanent employees. Africans make up the large proportion of these, mainly males, at 170. The non-permanent employees are under STCs, an Absentee Pool (AP) (union–management meeting: 9 December 2009) and Contract Labour Brokers (CLBs) (Flor interview). CLB is the category of STCs employed under labour brokers. However, the NUMSA Shop Steward Committee (SSC) seemed unaware of the use of labour brokers by the company.

But what is the AP? In what way does it differ from ordinary STCs? And where does it stand in relation to labour broking?

Unlike ordinary STCs, which are renewed on average for between three and six months or even a year, the AP consists of even more flexible workers; workers under the AP report to the company every day but are only deployed to production after assessment of whether or not there are absenteeisms. According to NUMSA shop stewards at BMW South Africa (focus group: 9 December 2009), those not deployed are ultimately paid about R60.00 for the particular day of being turned away without work.

Although appearing to be a labour broking practice, the AP as it is presently being practised at BMW South Africa's assembly plant in Rosslyn is reportedly administered by the company. In this regard there is no intermediary – the middleman, i.e. the labour broker – involved. Nevertheless, this practice, like labour broking and STCs to some extent, has the effect of deepening real subordination of labour to capital. This is reflected partly in the extreme vacillation of affected workers between employment and unemployment. This renders the affected workers a highly flexible appendage to production. With or without them, production goes on.

On 9 December 2009 NUMSA shop stewards advanced, in a meeting with the company's hourly human resource management representatives, a demand for all STCs to be made

permanent. In rejecting the NUMSA shop stewards' demands on AP STCs, human resource management stated that the AP was not created out of the company's will but due to excessive absenteeism. In the meeting the causes of absenteeism were not probed.

However, the way in which work is organised and performed can, among other health and safety hazards, lead to overwork, and therefore to worker fatigue and associated absenteeism. The company, according to shop stewards (focus group: 9 December 2009), for instance requires a workload factor of 100 per cent as part of its production system, Value-added Production System (VPS). A number of implications flow from this. For example, at its most extreme, work must be performed continuously; in crude terms, non-stop, and at maximum speed, and there must be no interference of any sort unless it is a formal break when workers can rest.

With regard to ordinary STCs, the representatives of hourly human resource management conceded that without these STCs the plant does not have full capacity to run production. Therefore, in line with this recognition, a six-month extension of the STCs was made (hourly human resource management, union–management meeting: 9 December 2009). However, management stated that the company's employment practice of STCs and the rest of the company's employment decisions are based on market conditions. This means that employment must be as flexible as, and respond to, market fluctuations. Not surprisingly, the union found this problematic; NUMSA shop stewards (union–management meeting: 9 December 2009) claimed that there are workers who have been employed under STCs for over four or five years.

From another angle, which can be defined as a globalisation angle – especially in terms of intra-MNCs' functional integration – management (union–management meeting: 9 December 2009) stated that converting the STCs into permanent contracts, as NUMSA demanded, does not fall under Rosslyn's competency, but is rather a decision for Munich to make. Thus, until such time as Munich approves a request made from Rosslyn to convert *a certain number* of ordinary STCs into permanent contracts, this would not be done (hourly human resource management, union–management meeting: 9 December

2009). Emphasis on 'a certain number' arises from the company's insistence on (or rather rigidity regarding) employment flexibility in terms of market conditions.

Both Rosslyn's referral of a decision on STCs to Munich, and the outsourcing of the warehouse under a global directive from Munich, reflect a globalisation trend where key financial decisions of MNCs' global production and management strategies are centralised at respective headquarters. Although the STC workers at BMW are, according to NUMSA shop stewards (focus group: 9 December 2009) receiving benefits such as the company's medical aid and provident fund contributions,[16] employing them on a permanent basis is still a financial decision. For instance, when the company terminates the STCs the affected workers do not receive a severance (separation) pay (package), which permanent workers receive. This is a cost saving on the part of the company.

A challenge for NUMSA as a union in a country that does not have its own MNCs in specific areas of production – for example, OEMs in the automotive industry – is how to organise differently under conditions of the form of globalisation that is characterised by functional integration in which decision-making is centralised at headquarters (home countries) of these MNCs.

4.1.2. Rosslyn, production capacity and the competitive struggles

Rosslyn runs a 2-shift pattern of a 9-hour day. Each shift produces approximately 125 units: 3-series BMW in its different variants, totalling thus approximately 250 units per day and including both Left Hand Drive (LHD) and Right Hand Drive (RHD) vehicles (Flor interview). According to Flor, about 83 per cent of Rosslyn's production is for export to the USA as the main export destination, then Japan, Australia, South Korea and, from 2009, also Canada. According to Flor, this makes economic crisis bad for BMW South Africa if it occurs outside South Africa, at export destinations.

[16] For STCs at BMW to be receiving such other benefits as the company's contributions to medical aid scheme and provident fund is progress because in other instances and companies STCs are denied such. See, for example, Webster et al. (2008).

The 3-series BMW model is not assembled only in Rosslyn. It is also assembled in Germany: Regensburg, which has 1 100 units per day capacity; Munich, which has 900 units per day capacity; and Leipzig, which has 600 units per day capacity (120 of which are BMW 3-series) (Flor interview). Thus Rosslyn included, the company has four production facilities for 3-series BMW. Of them all, Rosslyn has the least production capacity; it is a comparatively low volume production facility.

On the whole, this situation means intense competition within BMW as an MNC. Flor (interview) states that, in order to survive, Rosslyn has to fight for higher volumes because low volume production counts negatively in terms of economies of scale. As to what makes Rosslyn still an option for BMW, Flor pointed to a number of competitive advantages that apply to South Africa: first, the country has a low labour cost compared to Germany; second, the Motor Industry Development Programme or MIDP (now the Automotive Production and Development Programme or APDP) offers attractive production incentives; and third, BMW believes that Africa constitutes a future market to be taken seriously. Investment follows growth, argues Flor. In this, therefore, BMW's investment in South Africa is strategically located.

According to the Automotive Industry Export Council (AIEC 2008: 8), South Africa contributes 25 per cent to Africa's GDP, and holds 40 per cent of the continent's total industrial output, 45 per cent of its mineral output, 50 per cent of its buying power, and more industrial facilities than the rest of the continent combined. The AIEC (2008) points out that South Africa is also a gateway into Africa in supplying transport, communications, investment and even energy; and has one of the best infrastructure and service industries among developing nations. This thus constitutes a further competitive advantage that applies to South Africa.

Finally, South Africa is among the sub-Saharan African countries that are covered under the African Growth and Opportunity Act (AGOA). AGOA[17] (and its subsequent

[17] AGOA was signed into law on 18 May 2000 as Title 1 of the USA's Trade and Development Act of 2000.

evolutions) provides for trade incentives to sub-Saharan African countries. This comprises trade preferences and duty-free imports into the USA – automotive products included.

Of the above four factors that BMW considers competitive advantages, to both low wage cost and AGOA there is another side, for which they are often criticised. Against low wage cost, also called cheap labour, there is an outright struggle by workers and their unions. And AGOA, which is a subject for further study, is also contested in a number of areas. This includes its expansionism of free market globalisation, as embedded in its trade-offs; and its results: that is to say, whether or not it has actually led to the envisaged success in particular sub-Saharan African countries.

However, unlike some of the other sub-Saharan African countries that could be constrained by limited capacity, South Africa's capacity to seize potential opportunities provided for under AGOA – notwithstanding its negatives – explains why the USA is BMW South Africa's main export destination.

However, BMW South Africa experiences disadvantages as well. Flor (interview) cited both inbound and outbound logistical cost coupled with underdeveloped supplier capacity as the main disadvantages. This is in addition to the low volume production – lack of economies of scale – already mentioned. According to Flor, the internal rail transport system has not reached a sufficiently advanced level to complement road transport, which has its own complexities. Also, lack of economies of scale compels exports from BMW's Rosslyn assembly plant to its main export destination, USA, to be transported to Europe first; from there, together with other exports, they go on to their final destination. An average vessel caries about 4 000 vehicles and larger vessels up to 7 000 vehicles; however, there is no such capacity constantly available to convince logistics companies to take a straight line to the USA (Flor interview). The solution, according to Flor, is to improve on economies of scale and to build a strong supplier base that is globally competent.

As stated in Chapter 2 (citing Womack et al. 1990), a Complete Built Up (CBU) vehicle is made up of over 10 000 discrete parts assembled in major components or modules – engines, transmissions, steering gears, axles, suspensions, cockpits, doors, exhaust systems, climate control systems, and dashboards, which also encompass entertainment (e.g. radio) and recent technologies such as navigators etc. In responding to the global capitalist crisis in 2009 from which its members faced large-scale retrenchments, NUMSA convened a national job security conference followed by similar conferences in its regions. From this the union was to strongly renew its commitment to its standing campaign for local content production. When achieved this would, for instance in the automotive industry lead to the many parts and components or modules that go into CBU vehicles being manufactured locally.

Focusing on reducing both inbound and outbound logistical costs, Flor (interview) concurs with NUMSA and further identifies minimum areas for action on a long-term sustainability basis. Flor argues that improving economies of scale through local content production – in other words, building a complete automotive value chain locally – would among other things require a coherent and well coordinated strategy to develop capacity in process (which includes instruments of labour) and product development. According to Flor, the supply chain must be prioritised in all of this. In terms of education and training, this means that skills development must also have a strong focus on postgraduate levels, where Research and Development (R&D) are central competencies and expected outcomes.

