"AN ANALYSIS OF THE IMPACT OF THE MOTOR INDUSTRY DEVELOPMENT PROGRAMME (MIDP) ON THE DEVELOPMENT OF THE SOUTH AFRICAN MOTOR VEHICLE INDUSTRY"

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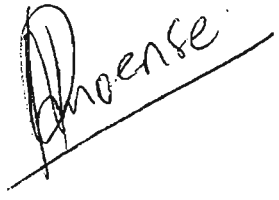
M. Y. DAMOENSE

JULY 2001



DEDICATION

I wish to dedicate this dissertation to my parents, *Solomon* and *Julia Damoense*.

M. Y. DAMOENSE

JULY 2001

DECLARATION

I, **Maylene Yvette Damoense**, hereby declare that the dissertation entitled:

"An Analysis of the Impact of the Motor Industry Development Programme (MIDP) on the Development of the South African Motor Vehicle Industry"

is the result of my own investigation and research, and that it has not been submitted in part or in full for any other degree or to any other University.

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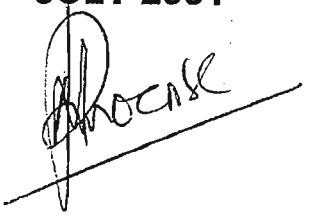

ABSTRACT

The study aims to research the performance of past and present motor industry policy in South Africa – with special reference to Phase VI of the local content programme and the Motor Industry Development programme (MIDP) – in the light of the domestic macroeconomic environment and global developments in the world automotive industry. The overall objective of this dissertation is to contribute to the debate on motor industry policy which concerns what future policy would be appropriate for the development of a viable and competitive motor vehicle industry. Thus this study is primarily policy-oriented, and the empirical analysis produced deals with important developments in the local motor and component industries and attempts to examine key variables to establish the likely impact of industry-specific policy changes – both past and future.

The method of investigation involves the study of relevant theoretical literature regarding domestic automotive policy, and considers policies of low-volume automobile producing economies, especially Australia, Philippines, India and Malaysia. Also, empirical data of various sub-sectors of manufacturing in South Africa were examined and compared to the motor vehicle sector in order to determine the extent to which the macroeconomic state of the domestic economy as distinct from automotive policy might explain the performance of the South African motor industry.

The dissertation presents a review of the local content programme of motor industry policy in South Africa since the early 1960s. It examines the claim that import-substituting policy in the motor industry actually had a negative impact on the country's balance of payments. The study finds questionable whether local content policy contributed significantly to the large net foreign exchange usage by the motor industry in real terms. There is evidence that increases in the nominal industry trade deficit can largely be explained by the weakening of the Rand, especially during the mid-1980s.

Also, empirical data was used to make an examination of the performance of automotive exports under Phase VI and the MIDP in the context of economy-wide trade liberalization. It was found that exports of automotive products grew significantly under both Phase VI and the MIDP in real Rand terms. Thus, it seems probable that industry-specific policy played a major role in the strong export performance of the sector since the late 1980s through to the 1990s.

The study then reviews the revised version of the impact of the MIDP and considers the future of the industry. The state of the domestic macroeconomic environment and globalization of the international automobile industry, including the influence of Transnational Corporations' (TNCs') strategies, will undoubtedly determine the future direction of South Africa's automotive sector. In the short to medium term, we might expect an increase in imported vehicles and some rationalization of the industry. Over the longer term, the possibility of fewer OEMs and component suppliers, and automotive exports are likely to rise as trade and the inflow of foreign investment accelerates due to foreign collaboration and global competition.

A simple theoretical model applicable to the South African automotive industry attempts to show the welfare implications of a protective automotive regime (similar to Phase VI) and compares it with that of a more liberal (tariffs-only) automotive regime that may be considered as a likely policy-option for South Africa post-MIDP. The theoretical analysis indicates that the tariffs-only policy is superior to that of a more protective regime in that static efficiency losses are lower. However, the dynamic effects of such policy changes and of possible TNC responses to them, which are referred to in the previous paragraph, are not included in this simple model.