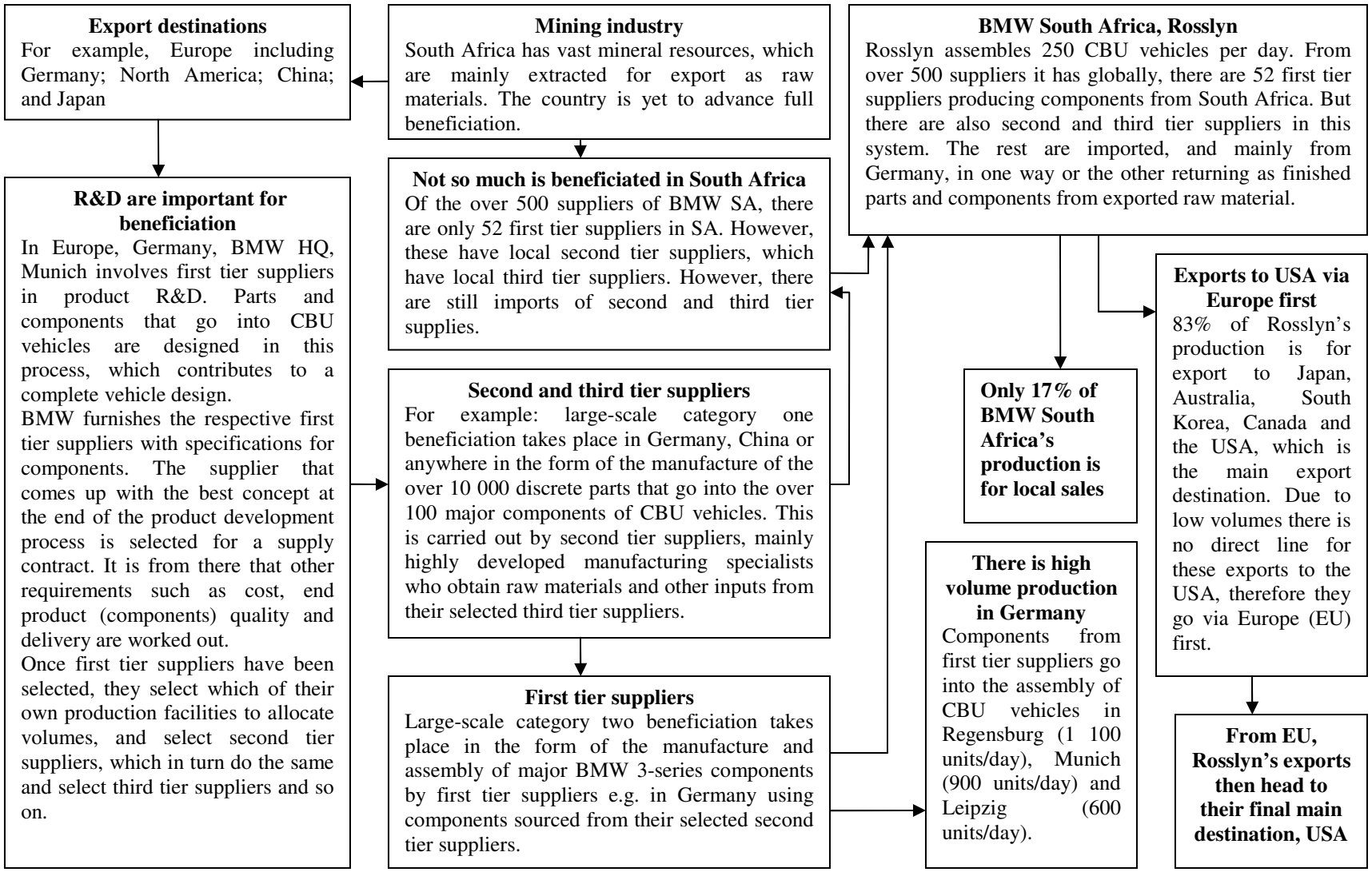
Further, like many others, Flor points to South Africa's mineral resources[18] as an advantage that it is not sustainable to continue losing; these resources are extracted and

[18] The AIEC (2008) provides the best summary of South Africa's mineral resources base although not on all minerals, as follows: 'South Africa possesses an abundance of raw materials and is the world's top ranked producer of platinum, palladium, rhodium, chrome, manganese, vanadium, vermiculite, ferro-chromium and alumino-silicates. In terms of global reserves and production of minerals, the country holds 90% of platinum-group metals, 80% of those of manganese, 73% of chrome, 45% of vanadium and 41% of gold reserves. Only two strategic minerals, namely, crude oil and bauxite, are not available in the country…The country is also home to over 70% of the world's chromium, which is an essential ingredient in the stainless steel used to house the catalyst and produce modern auto exhausts. This resource base produces in excess of 50% of the world's ferrochrome' (2008: 10).

largely not beneficiated but rather exported – only to return in the form of costly discrete parts or completed components or CBU vehicles.

Figure 4.1 is an attempt to summarise this situation, starting with the mining industry, and depicting the movement of parts, components and CBU vehicles in the various stages of production from the viewpoint of commodity chains and the logistical revolution. Germany is used as a country example: Chapter 3 showed from AIEC data (2008) that Germany is South Africa's main trading partner in the automotive industry, and accounted in 2007 for 30 per cent of OECs' imports to South Africa; and in this depiction BMW is used as an example of an OEM.

Figure 4.1: The automotive industry and logistical revolution in concert



4.1.3. Rosslyn, the logistical revolution and the production system

Flor's emphasis on the development of the supply base explains the position in which the Rosslyn-based assembly plant finds itself; i.e. in terms of the logistical cost component of the cost of production. It also explains one of the weaknesses of globally dispersed production.

According to Flor (interview), the present production organisation in the automotive industry is such that about 75 per cent of value-adding activity in the automotive industry comes from suppliers. This means that OEMs' value-adding activity to CBU vehicles is less, at 25 per cent. The shift in value-adding activity from OEMs to the supply side of the value chain was accomplished by means of outsourcing, as reflected briefly in Chapters 2 and 3.

The 75 per cent value-adding activity that has been shifted to the supply side, read in context with the challenge of the lack of economies of scales as pointed out by Pitot (interview) and Flor (interview) and the underdeveloped supplier base (Flor interview) means that there is a substantial amount of importing of discrete parts and even components or modules that are simply less complex to transport from long overseas distances than to manufacture locally. As such, components *assembly* rather than components manufacturing appears to be largely occupying a significant portion of value-adding activity in the local supply base.

According to Flor (interview), Rosslyn has about 500–700 suppliers. About 80 per cent of them are MNCs headquartered in Germany and elsewhere. Of BMW Rosslyn assembly plant's first tier suppliers (excluding imports), only 52 are local and these also consist of MNCs that are supplying BMW globally. However, linked to production in the Rosslyn assembly plant there are also second, third and fourth tier suppliers locally. While the Rosslyn assembly plant plays its own role in local sourcing, particularly in terms of cost, quality and delivery requirements, just as in Regensburg, Munich plays a central role in terms of the strategy of global sourcing.

The shift in value-adding activity to the supply side of the automotive industry value chain has not only been accompanied by increased responsibility in various supply tiers for companies to coordinate their respective suppliers. According to Flor (interview), this shift now entails increased involvement of first tier suppliers in process and product development. In this (as depicted in Figure 4.1), for instance, BMW globally invites different first tier suppliers to Munich during product development from the outset. Cost, quality and delivery efficiency in terms of Just In Time (JIT) and Just In Sequence (JIS) are not the only determining requirements for supply contracts.

During the product development process, for example, Munich furnishes suppliers with specifications for components or modules for new generation models, which ordinarily run for seven years (Flor interview). The supplier that comes out at the end of the process with the best design concept for a particular component or module is selected. Lack of capabilities in process and product development means that the affected companies – in this regard, suppliers – have limited or non-existent opportunities to be selected. This is part of the reason for the emergence of global suppliers[19] (in other words, multinational suppliers) from global functional integration as pursued by OEMs in their globalisation of production.

BMW Rosslyn assembly plant's production system, VPS, has already been touched on briefly, in terms of the 100 per cent workload factor that is required of workers. VPS is BMW's global production system, and therefore part of the strategy for standardisation under functional integration. However, different country conditions determine the impact, pace and extent to which elements of global production systems can be implemented. According to Konrad Siegel (interview), an IG Metall official who is also renowned as a German specialist in labour economics (International MTM Directorate 2005), in Germany work standards are not left to management as such; the union is also involved. It defends worker interests even in the design and implementation of work standards. In

[19] As reflected in Chapter 3 of the present study, from Sturgeon and Florida (2000) and Veloso and Kumar (2002).

the main, central to this is ensuring that work standards are fair, and prioritising the health and safety of both work and worker in terms of both short-term and life-long implications and repercussions. This involvement happens through participation in work standards-setting bodies such as a Methods Time Measurement (MTM) association, as well as through co-determination at plant level. In South Africa, by contrast, this has not really been on the agenda.

For instance NUMSA defends members in disciplinary hearings, bargaining councils and the Commission for Conciliation, Mediation and Arbitration (CCMA) against charges of poor work performance, or in cases of dismissal on the grounds of incapacity – but all according to work standards that have been determined by management.

Negotiating work standards and standardising them across sectors can contribute to preventing negative impact of work. This negative impact could also be as a result of the elements of the production systems implemented by MNCs as they advance functional integration. Linked with this, Chapter 3 drew in, among others, a point made by Blum (2009): that MNCs that respect worker rights and labour standards in one country are not immune from undermining them in another. In order to engage on the issue of work standards, however, NUMSA would need to develop its capacity as well as alternative content with regard to work standards.

In Rosslyn, BMW's production system, VPS, has as its major elements JIT (and JIS), called *kanban* at Japan-based Toyota (Womack et al. 1990); continuous, incremental improvement (KVP), *kaizen* in Japanese (Womack et al. 1990); as well as an emphasis on elimination of waste – in Japanese, *muda*, which encompasses wasted effort, materials and time (Womack et al. 1990). The emphases drawn from Womack et al. (1990) are used to highlight the influence of lean production as pioneered by Toyota (discussed in Chapter 3). According to Flor (interview), BMW identified seven areas of waste:

- Stocks – which must be eliminated between work and production processes. Hence the emphasis on JIT and JIS, both in-plant and from suppliers.

- Waiting – no worker must wait for parts, colleagues (punctuality) etc. This appears to be Ford's ideal of the worker having every second necessary but no single second unnecessary.
- Overproduction – and hence Production To Order (PTO). No vehicle is produced without an order. Thus, there are flexible production volumes in terms of market conditions – demand in the main.
- Space – must not exceed the size of any respective production activity.
- Walking – during work processes, workers should not walk or make movements that are non-value adding. In other words, automotive parts must be easily reachable by a hand, without any other bodily movement.
- Transportation – all transportation that can be avoided must be avoided. Transportation cost must generally be reduced where it cannot be completely avoided.
- Defects and rework – must be avoided.

All of these areas are interlinked. Flor (interview) summarises this as follows: 'Anything that a customer would not buy must be avoided during production. Everything must add the value that a customer would buy. Basically, it is for that which BMW invests in production'. As stated formerly when reflecting on the AP and absenteeism, some of the measures adopted to realise improvements in some of the above areas could, however, have a negative impact, in encouraging overwork.

BMW South Africa and Methods Time Measurement

In August 2008 I visited BMW South Africa's Rosslyn assembly plant. At the time it was reported in a meeting that the company did not use MTM as part of its production system in Rosslyn. This was despite having adopted the system in Germany. During the current research visit, NUMSA shop stewards (interview: 9 December 2009) stated that the company is now using MTM.

MTM was initially developed during the 1940s and became both the means of study for analysing work processes and motions, and a work organisation system for developing

manual work motions and procedures with predetermined times (International MTM Directorate 2005). MTM principles are related to ergonomics, its work motion specifications are based on work health and safety, and the approach is also adopted to optimise work processes. The system is unlike the stop watch system, which is often used to reduce work cycle times in order to increase workload and thereby intensify work.

However, the International MTM Directorate (2005) recognises that as the system spreads, increasingly errors slip into its application. Therefore, like any other work methods system, MTM requires strong and capacitated unions (as described by Siegel, interview) in order to intervene in the design, development and alteration of work processes in the best interests of members. This further emphasises the need for the union to build capacity with regard to work and production organisation and associated change, including change in work processes.

New investments and changes in work and production organisation

In the automotive industry, the period between old model run-out and the introduction of new models is a critical one for new and major rounds of change in work and production organisation. This period also involves employers' (which are mainly MNCs) demands for concessions from unions, in the name of securing production volumes that are centrally allocated from respective headquarters, and thus presents a challenge to unions such as NUMSA that have resolved to negotiate production volumes.

When preparations for the present study were under way, BMW South Africa announced an investment of R2.2 billion for the Rosslyn assembly plant. This is mainly for facilitating the introduction of a BMW 3-series new generation model. According to Flor (interview), a third of this investment will go to infrastructure upgrading; another third to new processes and machinery, including body shop fixtures, robotics and new equipment generally; and the last third to tools to be used for new generation parts (especially body parts) by particular suppliers.

During this study I did not come across evidence in BMW Rosslyn's assembly plant to suggest that NUMSA shop stewards have been involved in negotiations over the new plant machinery and are able to influence related change. The same applies in the case of the three BMW South Africa suppliers that are covered in this study: Venture, ZF Lemförder and Lear Corporation.

The point concerning investment by BMW in tools to be used by suppliers is important to highlight. In other words, the situation is that the respective suppliers use their own machinery, but that the tools fitted on this machinery are not only for BMW models but are also BMW-owned. One reason for this, according to Flor (interview), is that should a supplier go bankrupt BMW does not want to be found wanting in terms of tools. Therefore, the thinking goes, owning the tools for its products supplied by the particular suppliers will provide BMW with leverage in terms of responding flexibly under such circumstances by swiftly changing suppliers.

In terms of the labour process turned into a process whereby capitalists consume labour power, we have here one of the two characteristic phenomena identified by Marx (1990/1867), as discussed in Chapter 2 of this report:

> the worker works under the control of the capitalist to whom his labour belongs; the capitalist takes good care that the work is done in a proper manner, and the means of production are applied directly to the purpose, so that the raw material is not wasted, and the instruments of labour are spared, i.e. only worn to the extent necessitated by their use in the work. (Marx 1990/1887: 291)

This phenomenon is extended by OEMs and applies also to situations where suppliers use tools (part of the instruments of labour) that belong to OEMs. Flor (interview) states that in the use of its tools, BMW demands accountability. As part of this, it also conducts frequent visits to respective suppliers to verify that its tools are 'spared'; in Marx's (1990/1867) words, 'only worn to the extent necessitated by their use in the work'. BMW also wants its suppliers to follow its production system or adopt its elements. And in

terms of the cost component of its contract requirements, suppliers are required to reduce cost annually by 3–5 per cent on average.

When generalised, these factors partly account for giving OEMs control and leverage that they use to effect changes in work and production organisation too in the supply side of the automotive industry value chain. Suppliers overwhelmingly depend on OEMs for business – and OEMs use this very fact to exercise control over suppliers.

4.1.4. From rigid outsourcing to flexible insourcing: Rosslyn, its suppliers and NUMSA

4.1.4.1. Flexible insourcing: how will NUMSA respond?

The experiences of rigid outsourcing and the development of flexible production as characterised by lean production elements (for example, as are to be found in BMW's production system, VPS) seem to contribute to a pendulum swing from rigid outsourcing. On this score, Siegel (interview) suggests that there seems to be a change in the definition of core and non-core operations, all within the context of flexibility. The shift from rigid outsourcing is not a shift to what can be termed 'conventional insourcing'; rather, it is a shift to *flexible insourcing*. Part of the characteristics and determinants of flexible insourcing appears to be the balance of cost evidence and the character and units of competition (the competitive struggles between capitals in the same branch of industry for a market share) at each point in time.

For reasons located in this broader perspective, Flor (interview) revealed that in the production of the next generation 3-series BMW, for which the R2.2 billion investment has been announced, the company will be insourcing the following components.

- Headliners;
- Front-ends, which consist of external front illuminating parts;
- Cockpits and dashboards;
- Parcel shelves;

- Centre consoles;
- Brake pipes; and
- Door trim panels.

According to the company, when these components are assembled in-plant, the associated transport cost will be eliminated, while ensuring that quality is no longer jeopardised, and the JIT and JIS systems will function more effectively. In this way I find JIT consolidating, albeit flexibly, some of the previously geographically dispersed production activities.

During the era of heightened outsourcing NUMSA opposed it. The new trend, of flexible insourcing, is likely to cause job losses somewhere down the value chain. This was an observation by NUMSA second vice president, Christine Olivier (meeting: 15 December 2009),[20] who also suggested that flexible insourcing merits further scrutiny. NUMSA's response will be very interesting to monitor.

4.1.4.2. BMW Rosslyn assembly plant, its suppliers and NUMSA

In Rosslyn I also interacted in interview sessions with NUMSA shop stewards from surrounding BMW suppliers, namely Venture, ZF Lemförder and Lear Corporation. All three are MNCs.

Venture

Venture has been moulding front-ends, which has since been taken over by SAS Faurecia, also an MNC. Venture's workforce that was involved in moulding front-ends was redeployed to the production of bumpers and side skirts, which are the main supplies of the company to BMW. According to NUMSA shop stewards (interview, 29 September 2009), the company's production facility in Rosslyn, where it employs about 200

[20] This meeting was convened to look at the report 'Changes in Production Systems and Work Methods' (Edward Webster, Alex Mashilo, Themba Masondo & Christine Bischoff 2009). This is a report of NUMSA's broader study on work and production reorganisation. The study was conducted by the University of Witwatersrand-based Society, Work and Development Institute (SWOP), with Professor Emeritus Edward Webster as principal.

workers, also supplies Ford Motor Company (FMC) with bumpers along the same lines as it supplies BMW. The production of bumpers is labour intensive.

ZF Lemförder

ZF Lemförder assembles differentials, and front and rear wheel axles and supplies them to BMW. Production in this facility is more a case of component assembly than manufacturing. The parts that are assembled into complete sets of differentials, and front and rear wheel axles, are sourced from either second tier suppliers in South Africa or globally (as reflected above, in this chapter) including Germany, where ZF Lemförder's main first tier plant also produces parts and components.

Production at ZF Lemförder is capital intensive. This includes the use of Automated Guided Vehicles (AGVs). These are self-propelled vehicles that are programmed to move automatically from one workstation to another for workers to work on the component under production. The AVG has a fixture that holds the component under production on its passage from the beginning of the process to the end. The AGV in a way replaces where possible and plays the role of Ford's moving conveyor.

According to a NUMSA shop steward (interview: 24 November 2009), the company employs 148 workers in total. There are 78 union members, including only 1 white collar worker.

Production in ZF Lemförder presents a classic case of production system linkage with BMW. The company's continuous improvement (KVP) system, called the Lemförder Continuous Improvement Programme (LCIP), offers a reward of R500 for workers' suggestions, most of which, according to a NUMSA shop steward (interview: 24 November 2009) are cost cutting, although suggestions are encouraged in other areas as well, such as Total Quality System (TQS) and Total Preventive Maintenance (TPM).

NUMSA general secretary, Irvin Jim (Central Committee: 27 July 2009) criticised continuous improvement – KVP or *kaizen* – measures implemented by corporations as

contributing to the destruction of jobs. This was during discussions following a progress report on a broader study on work and production reorganisation in the South African automotive and components industries and German experiences. There are delegates who called for the study to be expanded to other motor industry sectors, and to iron and steel and engineering industries.

Despite the leading edge that the automotive industry occupies in terms of work and production reorganisation (whereby other industries take their cue from the automotive industry, as discussed in Chapter 3), this call was important for providing details on the realities in all the industries where NUMSA organises. By these various means the union wants ultimately to develop a coherent strategic response and build capacity on work and production reorganisation on an ongoing basis. NUMSA deputy general secretary, Karl Cloete, has been consistent on behalf of the other National Office Bearers (NOBs) in providing leadership with regard to this undertaking.

From the interviews with shop stewards at BMW and its suppliers it is clear that there are incoherent approaches by NUMSA SSCs on corporations' production systems. For example, in terms of KVP, and within it the use of worker suggestions, in some cases there are no rewards while in others (for example, at ZF Lemförder and BMW), there are. Without intervention in the form of a coherent strategy to guide all of its shop stewards across sectors, though, even the rewards could encourage suggestions that might end up posing challenges to the union (as touched upon in Chapter 3, using the example of VW). NUMSA is also yet to develop a strategic response on these rewards.

A NUMSA shop steward (interview: 24 November 2009) at ZF Lemförder also stated that pressure is building up because the BMW 3-series model that they have been supplying will soon run out. As a result of this pressure, which includes increasing demands for cost cutting and quality, ZF Lemförder has asked workers to support it to acquire the supply of new generation components to BMW. This support requires that workers participate actively in, among other things:

- Reducing overtime hours by limiting breakdowns, improving punctuality and reducing absenteeism. (Again in this, as at BMW, *causes* of absenteeism were not interrogated.)
- Reducing cycle time. This would mean increasing units per hour, and might lead to overwork and certainly to work intensification.
- Improving quality.

These are just part of automotive companies' (both assembly and suppliers) requirements or demands for concessions from unions, particularly during times of old model run-out to support the competitive struggle for securing higher volumes for new models.

Lear Corporation

The stakes are up: welcome to confrontation at work

My mother was a kitchen girl
My father was a garden boy
That's why I'm a communist
A communist

These are the lyrics of a revolutionary song by striking workers at Lear Corporation (11 November 2009). This song was used as a changeover between all the other songs. Workers continued protesting by singing revolutionary songs and, very interestingly, also gospel songs, and blowing whistles while working. Management tried to stop the singing and whistle-blowing but failed. Even when told that what they were doing could result in disciplinary hearings, the workers did not stop. The more they were told to stop the more they sang; they would stop in their own time.

Lear Corporation: workforce profile

Lear Corporation has one of its production facilities in South Africa located in the Automotive Supplier Park (ASP), a few minutes' distance from the BMW assembly plant in Rosslyn. The company employs a total workforce of 772 including top, senior and

middle managers (NUMSA shop stewards interview: 11 November 2009). Of the total 772 workers, 722 are blue collar workers, and the majority are female. And of the 722 blue collar workers, 370 are employed under a labour broker, Express Professional Employment (EPE). This means that the majority of the company's workforce at Lear Corporation in the ASP (51.25%), are under labour broker employment. The other two BMW suppliers that I considered, Venture and ZF Lemförder, have STCs. I found Lear Corporation to be a worse-case scenario in terms of the use of labour brokers, in that the majority of the workforce is employed under labour broking.

During 2009, NUMSA had been one of the most campaigning unions – if not the leading campaigning union – in South Africa. This was not only in terms of its job security conferences and their subsequent programmes and campaigns in response to the global capitalist system crisis. It was also in terms of a campaign for the abolition of labour brokers.

The union's initial position on labour brokers was that they 'should be regulated and workers in these sectors should enjoy full rights and benefits of full-time workers' (NUMSA 1997: 13). NUMSA has managed to regulate labour brokers through collective bargaining, with a success in the engineering sector where workers under labour brokers are covered by the main collective bargaining agreement. However, the persistently harsh super-exploitation realities that workers experience under labour brokers had compelled the union to shift its stance completely: to demand that, and campaign for, labour brokers to be abolished once and for all.