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ACIS:	Australia's Competitiveness Investment Scheme
ACMA:	Automotive Component Manufacturers Association of India
AIDC:	Automotive Industry Development Centre
AFTA:	ASEAN Free-Trade Area
APEC:	Asia Pacific Economic Cooperation
AU$:	Australian Dollar
BTI:	Board of Trade and Industry
BTT:	Board of Tariffs and Trade
CAJAD:	Canadian Association of Japanese Automobile Dealers
CBUs:	Completely built-up units
CKDs:	Completely knocked-down sets
CMVP:	Component motor vehicle producers
CPI:	Consumer price index
CSS:	Central Statistical Services
DAPL:	Department of the Australian Parliamentary Library
DFA:	Duty-free allowance
DOC:	Department of Commerce
DOE:	Department of Energy
DISR:	Department of Industry, Science and Resources
DTI:	Department of Trade and Industry
ECDC:	Eastern Cape Development Corporation
EFS:	Export facilitation scheme
EP:	Export promotion
FDI:	Foreign direct investment
GATT:	General Agreement on Tariffs and Trade
GDP:	Gross domestic product
HS:	Harmonized system
IDC:	Industrial Development Corporation
IEC:	Import-export complementation
IPR:	Import penetration ratio
IRCCs:	Import rebate credit certificates

IS: Import substitution

ISIP: International systems of integrated production

IST: Industry, Science and Tourism

IT: Information technology

JIT: Just in time

JVs: Joint ventures

M&As: Mergers and acquisitions

METC: Metro Electronic Trade Centre

METI: Ministry of Economy, Trade and Industry

MITG: Motor Industry Task Group

MIDP: Motor Industry Development Programme

MNCs: Multinational corporations

NAAMSA: National Association of Automobile Manufacturers of South Africa

NAFTA: North American Free Trade Agreement

NCPs: National Car Projects

NICs: Newly Industrialized Countries

NTBs: Non-tariff barriers

OEMs: Original Equipment Manufacturers

OES: Original Equipment Supply

OSAT: The Office of the Study of Automotive Transportation

p.a.: per annum

PEP: Protected Export Promotion

PMVP: Passenger motor vehicle producers

PPI: Production price index

QRs: Quantitative restrictions

RCA: Revealed comparative advantage

R&D: Research and development

RID: Rosslyn Industrial Directory

SA: South Africa

SADC: South African Development Community

SARB: South African Reserve Bank

SB: Standard Bank

SIC: Standard Industrial Classification

SKDs: Semi knocked-down sets

SSA: Statistics South Africa

SVI: Small vehicle incentive

TIDCO: Tamil Nadu Industrial Development Corporation Ltd.

TIPS: Trade and Industrial Policy Secretariat

TNCs: Transnational Corporations

UK: United Kingdom

UNCTAD: United Nations Conference on Trade and Development

US: United States

WTO: World Trade Organization

CHAPTER 1

INTRODUCTION

The local motor vehicle and component producing industry is a key branch of South Africa's manufacturing sector, and indeed the national economy – contributing an estimated 5.4 per cent to the economy's gross domestic product (GDP) in 1998, and producing a little over 300,000 units of passenger and commercial vehicles for the domestic market. The automotive industry is also a large net consumer of foreign currency; in 1998 total automotive imports totalled about R20 billion and exports amounted to about R10 billion[1]. Motor industry employment was 273,600[2], comprising about 5.7 per cent of total manufacturing employment, and the industry accounted for a significant 14 per cent of manufactured imports and some 4 per cent of manufactured exports[3].

According to the National Association of Automobile Manufacturers of South Africa (NAAMSA), the motor industry incorporates the manufacture, distribution, servicing and maintenance of motor vehicles and motor components. This study primarily focuses on the manufacture of automobiles and the production of automotive components. The automotive sector has close links to other manufacturing sectors (iron and steel, plastics, leather, and others) as a consequence of its demand for their resources. Certain geographical regions in South Africa are reliant on the production of motor vehicles and other automotive related activities, especially in terms of employment generation. Domestically, there are seven Original Equipment Manufacturers (OEMs) located in the Eastern Cape region (Uitenhage: VW, Port Elizabeth: Delta and East London: Daimler Chrysler), KwaZulu Natal region (Isipingo: Toyota) and Gauteng region (Pretoria: Samcor, BMW, Nissan). In addition, there has been a considerable increase in the number of vehicle importers in recent years. About

[1] DTI (1999), values in current Rands.
[2] Industry employment comprise of the assembly industry (38,600), component industry (45,000), tyre industry (10,000) and motor trade (180,000). Motor trade includes vehicle retailing, distribution and servicing (NAAMSA, 1999).
[3] Figures for 1996 (Roberts, 1998).

280 local component suppliers produce for both the domestic and international markets.

Motor industry policy since the early 1960s focused on import substitution (IS). The South African automotive industry evolved through a series of local content phases, which were intended ultimately to develop it into a full scale manufacturing sector. Domestic content involved increasing the utilization of domestic components in the production of motor vehicles. One other reason for the introduction of local content policy was the idea that foreign exchange usage in the motor industry was excessive, and that this had a negative impact on the current account of the balance of payments.

As the industry developed, key policy changes were made to the local content programme to accommodate for certain challenges that the industry was faced with in realizing its objectives. Apart from the structure and inefficiencies of the programme itself, many of the problems in the industry arose as a result of the economic slowdown during the eighties, especially since the motor industry is highly susceptible to economic fluctuations. In particular, the foreign exchange shocks in the mid-1980s, which prevailed during the operation of Phase V. The government reported that Phase V of the local content programme, played a significant role in the continued widening gap between foreign exchange earnings and foreign exchange consumption in the motor industry, and claimed that it contributed significantly to the weakening of the economy's balance of payments. Despite the higher weight-based local content requirements stipulated by the Phase V programme, the local content ratio by value remained relatively low while the import content in value terms remained high. Phase V continued until February 1989.

In line with South Africa's progress toward trade liberalization in the mid-1980s, a structural adjustment policy for the motor sector was implemented in March 1989, namely, Phase VI of the local content programme. The scheme assessed local content in terms of value instead of weight as in the previous five phases. The focus remained on the objective of saving foreign currency with more

emphasis on enhancing exports. Under Phase VI automotive exports could count as local content. OEMs could earn export credits to offset duties on imports and component producers could cede their export credits to OEMs. This encouraged OEMs and component manufacturers to expand automotive exports both in terms of completely built-up units and components.

The Phase VI programme was supposed to reduce net foreign exchange consumption by the motor industry by approximately 50 per cent. The programme was not particularly successful in doing so, and this prompted government to review automotive policy in South Africa.

In 1992 the Motor Industry Task Group (MITG) was appointed to examine the then current motor industry policy (Phase VI). Phase VI was revised in terms of the initial set of objectives of the local content policy. The Motor Industry Development Progamme (MIDP) emerged from the recommendations made by the Task Group and was implemented in September 1995. The new programme was an extension of Phase VI in terms of import-export facilitation, *but with no minimum local content requirements*. It was designed within the framework of the requirements of the General Agreement of Tariffs and Trade (GATT), established in the Uruguay Round. The tariff reduction schedules for completely built-up units (CBUs) require a 40 per cent reduction and completely knocked down (CKD) components a 30 per cent reduction by 2002. The Mid-term Review of the MIDP aimed to monitor the progress of the programme and proposed that it be extended to 2007. Tariffs on CBUs and CKDs will be further reduced to 30 per cent and 25 per cent respectively beyond 2002 through to 2007. Other features of the programme include – phasing-down of the import-export complementation (IEC) scheme, phasing-out of the small vehicle incentive (SVI) and the introduction of the new duty-free allowance (DFA). The impact of the above-mentioned policy measures, international car developments and the state of the domestic macro-economy will certainly determine the future direction and development of the South African automotive sector.

The overall objective of the dissertation is to contribute to the debate about what future motor industry policy is required for the development of a viable and competitive automotive sector. This study aims to examine the probable effects of past and current motor industry policy, with special reference to (I) Phase VI of the local content programme and (II) the MIDP. It aims to make this assessment in the context of the macroeconomic environment and international automotive trends – considering implications for production, export performance, trade balance and employment.

The dissertation commences with this introductory **Chapter 1** – a brief introduction of the importance of the automotive industry, a short review of industry-specific policy, a statement of the primary aim of the research and an outline of the chapters to follow.

The fundamental aim of **Chapter 2** is to outline the evolution of South African motor industry policy and consider the reasons for the introduction and elaboration of content protection since the early 1960s. The first five phases of the local content programme were in operation from January 1961 to the beginning of 1989. The chapter examines their impact, in particular that of Phase V. Special consideration is given to the effects of policy on foreign exchange usage, local content and export performance in the motor sector. Furthermore, the study aims to consider to what extent the macroeconomic state of the domestic economy, as distinct from motor industry policy has determined the performance of the South African automotive sector.