A worker (interview: 11 November 2009) at Lear Corporation recalls starting to work for the company in 1999. At that time, she explains, Lear Corporation acquired part of ALC Automotive. When she was employed it was under a labour broker, and there was no clear answer as to how long employment under the labour broker would last, and thus whether or not she, together with other affected workers, might be employed directly and permanently by Lear Corporation. They then joined NUMSA in their numbers and she was elected a shop steward.

The worker (interview: 11 November 2009) recalls that through the union they managed to move out of the labour broker to employment by Lear Corporation directly, and that in 2000 they equalised wages (they earned low wages under the labour broker) and established a countrywide (i.e. ASP, and Brits and Port Elizabeth plants) Lear Corporation NUMSA SSC. Lear Corporation reversed their achievements when in 2005/06 it instituted retrenchments, during which she took a Voluntary Separation Package (VSP). The worker cited loss of competition for a supply contract as one of the reasons behind the retrenchments; the company that won the contract was, according to the worker, paying low wages as it used labour brokers.

When Lear Corporation re-recruited it used a labour broker, and hence the majority of its workforce are presently under this labour broker, EPE (worker interview: 11 November 2009). As for her, she was re-recruited under EPE in 2009. Under EPE, they rate R10.00 per hour less than permanent workers and, she emphasised, 'for same, equal job and hours'. She did not mention the existence of any benefits. This makes it clear that flexibility is not the only outcome that employers using labour brokers, STCs and APs want. Cost cutting in terms of labour – in other words, pressing down variable capital and with it necessary labour – is among the underlying objectives.

The worker (interview: 11 November 2009) believes that labour broking makes her share wages with somebody who does nothing but paperwork at EPE. In this way, therefore, she argues, labour brokers' profit-making is driven by expropriating a portion of workers' wages. She is determined to see labour brokers banned. Workers under the labour broker, EPE, at Lear Corporation are NUMSA members, and have elected their shop stewards, including her. For her this is an important step in carrying out workers' coordinated struggle against exploitation.

On 7 October 2009 South Africa's Parliamentary Portfolio Committee on Labour held hearings that I attended in Germiston (Gauteng Province). NUMSA general secretary, Irvin Jim, was the last to speak, late in the evening. This was after labour brokers had

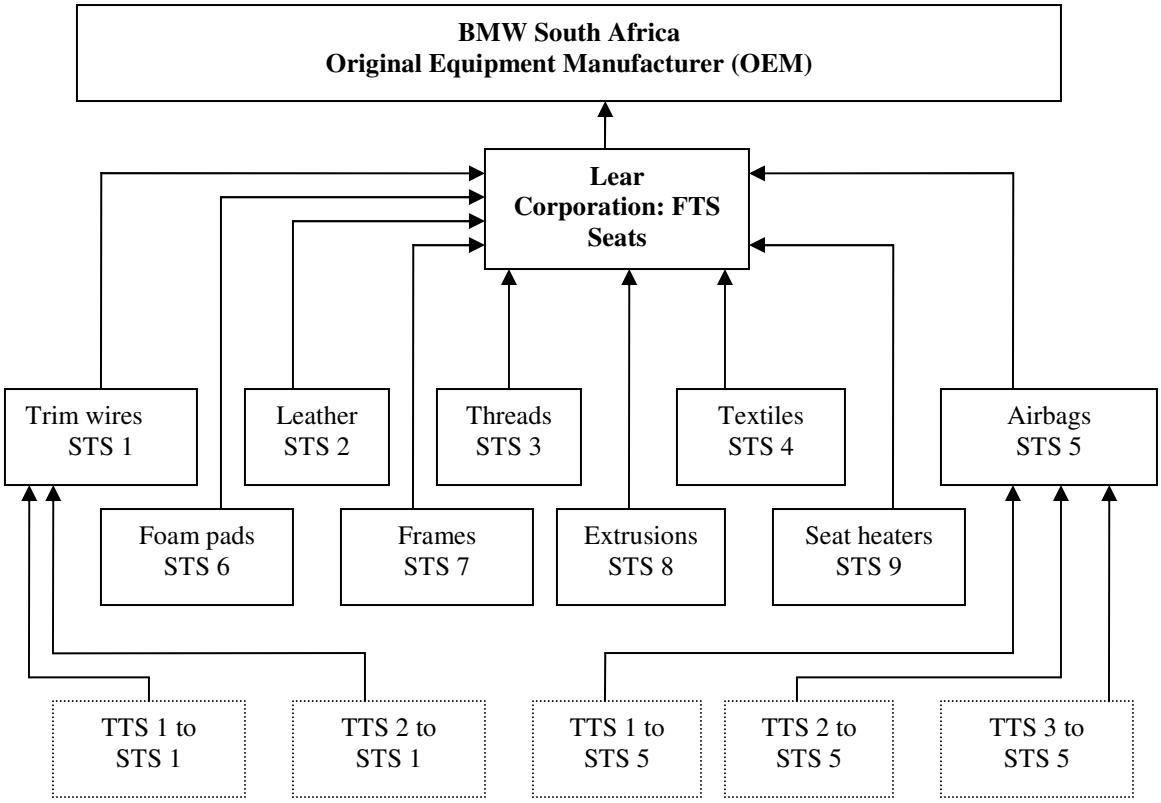
made submissions to justify their existence and workers employed under labour brokers had made verbal submissions to oppose labour brokers. All of the workers related their firsthand personal experiences of brutalisation of work by labour brokers. They all called for labour brokers to be banned through an act of parliament. Irvin Jim categorically stated that should parliament not abolish labour brokers, NUMSA, as part of COSATU, would abolish them through a street-level revolution. He was also speaking on behalf of COSATU.

Lear Corporation: production and production system

Lear Corporation supplies complete seat systems to BMW. Assembling of seats requires, for example, parts such as foam pads, trim wires, frames, extrusions, threads, leather or textiles, harnesses (electric wire systems for electronic seat adjustment), airbags and seat heaters. Lear does not manufacture these parts itself. Like the other first tier suppliers, it sources parts from second tier suppliers.

Using Lear Corporation as but one example of a First Tier Supplier (FTS) to BMW, Figure 4.2 depicts this scenario, with each part coming from its respective specialist Second Tier Supplier (STS). There are also some Third Tier Suppliers (TTS). The suppliers across all tiers would obviously multiply, were not only seats but all of the components supplied to BMW to be considered. Because of global sourcing, too, the geographic depiction of this prevailing scenario will make a complex chain of value-adding activity – global production networks and logistics.

Figure 4.2: First tier supplies to BMW South Africa



Except for the FTS, all other suppliers are suppliers of suppliers, as discussed in previous chapters.

Lear Corporation uses Six Sigma methodology as part of its production system, in a bid to increase business performance, and has also adopted lean production. In this regard, for instance, NUMSA shop stewards mentioned KVP, Total Quality Management (TQM), and also JIT (along with JIS) – as depicted in Figure 4.2 by the arrows.

JIT and JIS

The supplies from the three suppliers (namely, Venture, ZF Lemförder and Lear Corporation) to BMW are delivered JIT and JIS, as BMW requires. To facilitate this, among other strategies the three suppliers have part of their workforce based full-time in BMW assembly plant premises, called a JIT Area. According to NUMSA shop stewards,

from these suppliers and BMW, the suppliers' workforce in BMW receives, conducts quality control on and sequences the respective supplies to assembly lines.

Sequencing must be such that the supplies are delivered to assembly lines not only JIT, but also JIS. In terms of JIS, the supplies must be synchronous with the assembly line production schedule and match the component options required. For example: if a vehicle requires black leather seats and a white bumper, then no other seats but black leather seats and no other bumper but a white bumper must be delivered at respective workstations JIT. Sequencing and synchronisation are at the heart of JIS. Among other factors, design options and colour matching are central to JIS.

The vulnerabilities of the JIT system

On 11 November 2009 during my research visit to Lear Corporation, workers had not long returned from a temporary lay-off as a result of the global capitalist system crisis that led to recession and a downward spiral in production output. BMW also governs its supplies in terms of flexible production schedules. On this basis, the company cut down on supplies during the 2009 economic downturn, and hence the temporary lay-off in its supply chain. This affected Lear Corporation workers as well.

Upon workers' return from the temporary lay-off at Lear Corporation, the company implemented benefits deductions from affected workers' first pay. This caused a dispute: on one side, workers claimed that ordinarily the company would not do that, but would pay the deductions for them; on the other, the company rejected the workers' claim.

The workers then embarked on strike action without following legislative procedures in terms of the LRA. Production stopped and no amount of pressure by the company could convince the highly militant NUMSA members to desist from the strike with immediate effect.

Lear Corporation has a two-shift system that is synchronised with that of BMW; and it took almost the entire morning shift after the strike had begun to get workers to resume

production. The NUMSA Rosslyn organiser and the Local Office Bearers (LOBs) had to intervene through a Factory General Meeting (FGM). While this meeting (which I also attended) was taking place, the afternoon shift was already coming in and they, too, demanded clarity. An intense discussion leading to a near-stalemate broke out in the meeting. This was prompted by feedback from consultation with management. Part of the reasons why the deductions could not be reversed was that such a decision, according to management, did not fall under the jurisdiction of Lear Corporation in Rosslyn's ASP, but was rather a decision to be made by the Lear Corporation's Europe offices. As a result there was a strong view in this meeting that management in the ASP was not entitled to the name because it could not make financial decisions. The discussion of this took the meeting substantial time. There was also a proposal that until such a decision was made the strike must continue. It took a long time for the workers to decide finally to return to production – albeit slowly. This episode exposed the weak links within the centralisation of decision-making under MNCs' headquarters or global regional offices, which is the driving strategy for functional integration; as well as the vulnerabilities of the JIT system. BMW was running production and needed seats from Lear Corporation.

Again on 24 November (during my research visit to ZF Lemförder), a NUMSA shop steward reported that on 9 November 2009 BMW had had to stop production for about 25 minutes because of wrong sequencing from ZF Lemförder. As is the case at Lear Corporation and other suppliers, ZF Lemförder's production schedules and working time patterns are tied to those of BMW, with which they flexibly fluctuate as and when BMW presses any button, up or down.

The wrong sequence from ZF Lemförder disrupted the JIT and JIS system, which thereafter had to be corrected, first for production to run smoothly between the supplier and BMW, and then within BMW itself. For this error, ZF Lemförder charged a worker, whom the union would have to represent.

JIT (and JIS) was developed as a solution to production impediments and has advanced work and production organisation to new levels. However, as mentioned earlier, by virtue

of its inherent vulnerabilities the system itself presents impediments, which can provide unions with fresh grounds for developing new organising strategies. This is with particular reference to the power that unions can derive from the vulnerabilities of JIT as a logistical system. The application of this logistical power can thus be strategic for unions.

JIT Areas and NUMSA

From interviews with NUMSA shop stewards from BMW, ZF Lemförder, Lear Corporation and Venture I can, however, also conclude that NUMSA itself has not yet worked out a comprehensive new organising strategy in terms of a change in production organisation as reflected in JIT, particularly JIT Areas.