Chapter 3 offers a discussion of the structure of Phase VI of the programme (a structural adjustment programme as part of trade liberalization), in particular, examining the likely effects it had on the motor industry in similar terms to those employed in the previous chapter. The impact of trade liberalization on South African manufacturing and the motor industry is then examined in a preliminary analysis. Furthermore, the chapter aims to provide an international comparative analysis (in the era of trade liberalization) of automotive policies in other relatively low-volume motor vehicle producing economies such as Australia,

Brazil, Malaysia, India and others. Special reference is made to the linking of government support measures and export performance. The export performance of South Africa's motor industry in the context of manufacturing exports is examined to show that the significant growth of automotive exports during the period (1989–1993/1994) can be explained by the industry-specific policy (Phase VI of the local content regime) rather than by economy-wide factors in the late 1980s and early 1990s.

Chapter 4 outlines the key features of the MIDP and the proposed amendments made to the MIDP as a result of the Mid-term Review (1999). This chapter will consider the likely effects that current motor industry policy will have on the performance of the industry at present and beyond 2007 when the MIDP expires. The study also considers a possible option for future policy reform such as a tariffs-only automotive policy as South Africa becomes more GATT compliant – with falling tariffs and the elimination of export subsidies. However, only the theoretical implications for the adoption of such a policy in South Africa are considered. Thus, a further quantitative investigation would be required to estimate the economic costs and benefits associated with this type of policy. Once again, the export performance of the motor industry is examined for the period of the MIDP (1995–1998) and compared to that of the previous Phase VI. Significant growth of automotive exports is found during both periods, with exports growing relatively faster during the Phase VI period than during the MIDP. This leads to the conclusion that industry-specific policy contributed significantly to the strong export growth in automotive products. In addition, the export-focused policy induced transnational corporations (TNCs) to seek strategic partnership opportunities in the South African market in an attempt to meet the challenges of globalization, and expand their global market share and profitability.

Chapter 5 presents the South African motor industry in an international context broader than that examined in chapter 3. The study attempts to pursue international developments in the world auto industry in respect of intense global competition, and rapid innovation and transport technology

developments. Automotive TNCs and their corporate strategies (foreign direct investment facilitated through merger and acquisition activities) are increasingly changing the competitive environment in which both vehicle assemblers and component suppliers operate, creating barriers and reducing risks and uncertainties associated with globalization. In addition, the role of component suppliers internationally has changed; it now involves more responsibility relating to planning, designing and working more closely with OEMs. Present developments in the South African motor industry are in line with global automotive developments and are likely to have further implications and challenges for local OEMs and component firms in the future. These issues are discussed in some detail in chapter 5.

Chapter 6 presents the main findings of the study and some recommendations for future motor industry policy. It concludes by considering the need for further investigations that might be useful for the development and growth of the industry.

CHAPTER 2

A REVIEW OF THE LOCAL CONTENT PROGRAMME IN THE SOUTH AFRICAN MOTOR VEHICLE INDUSTRY

2.1 INTRODUCTION

The objective of this chapter is to provide a review of the protective regime that prevailed throughout the development of the motor vehicle industry in South Africa with special reference to the series of local content phases that have been applied since 1961.

In the past, the South African automotive industry developed within a general framework of import substitution (IS) strongly influenced by protectionism. A combination of import tariffs and permits, quantitative restrictions (QRs) and minimum domestic content requirements were the main instruments employed in fostering the development of the automobile industry. The strategy was to insulate domestic assemblers and component producers from competition by imports. However, since the late 1980s government has reoriented its policy away from IS towards encouraging exports. From that time the role of exports has become increasingly important in the formation of future industrial policy in South Africa.

Before the present motor industry policy, the Motor Industry Development Programme (MIDP) which was introduced in September 1995, policy went through six phases involving different definitions and levels of local content. Phases I to V were weight-based with local content levels ranging from a low 15 per cent in 1961 to 66 per cent in 1980, whereas Phase VI was value-based and the minimum local target was 55 per cent inclusive of exports.

Phase VI which was introduced in March 1989 involved a major shift in policy, away from an exclusive focus on import substitution, through weight-based local content requirements, to a value-based system with an emphasis on export

promotion. This represented a significant act of trade liberalization for the industry, in the sense that it involved a system of incentives more neutral as between production for the domestic and export markets.

In other words, in March 1989, South Africa adopted a policy of what has been called protected export promotion (PEP) defined as "simultaneous . . . import substitution (IS) and export promotion (EP) . . ." (Liang, 1992:455). South Africa's motor and components industries were protected from foreign competition, but at the same time were also encouraged to export by way of duty-free imports for exports with the aim of becoming internationally competitive.

The MIDP, introduced in 1995, involved a further radical shift in policy. In compliance with the General Agreement on Tariffs and Trade (GATT) of the Uruguay Round, South Africa implemented a tariff phase-down programme applicable to the motor industry over an eight-year period from 1995 until 2002. Minimum local content requirements that were a feature of Phases I to VI are absent from the MIDP. The MIDP will be discussed further in chapter 4.

This chapter will primarily focus on Phase I to V (1961 to the end of February 1989). Phase VI will be examined in chapter 3.

Before examining Phases I to V it is worth noting that the motor vehicle industries of several developing economies such as Argentina, Brazil, Mexico, Australia and others evolved through a similar pattern of development at roughly the same time periods. Local content requirements were introduced in Brazil in 1956, in Argentina and Mexico in 1962, and later in Australia in 1965 (Bell, 1990:60). The domestic content targets applied to these countries' automotive sectors were set at much higher levels and were more stringent than in South Africa. For example, Brazil's local content target by weight was set between 90 per cent and 95 per cent within a five-year period (Jenkins, 1995:630).

2.2 OBJECTIVES OF LOCAL CONTENT POLICY

After World War II, in order to control and expand their share of the world market, multinational corporations (MNCs), like Ford and General Motors, envisaged the need to establish automotive production centres outside the major producing economies, within the developing world.

South Africa experienced a similar initiative a little earlier. 1924 saw the first motor car assembled here with imported components[1]. The South African motor industry experienced slow progress during the 1930s and World War II (Swart, 1974:64); but in the late 1940s and early 1950s, rising demand led to rapid increases in the importation of motor cars and motor parts. The highly import-intensive nature of the industry resulted in a high import bill. In an attempt to contain the import bill, in the late 1940s, the government introduced import monetary quotas, a short term measure, to limit the use of imported completely built-up units (CBUs) and completely knocked down (CKD) sets[2] (Swart, 1974:164).

In 1958, prior to the implementation of local content policy, domestic components accounted for a low 17 per cent local content by weight (Black, 1991:166). On the other hand, the inclusion of component imports in the manufacture of an average passenger vehicle was more than 80 per cent of the weight of the vehicle (Duncan, 1997:25).

These imports imposed a considerable excessive burden on the foreign exchange resources of the domestic economy. This was pointed out by the Board of Trade and Industry[3] (BTI) in Report No. 613 in 1960. Imports were not

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[1] In 1924 Ford produced the first motor car in South Africa, followed by General Motors (1926) and National Motor Assemblers (1939) (Swart, 1974:164).

[2] (1) CBUs refer to light motor vehicles imported in a completely built-up condition. (2) CKD definition requires that the floor panels, body sides and roof panels may not be attached to each other and that the engine, transmission axles, radiators, suspension components, steering mechanisms, braking or electrical equipment or instrumentation may not be fitted to the floor panels or chassis frame of the light motor vehicle (DTI, 1996:5–6).

[3] The BTI will sometimes also be referred to as the Board. It has subsequently been renamed the Board of Tariffs and Trade (BTT).

only large but also growing rapidly: between 1956 and 1957 foreign exchange usage in the motor industry increased by 49 per cent[4].

The Board's vision was that by introducing the local content system the automotive industry would be transformed from an industry based on assembly operations to one involved in the full scale manufacture of motor vehicles. The desire to develop a self-sufficient automotive industry in South Africa thus led to the introduction of a local content policy consistent with the traditional infant industry protection regime. This local content policy was expected to reduce the foreign exchange usage by the automotive industry.