For instance, despite the fact that workers from suppliers in JIT Areas – assembly plant premises – are NUMSA members, they are not coordinated. When the union convenes an FGM at BMW, these members do not attend. These members also do not attend when the union convenes FGMs in respective suppliers. They are just not invited. When NUMSA holds shop steward elections, these members are not there in their respective supplier premises to vote. Their respective NUMSA shop stewards from suppliers also reported that they had not visited the workers in the JIT Areas.

4.2. BMW, Regensburg and Wackersdorf (Germany)

IG Metall's engagement on work and production organisation takes place in a different context to that of South Africa. The German industrial relations system can be characterised as a dual system: in an industry-wide sphere, unions negotiate wages and conditions; and in the plant-level sphere, Works Councils enforce labour regulations and collective agreements, and negotiate plant-level contracts within the legal context of co-determination (Webster et al. 2009).

This approach differs fundamentally from the situation that pertains in the NUMSA context, where bargaining is sector- and even employer-based, but where the two

functions – namely, wage and conditions negotiations, on the one hand, and enforcement of labour regulations and collective bargaining agreements, and negotiation of plant-level agreements, on the other – rest directly with the union. At the plant level, NUMSA exercises this through shop stewards and SSCs. However, and as further discussed in this section, the report by Webster et al. (2009) suggests that IG Metall is in charge of the Works Councils. This to some extent minimises the difference between how the two unions operate, except with regard to co-determination, which is also further reflected on in this section.

Regensburg and the Wackersdorf components plant

BMW has a components plant in Wackersdorf, which is situated 60 km from the Regensburg assembly plant.

The Wackersdorf plant produces dashboards for BMW 3-series and supplies them to Regensburg and other BMW plants. It directly employs 800 workers, 400 of whom are in production. The other 400 are in logistics, dedicated to shipping, exports and other logistical functions.

The Regensburg assembly plant directly employs 8 700 workers. It has a training centre with 300 apprentices. Next to the training centre in the assembly plant is a daycare centre for workers' children. Very interestingly, especially after the era of rigid outsourcing, the canteen in Regensburg is owned and operated by the company directly, and thus the workers in the canteen are employed directly by BMW. Food from the canteen is also subsidised. (Meal prices range from €2.50. Outside they range from €7.00.)

According to Johannes Metz (interview and presentation), a Works Council member and IG Metall shop steward, the workforce in Regensburg and Wackersdorf together totals 9 500. Approximately 6 300 of those, inclusive of both blue and white collar workers, called 'associates' (as in Rosslyn, according to Masondo 2003) are IG Metall members. Unlike NUMSA, IG Metall has significant presence among white collar workers. The union leverages the technical skills base of its members in all employment categories and

at all levels to formulate, advance and defend its positions on changes in work and production organisation.

The German system of labour relations and co-determination provides for a Works Council. Elections are held periodically and are contested by unions (where more than one union exists) as well as by individual workers. A Workplace Forum as legislated in South Africa's LRA is in a way similar to the Works Council system. However, South African unions under COSATU, NUMSA included, have consciously decided not to trigger this model because of the disadvantages it might have under South African conditions of the history of the apartheid workplace regime.

In BMW Regensburg assembly and Wackersdorf components supply plants, IG Metall has 300 shop stewards. In the 37-member Works Council, 36 are IG Metall members. IG Metall is overwhelmingly the majority union not only at BMW, both Regensburg and Wackersdorf, but also in each of the respective sectors in which it organises (as reflected in Chapter 3). This is confirmed, for example, by other automotive assembly and components companies that I visited as part of the research tour. In the 13 195-strong workforce at VW's fully-fledged component manufacturing plant in Kassel, where the union has 450 shop stewards, of the 39-member Works Council, 35 are IG Metall members. In the 5 514-strong workforce at Mercedes Benz in Rastatt assembly plant, all 33 Works Council members are IG Metall members; and in the 6 555-strong workforce of Mercedes Benz Rastatt's and Gaggenau's fully-fledged components manufacturing plants, where IG Metall has 330 shop stewards, of a joint 33-member Works Council, 30 are IG Metall members. In terms of IG Metall shop steward policy, all of its members who are forwarded to Works Councils are automatically shop stewards (BMW Regensburg Works Council presentation: 13 July 2009). Thus, over and above taking charge of Works Councils, IG Metall has strong leadership presence at shop floor level, as the numbers illustrate.

However, the big workforce numbers from which IG Metall derives its membership reflect a structurally strong economy and the contribution of the automotive industry to

employment in the country. Germany's economy is far superior to South Africa's. Germany's economic position was briefly discussed in Chapter 3. As Straubhaar (2007) points out: 'Germany is one of the most highly developed industrial nations in the world and, after the USA and Japan has the world's third largest national economy' (2007: 91).

To return to IG Metall's strong leadership presence on the shop floor, its many shop stewards play an important role in the direct and indirect linkages that the union's Works Council members have with the rest of the workforce. The IG Metall Works Council members regularly meet with the union's other shop stewards to discuss the state of upcoming developments and to share perspectives.

Consistent with legislative provisions, the Works Council has, among its committees, a Works Committee. This committee has 11 members who, together with 2 others, serve on a full-time basis. 'But in practice all other members of the Works Council are full-time', asserts the Works Council (presentation: 13 July 2009). The Works Council determines its other committees and their roles. Interestingly, there is a committee called Ideas Committee. This can be seen as a direct organising response to the way companies are adopting lean production – especially KVP – and, within it, worker suggestions.

The Ideas Committee is involved in monitoring worker suggestions that management gather in terms of KVP. The committee monitors the impact that each one of these suggestions could have before they can be implemented. However, once the Ideas Committee is satisfied that a suggestion will not bring about unintended consequences it attaches a monetary value to it and the company must pay for adopting it. Not all suggestions have the same value. In this way the union can be said to be intervening to mitigate exploitation at the level of brain work and preventing its outcomes from being used negatively, i.e. against other workers. So there is gold in workers' heads that needs protection; this is the approach that the Works Council has taken.

The production system in Regensburg and Wackersdorf is the same as in Rosslyn – VPS. This reflects global functional integration. In this, though, the union uses the Works

Council to intervene in work process design and work organisation changes. For this it draws on the existing work organisation institutions as discussed, such as the German MTM Association and co-determination at plant level.

BMW Regensburg: production capacity and system

The Regensburg assembly plant produces two BMW models: the 1-series and the 3-series. Unlike Rosslyn, Regensburg has its own Press Shop, where automotive body platforms and mainframes are manufactured from metal sheets that are sourced from the supply base. Small automotive body parts are sourced completed.

Within the company's product variety, there are some derivatives that use similar under-body platforms. This provides the company with technological flexibility in so far as certain stages of manufacturing and assembly operations are concerned. This means that at some stages of the production process such models are worked on using the same technological instruments and workstations.

As in Rosslyn, the Regensburg assembly plant is highly automated and production is capital intensive. However, the Regensburg workstations are constructed according to ergonomic standards. And according to the Works Council (plant tour: 14 July 2009), workstations continue to be modified in terms of evolving ergonomic standards. The Regensburg assembly plant lines have, for instance, the moving conveyor lines automatically lifting units for workers' reach without requiring workers to bend (bending could have long-term health and safety repercussions for the worker). The Works Council's emphasis on ergonomics, health and safety standards is also used as a strategy to engage the company as and when it wants to introduce new or to alter existing machinery.

Just as in Rosslyn, in the Regensburg assembly plant non-value adding movements in terms of VPS are eliminated from work processes. Here, however, the Works Council exercises its capacity to intervene. According to a questionnaire I left behind, which was completed and then emailed back to me, through intervening with the right level of

capacity the Works Council is able to avoid work intensification, which is a health and safety hazard. In the absence of capacitated intervention by unions, companies can use work intensification as a measure to raise productivity.

A problem that the Works Council reported, though, is work monotony. In response to this the Works Council has ensured that there are rest times (6.5% personal time) during work processes and, in addition, that there is a rotational system to avoid repetitive strain injuries. However, the Works Council reported that it has yet to deal decisively with work monotony because this has many aspects to it, including the fact that it renders work uninteresting.

The Works Council has also ensured that the company builds special workstations. Called social workstations, these are work areas that are adapted to accommodate workers with disabilities, workers with particular health issues (e.g. workers who have just returned to work from surgery), and those older workers who are about to retire and who are not able to conduct their work on ordinary production lines due to a medical condition.

As reflected in Chapter 3 (in the section on union membership), unlike NUMSA, which has a young membership profile, the majority of IG Metall's members are old workers. This reflects life expectancy rates in the two countries. According to Stats SA (2009a), the country's life expectancy at birth is on average estimated at 53.5 years for males and 57.2 years for females; and according to the Federal Republic of Germany's (2007) official booklet, *Facts about Germany*, the country's life expectancy is on average 77 years for males and 82 years for females.

BMW Regensburg assembly plant and its suppliers, and Works Council responses

Regensburg coordinates over 550 suppliers, including BMW's Wackersdorf components plant. As if it is not part of BMW, the Wackersdorf components plant is placed in competition independently of other suppliers. This means that to secure components from BMW headquarters (Munich), Wackersdorf has to comply with the requirements to cut

costs by 3–5 per cent per annum, improve productivity, reduce transport costs, and meet quality standards and delivery schedules through JIT, as BMW requires of all its suppliers. These are the same requirements that apply to suppliers in Rosslyn, as already discussed.

As in Rosslyn, Munich plays a global sourcing role for the entire company through its global central sourcing department. The Works Council (presentation: 13 July 2009) states that notwithstanding Munich's central role in sourcing, the company's assembly plants are also allowed to procure components on their own provided that such will come at lower cost, high quality and the same delivery standards (namely, JIT). The same situation pertains in Rosslyn.

The Works Council (presentation: 13 July 2009) points out that the economies of scale that suppliers sourced by Munich have in place constitute a competitive advantage over suppliers at the assembly plant level. In this way, global sourcing remains BMW's key defining feature in terms of the governance and coordination of the supply chain.

The strategy of global sourcing is correlated with multinationalisation of suppliers. This has already been discussed under the section on Rosslyn. In addition, global sourcing allows for supplies to be sourced from areas where production costs are low, and thus at low cost. Barnes (interview) states that the cost of material inputs (raw materials) is restricted as it is controlled by the market on different workings, and therefore that suppliers do not have control over it as such. Thus, apart from economies of scale and productivity,[21] pressing down variable capital and along with it necessary labour[22] is one of the central instruments for low cost production.

In terms of further impact on workers, pressures that OEMs exert on suppliers compel the latter to respond by restructuring, which affects workers.

[21] Productivity, as discussed in Chapter 2, can be raised by reducing necessary labour time, i.e. the time it takes under particular social conditions, including skills and instruments of labour, to produce a particular commodity.

[22] 'Variable capital' and 'necessary labour' – in this instance, this means wages and the time it takes to produce them.

Changes in the assembly plant compel the supply chain to adapt. For example, production capacity underutilisation in Regensburg as a result of the economic crisis in 2009 resulted in the assembly plant reconfiguring hours of work and shift-work patterns. Hours of work were cut down and a three-shift (relay) working pattern was converted into a two-shift pattern. The principle of flexible production, which is underpinned by the flexible supply volumes requirement that is demanded of suppliers by the assembly plant, leaves the Works Council (which, as we have seen, in this case effectively means the union) and with it the union itself in the supply chain with very little room to manoeuvre in terms of changes imposed by assembly plants. The same applies in Rosslyn between BMW and its suppliers.

This principle ties fluctuations in production volumes of the assembly plant to components suppliers, and transfers such fluctuations with very little delay to those suppliers. In the forward linkage (sales of CBU vehicles) it is based on PTO and on the backward linkage it is based on a components pull system – no components are sourced without vehicles to build. This is among the factors that lead to what Bonacich and Wilson (2008) argue is contingent production, which has negative impact on workers; for example, in terms of temporary lay-offs during downturns. However, the impact of temporary lay-offs on workers is dependent, among other things, on union organising, bargaining strategies and content, and country context.

For example, in Germany the unemployment social security system is designed to intervene by augmenting wages when there is a cut in hours of work during downturns. The Works Council (presentation: 13 July 2009) in Regensburg stated that the unemployment social security system pays 60–67 per cent of wages lost due to reduction of working hours as a result of downturns.

As in Rosslyn, in Regensburg and Wackersdorf BMW has a WTA, the savings from which are used to top up the social security benefit. Unlike in Rosslyn, though, the WTA account in Regensburg-Wackersdorf is negotiated, as Flor (interview) states. There is

something interesting here, however; the WTA in Regensburg-Wackersdorf operates in one way and in Rosslyn in another way, in that the Rosslyn workers are not entitled to particular benefits to which workers in Regensburg-Wackersdorf are entitled.

For example, under the WTA agreement in Regensburg-Wackersdorf (unlike in Rosslyn), should employment be terminated for any reason, including resignation, the company simply writes off any negative balance that might have been made under an advance, instead of recovering it from the worker's separation funds.

Further, in Regensburg-Wackersdorf, the Works Council monitors overtime trends. This is not just across the whole workforce but also across individual workers. In terms of this, the Works Council can advise a worker to stop working overtime. This could happen when the worker is exceeding the maximum overtime hours that can be banked. Again, unlike in Rosslyn, hours banked can be used for vacation leave. If overtime is becoming perpetual, the Works Council calls on the company to bring in trainees from the training centre, or (which can be a controversial issue) to employ temporary workers for the duration that specific overtime is likely to last.

By these measures the Works Council seeks to prevent the potential negative impacts of the WTA as an instrument of flexibility.

Penalisation of suppliers for non-compliance

Another factor defining coordination of activities between the Regensburg assembly plant and its suppliers is penalties – the extreme penalty being cancelling the supply contract. With regard to the Rosslyn assembly plant, Flor (interview) stated that, particularly when old contracts expire, they are often not renewed. In Regensburg, if components from a supplier are found to be below the quality standard, from that moment on the assembly plant conducts consistent quality routines on that supplier's components. The supplier is compelled to pay for this. Should quality not improve on two occasions, the contract from that supplier is terminated and placed on auction. Once this happens, that particular supplier's workers stand to lose their jobs.

Combined with hyper-competition, pressures from assembly plants can mount to a point where a supplier faces a real threat of closing down (Works Council presentation: 13 July 2009). In such circumstances there is a general bargaining arrangement called *Pforzheim*. This is the equivalent of the exemption provision in the NUMSA bargaining landscape. In terms of *Pforzheim,* employers are allowed to apply to the head office of the union via locals for an exemption that would permit them to pay wages below the provisions of the industry-wide collective bargaining agreement. As required by the union, the *Pforzheim* process must be public. The union appoints its own auditors to verify the affected company's books. Exemption is limited and short-term in nature. The union demands a turnaround strategy before considering an application for exemption. This strategy must not pass loss on to workers; if it does, exemption is denied.

In NUMSA's case, exemption applications are not made to the union directly but to the bargaining council.

Regensburg and Wackersdorf: bargained and flexible insourcing

This sub-section examines insourcing of illuminating components, and regular meetings between the Works Councils of the assembly plant in Regensburg and the supply chain Works Councils, as well as IG Metall's response to productivity and related restructuring. Regensburg-Wackersdorf assembly and components plants Works Council adopted insourcing as part of a strategy to counteract any reduction in the workforce that could result from productivity improvements and work and production organisation changes. The same was found with regard to the Works Councils of VW in the Kassel components plant, and Mercedes Benz in the Rastatt assembly and components plants and the Gaggenau component plants during the research visit for NUMSA's broader project on work and production reorganisation (Webster et al. 2009).

At BMW, dashboards and illuminating components were previously outsourced. As a result of the pressure from the Works Council in terms of the productivity agreement, the company was compelled to insource the new-generation dashboard of the 1-series model.

This means that when the new 1-series model is launched, Wackersdorf will be producing the new dashboard, in addition to the 3-series model that it is currently producing.

According to Siegel (interview), on the subject of upcoming insourcing in Rosslyn, the insourcing of dashboards reflects a change in the definition of what companies referred to as 'core operations' at the height of rigid outsourcing. In addition, dashboards are now viewed as offering a competitive advantage. With new discoveries in information and communication technology, automotive vehicle dashboards have come to occupy a cutting edge position in the competitive struggle. Although a trend in the automotive industry is that new developments in one brand are followed by the same developments in other brands, the company that moves first gains a short-lead competitive advantage. Dashboards are now integrated modules that include mobile phone devices, navigation systems, parking aids, DVDs, digital rather than analogue components and so on.

The Works Council demand for insourcing was endorsed by a newly appointed Regensburg assembly plant director in a Workers' Assembly (General Meeting) that I attended (14 July 2009). Addressing the meeting, the plant director stated that one of his objectives was to develop the plant to manufacture other components in-house. In this way, insourcing has been made part of the company's strategy in Regensburg and Wackersdorf. As reflected under Rosslyn, though, this shift appears as flexible insourcing. In Regensburg, BMW appears to be using this shift as a bargaining chip, to try to draw concessions from the Works Council.

Works Councils: responding to the pressures of work and production changes

The Works Council in the Wackersdorf components plant demanded a joint Works Council with the Regensburg assembly plant because both the facilities belong to BMW (Works Council presentation: 13 July 2009). This response came as a result of pressures exerted by the OEM over the supply chain, in which the Wackersdorf components plant had been, as highlighted, placed independently in direct competition with other suppliers. Now the two Works Councils form a joint Works Council – the Regensburg-Wackersdorf Works Council. This Works Council is used strategically to try to offset BMW's own

components plant in Wackersdorf from the general pressure that the company exerts over its supply chain.

The BMW Regensburg-Wackersdorf Works Council also reported that it holds meetings with the Works Councils of other suppliers. These meetings are used to share information and develop collective responses. One of the challenges that face these meetings is that the assembly plant Works Council is unable to intervene in terms of which supplier should get a contract, and by design it cannot. Again, even if a supplier is awarded a contract, there is no guarantee regarding to which of its plants the supplier will award production volumes. The suppliers also have multiple production plants that are in competition with one another. The one among the company's plants that illustrates a competitive advantage gets awarded the contract or the greater portion of its volumes. The Works Council (presentation: 14 July 2009) in Regensburg also reported that there is a deepening problem of brokered labour in the supply chain. IG Metall is still searching for ways to respond to this.

Similarly, as assembly plants squeeze their own dispersed plants and suppliers so too the suppliers squeeze their own dispersed plants and suppliers. As already discussed, Flor (interview) underlined the pressure exerted on the BMW Rosslyn assembly plant from this internal competition (i.e. intra-MNC global competition).

Very interestingly, in another company, the VW Kassel Works Council (presentation: 6 July 2009) reported that their response to this phenomenon is that they do not take contracts shifted from the company's other plants. They extended this to strike situations; that is to say, if one of the VW plants is hit by a strike, the VW Kassel Works Council does not accept additional volumes shifted and overtime prompted by such a strike.

There is a wealth of data available with regard to unions deliberately exploiting the vulnerabilities of the JIT system, not only in the BMW Rosslyn and Regensburg cases, but also in other plants in Germany that were not part of the scope of my study but were included in the research visit. These plants are Mercedes Benz (three plants, one for

assembly, and the other two for components in Rastatt and Gaggenau) and VW (for components, in Kassel). IG Metall's strike action in Rastatt is a classic example of the union consciously exposing the vulnerabilities of the JIT system, and for this reason is worth citing here.

IG Metall (Rastatt): exposing the JIT system's vulnerabilities

IG Metall's LOB in Gaggenau, Roman Zitzelsberger (interview), recalls an incident where one of the suppliers refused – on the basis of non-recognition – to bargain with the union. The union responded with strike action. Mercedes Benz in the nearby Rastatt assembly plant could not obtain its parts JIT and had to stop production. Flexible production principles meant that the company had to stop all of its JIT supplies. For this reason, Mercedes Benz and the other affected suppliers, according to Zitzelsberger, all exerted pressure on the intransigent supplier for jeopardising production by refusing to bargain with the union. Within three hours the supplier had done a complete about-turn, inviting the union to talks; and subsequently the supplier has been compliant.

CHAPTER 5
CAPITAL, REAL SUBORDINATION AND LABOUR

Throughout this report and all of its chapters I have presented findings and conclusions, but some merit further emphasis.

Economic exploitation for private capital accumulation and the competitive struggle that is fiercely taking place between capitals for the maximum surplus-value are part of the defining elements of the base. Global functional integration is part of the central superstructure drivers of changes in work and production organisation in the automotive industry, under globalisation processes (as discussed in Chapter 3).

In this, while standardising what is beneficial to them and demanding flexibility, Multinational Corporations (MNCs) in the automotive industry tend to differently treat what is beneficial to workers. This results in disparities in conduct in different countries. The differential application of a Working Time Account (WTA) by BMW partly illustrates this point. In the Regensburg assembly and Wackersdorf components plants (Germany), if employment is terminated the company simply writes off any negative balance due by workers in terms of the WTA company advance payments. Yet, in the Rosslyn assembly plant (South Africa), the company recovers this negative balance. This is despite the fact that, unlike Germany, South Africa does not have a social security benefit for workers during temporary lay-offs that companies implement under conditions of business and economic crisis or downturn.

With global functional integration by MNCs there is a shift of strategic production and managerial decision-making to MNC headquarters. Particularly affected are some critical issues that NUMSA resolved (in its 5th National Congress 1996 and Policy Conferences 1997) must be negotiated. These issues include the following (NUMSA 1997):

- Strategic business plans;
- Production systems and, along with them, introduction of new technology, use of machines and line speed;

- Benchmarks, targets and production schedules;
- Product development;
- Work organisation and work processes;
- Company and organisational structure;
- Human resource planning; and
- Productivity and performance assessment.

Before proceeding with further concluding reflections, I wish to qualify my inclusion of human resource planning in this list of issues. At BMW South Africa, the representatives of hourly human resource management agreed, in a consultation meeting with the NUMSA Shop Steward Committee (SSC) – that without the Short Term Contracts (STCs) there was not full capacity available to run production. Nevertheless the company, pending a decision from BMW headquarters (Munich), rejected the NUMSA SSC's demand for STCs to be converted into permanent employment, i.e. indefinite contracts of employment.