The Board of Trade and Industry (BTI) highlighted potential economic benefits that could be achieved by adopting higher levels of local content in locally-assembled motor vehicles. According to the BTI (1960):

> *"The development of an automobile manufacturing industry in this country would have important and very beneficial effects on the South African economy. This would be due to the large investment that it would necessitate, to the additional employment that would accrue to its development, to the important outlet that would be created for South African steel, and to the beneficial effects that it would have on the Union's balance of payments. The development of the automotive industry would, indeed, affect a very important differentiation, both technically and economically, in the Union's manufacturing industry; it would in fact serve as a catalytic agent in the development of the South African economy" (BTI, Report no. 613, 1960:81).*

[4] Total motor vehicle and component imports increased from R90m in 1956 to R134m in 1957. Calculated from Dix (1995:25).

The main objectives of local content requirements, as stated by the Board (BTI 1960, BTI 1988)[5] were:

(I) To promote the development of a fully-fledged, self-sufficient motor vehicle manufacturing sector that would be of strategic importance to the national economy (BTI, 1960:42).

(II) To attain higher domestic content value, thereby reducing the use of CKD sets that would ultimately lead to greater foreign exchange savings (BTI, 1988:3).

(III) To create and provide employment opportunities and skill development in the assembly, component and related industries (BTI, 1988:3).

(IV) To encourage export expansion and gain increased exposure to export markets (BTI, 1988:42).

(V) To facilitate more rapid transfer of foreign technology and adequately develop local technological capabilities and production techniques (Boxall, 1989:6).

(VI) To promote industrial expertise and engineering capabilities in the component, assembly and related industries (BTI, 1988:3).

(VII) To effectively aid rationalization of the motor car industry and to bring about a reduction in the proliferation of makes and models to achieve economies of scale (BTI, 1988:65).

[5] BTI (1988) includes a brief historical review of local content policy and its objectives.

2.3 THE DEVELOPMENT OF THE MOTOR VEHICLE ASSEMBLY AND COMPONENT INDUSTRY FROM 1961 TO 1988/1989: PHASE I–V OF THE LOCAL CONTENT PROGRAMME

2.3.1 Phase I (1961–1964)

Based on the investigation and findings of the Norval Commission, the government outlined a number of conditions for the first phase of the local content programme, which was to be implemented in June 1961 (BTI, 1960). This programme was only applicable to passenger vehicles at this point. Under this phase no minimum local content targets were required, although government hoped that the protective measures introduced would provide a stimulus for Original Equipment Manufacturers (OEMs) to reach higher levels of domestic content.

Phase I included the introduction of two systems, an import permit system and an excise duty rebate system. OEMs were required to source the following low value components locally: tyres and tubes, batteries, trim, exhaust systems, paint, glass, seat frames, road springs, carpets and mats (Duncan, 1997:27).

OEMs who were able to include domestic components over and above those mentioned and further increased their local content levels, were rewarded by way of import permits. The introduction of this import permit system was primarily aimed at controlling the value of imported CKD sets by OEMs on the basis of the value of the local content included in assembled vehicles (Boxall, 1989:11). The second system, the excise duty rebate scheme, allowed OEMs to significantly reduce their excise duties payable if they achieved higher local content percentages by weight.

This dual incentive structure induced OEMs to rapidly increase their local content levels. There was an increase in local content by weight of passenger cars from approximately 15 per cent to 40 per cent in only two years (BTI, 1988:4). Phase I continued until June 1964.

According to Duncan (1997:26), " . . . policy successfully reduced the drain on foreign exchange from R145.6m in 1960 to R110.6m in 1961". This reduction occurred six months into the Phase I policy. Consistently with the fact that the South African economy was in a recession from May 1960 to August 1961[6], annual new vehicle sales fell from 119,164 units to 96,664, a fall of 19 per cent (see drop in sales figures for 1960 and 1961 in table 2.1). Lower vehicle output and sales meant lower import expenditure, in turn reflected in a reduction in foreign exchange usage. In this view the decline in foreign exchange usage by the motor industry between 1960 and 1961 was primarily due to the domestic recession instead of local content policy as was supposed.

The primary objective of this initial phase was to promote the gradual development of the South African motor vehicle manufacturing industry. Between 1961 and 1964, there was a sharp rise in passenger vehicle units and value of sales, especially in 1963 and 1964. In these latter years the total new car market[7] grew at an annual rate of 39.4 per cent and 32.5 per cent respectively (Swart, 1974:217) (see table 2.1). During the same time period, real gross domestic product (GDP) grew strongly at an average annual rate of 7.4 per cent (1963) and 6.7 per cent (1964)[8].

[6] SARB Quarterly Bulletin (1998), p S-143.
[7] Total new car market comprise of both passenger cars and commercial vehicles.
[8] Real GDP growth rates at 1975 prices (Falkov, 1994:5).

Table 2.1 Annual Sales of New Passenger and Commercial Vehicles 1958–1969

Year	Passenger cars	Commercial vehicles	Total	% Annual Growth
1958	89, 363	21,606	110,969	-
1959	87,220	18,954	106,174	- 4.3
1960	98,779	20,385	119,164	12.2
1961	75,938	20,726	96,664	-18.9
1962	81,308	24,864	106,172	9.8
1963	110,468	37,494	147,962	39.4
1964	143,373	52,618	195,991	32.5
1965	127,898	47,093	174,991	-10.7
1966	139,076	47,074	186,150	6.4
1967	139,223	54,820	194,043	4.2
1968	151,546	60,245	211,791	9.1
1969	177,945	78,351	256,296	21.1

***Source*: NAAMSA (1999), Swart (1974)**

Boxall (1989:12) implies that the expansion of the motor industry was to a large extent due to the first phase of the local content programme. Duncan (1997:27) also attributes " . . . spectacular growth in the motor industry, . . ." to government policy during the early 1960s. While the economy was experiencing an upswing in economic activity between September 1961 and April 1965[9], and given the protection and generous incentives awarded to OEMs, a number of multinational corporations (MNCs) entered the South African motor industry. These MNCs undertook significant investments and acquired capacity to expand and retain market share in the local automotive industry. The expansion of the local motor industry can be found in the rise in the value of locally manufactured components purchased by OEMs between 1961 (R13m) and 1964 (R55m) (Swart, 1974:168), a more than fourfold expansion in three years.

[9] SARB (1998), p S-143.

Thus, it is reasonable to say that the expansion of the motor industry in the 1960s occurred to some extent as a result of the local content programme.

At the same time it may be said that the initial phase of the local content programme probably contributed less than was commonly supposed to the expansion of the South African motor industry during the early sixties because the economy was experiencing an economic boom at the time. In such an environment demand for vehicles grew strongly, creating optimistic expectations about future growth, and a willingness to invest and create capacity (as noted above).

2.3.2 Phase II (1964–1969)

The second phase commenced on 1 July 1964 and continued until the end of 1969. The so-called "manufactured model" scheme was introduced. OEMs who reached the local content target of 45 per cent by weight (the target was increased later) were allowed to declare and classify their models "manufactured" (Mabasa, 1996:30). This scheme provided assemblers with bonus import permits, and in addition to that exempted them from paying excise duties (excise discounts) based on the achievement of their local content levels in each assembled vehicle model. Excise duty discounts were granted to OEMs according to table 2.2.

By 1969 the local content target had risen to 55 per cent. The year 1970 was a standstill year, during which all "manufactured models" had to attain a net local content of 50 per cent. This standstill year was granted so that the *gross* measure of local content that was initially employed could be gradually converted to the new *net* measure of local content. Net local content implied that components had to be manufactured locally from locally produced materials in order to count as local content, including those imported materials that could not be manufactured locally, such as components manufactured from imported unprocessed materials, imported unmachined materials and imported unmachined castings and forgings (BTI, 1979).

Table 2.2 Phase II: Excise Discount Schedule

Local Content (% weight)	Excise Discount
More than 25 % but less than 30 %	15 % of full excise
More than 30 % but less than 35 %	18 % of full excise
More than 35 % but less than 40 %	22 % of full excise
More than 40 % but less than 45 %	27 % of full excise
More than 45 % but less than 50 %	33 % of full excise
More than 50 % but less than 55 %	40 % of full excise
More than 55 % but less than 60 %	48 % of full excise
More than 60 % but less than 65 %	57 % of full excise
More than 65 % but less than 70 %	67 % of full excise
More than 70 %	75 % of full excise

***Source*: Swart (1974)**

This was so because the domestic industry did not have the appropriate expertise and comparative advantage in producing these imported materials. Thus, to change from the *gross* to the *net* measure of local content the imported materials used in local production (other than those referred to above) were deducted from the gross local content measure. However, certain problems and delays arose because these imported materials (that could count as local content) were not always readily available locally in sufficient quantities and quality.