Further, at Lear Corporation in Rosslyn's Automotive Supplier Park (ASP), management rejected workers' demands on temporary lay-off related deductions and payment, pending a decision from the company's Europe offices.

These human resource planning issues are among the financial decisions that are centralised under the headquarters of MNCs.

However, despite NUMSA's 5th National Congress and policy conferences generally on restructuring issues, neither in Rosslyn (South Africa), nor indeed at any of the companies that I looked at in South Africa did I find much evidence to suggest that the issues as emphasised above are receiving the attention that the union envisaged.

Using BMW as an example of a German MNC, differences between NUMSA and IG Metall can explain this. The German dual system of industrial relations, which provides for co-determination, allows for the representation of the workforce through Works Councils on company-level supervisory boards. By winning places on Works Councils,

IG Metall is able to find its way onto supervisory boards, which is where corporate governance decisions are made. Although the system is such that the majority of board members are shareholder representatives, by providing for the presence of Works Council representatives the system at least allows for the voice of the workers to be heard. Nevertheless, given the character of the capitalist mode of production (as discussed in Chapter 2), decisions ultimately go the way of the shareholders.

What unions require in order to influence decisions is a genuine worker participation model. The conditions for such a model to exist are limited under the capitalist mode of production. The real power of unions, therefore, continues to rest on their membership, coherent strategies with alternative content, and proper tactics that take into consideration the space and limitations of the day. In this regard I find it important to highlight one of the options suggested by Webster et al. (2009).

Termed 'strategic unionism' (Webster et al. 2009), under this option unions can develop their own agenda on work and production organisation. This agenda, it is suggested, should cover the workplace level, industry level and global level, and should have clearly defined and articulated alternative content, and strategies for engagement with companies, fraternal and affiliated organisations, and communities. As part of this, it is further suggested that where they have not yet started, unions can consider the following:

- Building capacity in research and development and providing for a dedicated focus on work and production organisation.
- Constantly monitoring work and production organisation.
- Devising alternatives in advance and, beyond being defensive, formulating and advancing demands in the interests of the worker.
- Conducting systematic training for shop stewards.

The suggestion regarding global-level engagement is even more important under the globalisation of production through functional integration. This would definitely require the action of more than one union globally and not only the unpacking of the weak links in companies' centralisation of decision-making at their respective headquarters. It would

also have to confront the question of different national laws that apply to workers and tend to constrain them in terms of global struggles, whereas increasingly the movement of goods is governed (as discussed in Chapter 3), by a more or less similar global regime.

The global-level engagement strategy has to be linked to action in national settings, at industry and company levels.

Tactical approaches, as emerged during the course of the strike at Lear Corporation, can be refined, developed and given leadership. Despite the fact that it was in the context of an unprocedural strike, workers at Lear Corporation were refusing to stop the strike partly pending a decision from the company's Europe offices. Management in the production facility based at the company's Rosslyn ASP did not have decision-making authority.

Further, the functional integration strategy, particularly centralisation of key decisions in MNCs' respective headquarters, leads to workers undermining local management as the latter's decision-making authority is restricted. Centralisation of strategic decision-making at MNCs' respective headquarters has the effect of reducing local management to mere messengers of union demands and headquarters' decisions – to and fro between the two. This is a weak link in the chain, and unions can develop strategies on how to exploit it. This requires further work.

On the other hand, unlike the case of public sector unions, where decisions are made within national settings, or the case of unions in developed countries that headquarter MNCs, industrial unions such as NUMSA in developing countries that do not headquarter MNCs in specific areas of production are confronted with the challenge of developing responses to the shift in and centralisation of strategic decision-making to MNCs' headquarters.

Discussing WTA and the stance of the NUMSA SSC not to negotiate it (which led to the WTA being only a voluntary scheme in BMW Rosslyn's assembly plant), Flor (in an interview on 11 November 2009) indicated that decision-making must be faster as part of

flexibility, to respond to rapidly changing market conditions. In this regard, the non-negotiation stance by the NUMSA SSC constitutes an impediment to accumulation, albeit also having other implications for the union in terms of effectively safeguarding worker interests. Again, though, unions are likely to reject faster decision-making on the decisions that benefit companies – when the decisions that benefit workers stand to be subjected to long processes on the part of MNCs' respective headquarters. The case of the strike at Lear Corporation (as discussed in Chapter 4) already indicates this.

Another weak link and impediment in the production chain is to be found, as Barnes (interview) points out, in the fact that automotive OEMs are adopting and even imposing over their suppliers, flexible production – as a superior way of organising work and production. Within flexible production, particularly noteworthy are flexible sourcing of supplies, i.e. pull sourcing: no supplies are sourced without production running where they are required in the value chain; Production to Order (PTO); and interlinked to both of the former, lean production, including specifically Just In Time (JIT) and Just In Sequence (JIS).

The strike that affected the Mercedes Benz assembly plant in Rastatt (Germany); the Strike at Lear Corporation in Rosslyn's ASP in South Africa; and the wrong sequencing at ZF Lemförder in Rosslyn (all discussed in Chapter 4) exposed the vulnerabilities of both pull sourcing and PTO – no vehicles are produced without customer orders. Further, the vulnerabilities of JIT and JIS, as well as both flexible pull sourcing of components and supply of Complete Built Up (CBU) vehicles on the basis of PTO, logically or by extension, were also exposed. JIT and JIS, flexible pull sourcing of components and PTO make it possible for a strike in a company that is located in the automotive industry value chain to cause an instant stoppage in the entire value chain. This phenomenon furnishes unions with a strategic source of power.

Pull Sourcing, PTO and JIT represent important elements of capital's solutions to accumulation impediments that arose under mass production. Yet these solutions

themselves have vulnerabilities that simultaneously represent or give rise to new impediments to accumulation.

Under pull sourcing, PTO and JIT in the automotive industry, for example, when one supplier stops, the assembly plant company – Original Equipment Manufacturer (OEM) – also has to stop production because of the shortage of associated supplies. As such, back the value chain the OEM has to stop other suppliers in terms of pull sourcing. The suppliers in turn have to apply the same action to their own suppliers. At the same time, the OEM is placed in a situation where, forward in the value chain, it is unable to meet customer orders, which underpin PTO.

This whole regime potentially offers unions a source of logistical power.

It is worth emphasising, though, that NUMSA has not developed a new organising strategy in view of JIT. Neither did I find differently with regard to IG Metall. Rather, the actions that exposed the vulnerabilities of the JIT system did not come as a result of comprehensive strategies but either as a coincidence or as a spontaneous reaction to a problem. Unions can rectify this by constantly studying changes in work and production organisation and developing medium- to long-term organising strategies, for instance, that include a focus on new sources of power, such as logistical power. In line with Webster et al. (2008), I want to argue that vital to this is the building of worker power, strong local campaigning that is linked with communities and a global unionism that challenges the logic of capital.

In the case of IG Metall and the automotive industry value chain, and specifically the linkage between OEMs and suppliers, I did find some level of coordinated response on challenges from pressures exerted by OEMs over suppliers. There are regular direct meetings between the Works Councils of OEMs and their suppliers to look at developments and plan ahead. These meetings augment union local meetings that are attended by shop stewards across sectors.

In the case of NUMSA, though, I did not find direct interaction between the SSCs, for instance of BMW and its suppliers. Neither did I find the SSCs of suppliers servicing the unions' membership in JIT Areas – assembly plant companies where part of suppliers' workforce is located to receive, conduct quality control and sequence respective supplies to assembly lines. Thus, over and above defining a new organising strategy in view of JIT's vulnerabilities, unions also have areas for improvement.

As discussed in Chapter 4 when reflecting on BMW's adoption of one of the industrial work organisation programmes – Methods Time Measurement (MTM) – I did not find evidence suggesting that NUMSA shop stewards were able to intervene effectively in this highly technical area. The automotive industry National Bargaining Forum (NBF) agreement does make provision for shop stewards to choose to undergo training in industrial engineering. However, I did not find evidence at BMW South Africa to suggest that this option was exercised as NUMSA would have envisaged when it negotiated the provision.

Related to the above, and also discussed in Chapter 4, NUMSA could consider subjecting work standards to negotiation. However, this would require developing capacity in alternative work standards, taking into consideration ergonomic factors and both the short- and long-term health and safety considerations for the worker, and taking care not to build a better environment for exploitation and facilitating private capital accumulation. If this were to be the case, the union would also have to choose whether to standardise the way work is done across industries where it organises. Different work standards might pose challenges to the union, which might in turn affect capacity. A situation in which organisers are faced with different work standards each time they enter different factories, including in the same sector, might prove unsustainable to the union.

I wish to make a point about the entrenchment of flexibility, and associated worker insecurity – flexibility as partly represented by STCs, Absentee Pools (APs) and labour brokers – all of which are part of cost cutting measures in respect of labour (i.e. measures to suppress variable capital and with it necessary labour). The basic conclusion I reach is

that in constantly effecting changes in work and production organisation in order to increase the rate of surplus-value, defend associated milestones, compete for the maximum market share and accumulate more, capital is deepening real labour subordination.

The highly flexible and insecure worker, vacillating wildly between employment and unemployment, is rendered beyond being the appendage of the machine to being essentially the appendage of production. As discussed in Chapter 4, in South Africa this takes place under conditions of a high structural unemployment rate. Moreover, I find that employer strategies such as WTA (as discussed in Chapter 4), have the effect of contributing to the deepening of real labour subordination to capital.

At the same time, though, I find workers' resistance growing in proportion and response to deepening subordination. By deepening subordination, capital is therefore at the same time mobilising labour's resistance to exploitation. In this way, capital constitutes an impediment to itself.

When faced with deepening subordination and under siege, labour tends to realise that it stands to gain by intensifying its responses. An important piece of evidence of this (as discussed in Chapter 4) is NUMSA's all-year campaigning in 2009 in response to the crisis of the global capitalist system that led to increased restructuring, retrenchments, temporary lay-offs and short-time. NUMSA's campaigning included, for instance, an intensified offensive against labour brokers, demanding that they be abolished once and for all.

When all is said and done, however, the primary contradiction between labour and capital (as discussed in Chapter 2) is unlikely to be resolved through struggles – important as they are – that in the main end up as efforts to soften the hardest edges of capital. Thus labour, within both national and global settings, faces a challenge of developing broad and deep strategy and tactics aimed at capitalism as a system. Over and above spontaneous or short-term alternatives to capital's strategies and forms for organising

work and production, this would therefore require a strategic, alternative vision to the capitalist mode of production. This implies strong programme and campaigns-based linkages with communities and other civil society formations. Without this, labour might prove to be running on a treadmill.

REFERENCES

AIEC (Automotive Industry Export Council) (2008) *Made in South Africa – Automotive Export Manual – 2008*. Pretoria: AIEC

Automobile Manufacturing Industry *National Bargaining Forum (NBF) Agreement: Wage Increases and Conditions of Employment* (for period: July 1, 2007 to June 30, 2010). Arcadia: National Bargaining Forum

Barchiesi F (1997) *Flexibility and Changes in Forms of Workplace Subjectivity: A Case Study of the South African Automobile Assembly Industry.* Master's dissertation, University of the Witwatersrand

Barchiesi F (1998) Trade Unions and Organisational Restructuring in the South African Automobile Industry: A Critique of Co-determination Thesis. *African Sociological Review* 2: 47–76

Barnes J (2000) *The Competitiveness of the South African Automotive Component Industry: Findings from the 1999 Follow-up Study*. Durban: Industrial Restructuring Project, University of Natal

Barnes J (2007) *Domestic Market Pressures Facing the South African Automotive Components Industry*. Durban: Industrial Restructuring Project, University of KwaZulu-Natal

Barnes J (2008) *On the Brink? Skills Demand and Supply Issues in the South African Automotive Components Industry*. Durban: Benchmarking and Manufacturing Analysts (B&M Analysts) South Africa (SA)

Barnes J & Hartogh T (2009) *KwaZulu-Natal Automotive Industry Strategy Report*. Durban: Benchmarking and Manufacturing Analysts (B&M Analysts) South Africa (SA)

Barnes J & Morris M (2007) *Globalisation and Learning in the Global Automotive Industry: What Can Developing Countries Learn from South Africa about Linking into Global Automotive Value Chains?* Durban: Benchmarking and Manufacturing Analysts (B&M Analysts) South Africa (SA)

Black A (2001) Globalisation and Restructuring in the South Africa Automotive Industry. *Journal of International Development* 13: 779–796

Black A (2009) Location, Automotive Policy and Multinational Strategy: The Position of South Africa in the Global Industry since 1995. *Growth and Change* 40: 483–512

Blum R (2009) The Global Crisis and Restructuring in the Automotive and Metalworking Industries. International Metalworkers' Federation – IMF, *Metal World* 2: 18–22

BMW South Africa (2009) *Employment Equity Report* (1 June 2008 – 31 May 2009). Sandton: BMW South Africa

Bonacich E & Wilson JB (2008) *Getting the Goods: Ports, Labor, and the Logistics Revolution*. Ithaca, NY: Cornell University Press

Bond P (2009) *Interpretations of the Global Financial Crisis and Their Implications for South Africa*. University of Johannesburg Sociology and Anthropology Seminar Series (6 February)

Braverman H (1974) *Labour and Monopoly Capital: The Deregulation of Work in the Twentieth Century*. New York & London: Monthly Review Press

Brenner R (1979) A Way out of the Global Economic Crisis? *The Hankyoreh*. Accessed May 2009, http://english.hani.co.kr/arti/english_edition/e_international/336766.html

CEE (Commission for Employment Equity) (2009) *Commission for Employment Equity Annual Report 2008–2009*. Pretoria: Department of Labour

Cleaver H (1979) *Reading Capital Politically*. Houston: University of Texas Press

Collins R, Bechler K & Pires S (1997) Outsourcing in the Automotive Industry: From JIT to Modular Consortia. *European Management Journal, Elsevier Science* 15: 498–508

Desai M (2004) *Marx's Revenge: The Resurgence of Capitalism and the Death of Statist Socialism*. London: Verso

Dicken P (1998) *Global Shift: Transforming the World Economy'* (3rd edition). London: Sage Publications

Drucker P (1946) *The Concept of the Corporation*. New York: John Day

Federal Republic of Germany (2007) *Facts about Germany*. Frankfurt: Societäts-Verlag, in collaboration with the German Federal Foreign Office (Berlin)

Flatters F (2005) *The Economics of MIDP and the South African Motor Industry.* Kingston, Ontario: Queen's University

Forrest KA (2005) *Power, Independence and Worker Democracy in the Development of the National Union of Metalworkers of South Africa and its Predecessors: 1980–1995*. PhD dissertation, University of the Witwatersrand

Gerreffi G (1994) *Capitalism, Development and Global Commodity Chains*. In L Sklair (Ed.) *Capitalism and Development*. London: Routledge

Gereffi G (1999) *A Commodity Chains Framework for Analysing Global Industries*. Durham, NC: Institute of Development Studies, Duke University

Gereffi G (2008) *Value Chains, Networks and Clusters: Reframing the Global Automotive Industry*. *Journal of Economic Geography* 8: 297–321

International MTM (Methods Time Measurement) Directorate (2005) *MTM – First Time Right*. Hamburg: German MTM Association

Jarvis D (1999) *Making Sense of Workplace Restructuring*. Durban: Trade Union Research Project

Lane T (1974) *The Union Makes Us Strong*. London: Arrow Books

Marx K (1990/1867) *Capital* (Vol. I). London: Penguin

Marx K (1991/1894) *Capital* (Vol. III). London: Penguin

Marx K & Engels F (2004/1848) Manifesto of the Communist Party. *Marxists Internet Archive*. Accessed November 2009, www.marxists.org/archive/marx/works/1848/communist-manifesto/

Marx R, Zilbovicius M & Salerno MS (1997) The Modular Consortium in a New VW Truck Plant in Brazil: New Forms of Assembler and Supplier Relationship. *Integrated Manufacturing Systems* 8: 292–298

Masondo D (2003) Trade Liberalisation and Restructuring of Work in Post-apartheid South Africa: A case of BMW. Master's dissertation, University of the Witwatersrand

NAAMSA (National Association of Automobile Manufacturers of South Africa) (2005) *Annual Report, 2005*. Arcadia: NAAMSA

NALEDI (National Labour and Economic Development Institute) (2009) *State of COSATU Affiliates Report*. Johannesburg: NALEDI

NUMSA (National Union of Metalworkers of South Africa) (1997) *NUMSA Policy Adopted at 5th National Congress, September 1996 and Policy Conferences during 1997*. NUMSA Resolutions. Johannesburg: NUMSA

NUMSA (2008) *National Congress Resolutions.* (Resolutions of the 8th National Congress 2008 and the 7th National Congress 2004). Johannesburg: NUMSA

Peet R (2003) *Unholy Trinity: The IMF, World Bank and WTO*. London: Zed Books

Schneider M (1991) *A Brief History of the German Trade Unions* (trans. Barrie Selman). Bonn: Dietz

Shapiro S (2008) *How to Read Marx's Capital*. London: Pluto Press

Sitas A (1983) *African Worker Responses on the East Rand to Changes in the Metal Industry, 1960–1980.* PhD dissertation, University of the Witwatersrand

South African Automotive Week (SAAW) (2009) *South African Automotive Week* (2nd Edition). Port Elizabeth: SAAW

Stats SA (Statistics South Africa) (2009a) *Midyear Population Estimates, 2009*. Johannesburg: Stats SA

Stats SA (2009b) *Quarterly Labour Force Survey, Quarter 3, 2009*. Johannesburg: Stats SA

Straubhaar T (2007) *Germany as an Economic Hub*. In Federal Republic of Germany *Facts about Germany*. Frankfurt: Societäts-Verlag, in collaboration with the German Federal Foreign Office (Berlin)

Sturgeon T & Florida R (2000) *Globalisation and Jobs in the Automotive Industry*. Final Report to Alfred P Sloan Foundation (March), Massachusetts Institute of Technology (MIT), Cambridge, MA

VDA (*Verband der Automobilindustrie*) – Association of German automotive manufacturers (2009) *Annual Report, 2009*. Berlin: VDA

Veloso F & Kumar R (2002) *The Automotive Supply Chain: Global Trends and Asian Perspectives*. Asian Development Bank Economics and Research Department (ERD) Working Paper Series No. 3 (January)

Von Holdt K (2003) *Transition from Below: Forging Trade Unionism and Workplace Change in South Africa*. Scottsville: University of KwaZulu-Natal Press

Webster E (1985) *Cast in a Racial Mould: Labour Process and Trade Unionism in the Foundries*. Johannesburg: Ravan Press

Webster E, Lambert R & Bezuidenhout A (2008) *Grounding Globalisation: Labour in the Age of Insecurity*. London: Blackwell

Webster E, Mashilo A, Masondo T & Bischoff C (2009) Changes in Production Systems and Work Methods. Unpublished mimeo., University of the Witwatersrand, Society, Work and Development Institute (SWOP)

Womack JP, Jones DT & Roos D (1990) *The Machine That Changed the World: The Story of Lean Production*. New York: Macmillan

Interviews and presentations

J Barnes, Chairman and co-founder, B&M Analysts, Telecommunication Interview, 9 October 2009.

BMW Regensburg Works Council presentation, BMW Regensburg assembly plant, Regensburg, Germany, 13 July 2009.

K Flor, Plant Director, BMW South Africa, Rosslyn, South Africa, 11 November 2009.

K Flor, Plant Director, BMW South Africa, Rosslyn, South Africa, 15 December 2009.

D Gerst, Director, Work and Production Innovation Department, IG Metall, Frankfurt, Germany, 9 July 2009

J Metz, Works Council member and IG Metall Shop Steward, BMW Regensburg assembly plant, Regensburg, Germany, 13 July 2009.

R Pitot, Executive Director, National Association of Automotive Component & Allied Manufacturers (NAACAM), Isando, South Africa, 2 November 2009.

NUMSA Shop Stewards, Venture, Rosslyn, South Africa, 29 September 2009.

NUMSA Shop Stewards, Lear Corporation, Rosslyn, 11 November 2009.

NUMSA Shop Steward, ZF Lemförder, Rosslyn, 24 November 2009.

NUMSA Shop Stewards, BMW South Africa, Rosslyn, South Africa, 2 December 2009.

NUMSA Shop Stewards, BMW South Africa, Rosslyn, South Africa, 9 December 2009.

NUMSA Shop Steward, BMW South Africa, Rosslyn, South Africa, 15 December 2009.

K Siegel, IG Metall Union Official and renowned German specialist in labour economics,

Frankfurt, Germany, 9 July 2009.

VW Kassel Works Council, presentation, Kassel, Germany, 6 July 2009.

Worker, Lear Corporation, City of Tshwane, South Africa, 11 November 2009.

Works Council, plant tour, BMW Regensburg assembly plant, Germany, 14 July 2009.

R Zitzelberger, IG Metall Gaggenau Local Office Bearer, Gaggenau, Germany, 15 July 2009.

Meetings and conferences

Germany

Workers' Assembly (General Meeting), BMW assembly plant, Regensburg, 14 July 2009.

South Africa

Meeting with NUMSA National Office Bearers, NUMSA Head Office, Johannesburg, 15 September 2009.

NUMSA Central Committee (CC), Johannesburg, 27 July 2009.

NUMSA Gauteng Regions Job Security Conference, Midrand, 24–26 April 2009.

NUMSA Mini-National Congress, Boksburg, 11–14 May 2009.

NUMSA members Factory General Meeting, Lear Corporation, Rosslyn, 11 November 2009.

NUMSA National Jobs Security Conference, Midrand, 12–14 March 2009.

NUMSA Shop Stewards–BMW Hourly Human Resource Management meeting, BMW South Africa, Rosslyn, 9 December 2009.

NUMSA Shop Stewards Focus Group, BMW South Africa, Rosslyn, 9 December 2009.