The government was hopeful that in time the required skills, expertise and technology would be acquired domestically so that the industry could substitute locally manufactured components to replace the previously imported materials. Once this was accomplished, those imported materials would no longer form part of the net local content measure.

In contrast to the objective of rationalizing the local industry, the number of OEMs rose from 8 in 1960 to 16 in 1970 (Phase II) producing 43 models and 107 variants of motor vehicles (see table 2.3 below). The continuous rise in the

local content requirements proved to be unsuccessful in reducing the number of assemblers operating in the industry and the proliferation of makes and models. A wide range of motor components had to be supplied to the OEMs mainly because of the proliferation of makes and new model introductions that entered the market from time to time. This was clearly in contradiction with the aim that weighted local content would induce the standardization of certain components and reduce vehicle makes and models.

Given the small size of our domestic market, there were probably too many OEMs producing far too many models and model variants (by international standards).

Table 2.3 Rationalization, Phases I to VI

Phase and Year	Number of OEMs	No. of models	No. of model variants
1960 – Pre Phase I	8	24	102
1970 – Phase II	16	43	107
1976 – Phase III	13	39	257
1987 – Phase V	7	20	200[a]
1993 – Phase VI	7	41	270[b]

***Source*: Compiled from Boxall (1989), BTI (1960,1977,1988), MITG (1994)**

Note: [a]1989 figure, [b]1994 figure.

Nevertheless, one of the successes of Phase II, according to Furstenberg (1994), was the growth in manufacturing parts and accessories. Between 1963 and 1969, the manufacture of parts and accessories grew in real terms by 26 per cent (Furstenberg, 1994:34). Another was that employment levels in the motor industry increased. In the assembly industry alone employment levels increased from 9,500 (Duncan, 1997:27) in 1961 to more than 26,900 in 1969 (Swart, 1974:167). Employment increased at an annual average rate of 13.9 per cent. Job creation was even greater in the motor components sector as a result of the expansion that occurred in the sector. The number of component firms increased to over 200 by 1967 (Duncan, 1997:27).

2.3.3 Phase III (1971–1976)

The third phase of the local content programme was introduced on 1 January 1971 and lasted until December 1976. In terms of Phase III, net local content of manufactured vehicles were required to rise from an initial 52 per cent to 66 per cent by 1 January 1977 (or end of 1976).

The excise duty rebate scheme was adjusted to account for the *net* measure of local content target (as discussed previously). Table 2.4 indicates the size of the excise duty rebate applicable to each level of local content attained.

Table 2.4 Phase III: Excise Rebate Scale for Manufactured Models[10]

Nett Local Content (% weight)	Excise Rebate (cents per kg)
More than 47 % but not more than 48 %	12,19
More than 48 % but not more than 49 %	12,43
More than 49 % but not more than 50 %	12,67
More than 50 % but not more than 51 %	12,91
More than 51 % but not more than 52 %	13,15
More than 52 % but not more than 53 %	13,63
More than 53 % but not more than 54 %	13,87
More than 54 % but not more than 55 %	14,11
More than 55 % but not more than 56 %	14,64
More than 56 % but not more than 57 %	15,17
More than 57 % but not more than 58 %	15,70
More than 58 % but not more than 59 %	16,23
More than 59 % but not more than 60 %	16,76
More than 60 % but not more than 61 %	17,29
More than 61 % but not more than 62 %	17,82
More than 62 % but not more than 63 %	18,59
More than 63 % but not more than 64 %	19,43
More than 64 % but not more than 65 %	20,27
More than 65 % but not more than 66 %	21,11
More than 66 % but not more than 67 %	21,95
More than 67 % but not more than 68 %	22,79
More than 68 % but not more than 69 %	23,63
More than 69 % but not more than 70 %	24,47
More than 70 % but not more than 71 %	25,31
More than 71 %	26,15

***Source*: Swart (1974), Boxall (1989)**

[10] Has not proved possible to record rebates on same basis as in Table 2.2.

The proliferation of vehicle models and model variants continued under Phase III. New vehicle makes and models were only manufactured under exceptional circumstances prescribed by the Board. This policy was nullified by the special circumstances granted to OEMs enabling them to produce new models incorporating lower levels of local content immediately after entry (Boxall, 1989:14). Table 2.3 shows that the number of OEMs in the industry declined from 16 to 13 by 1976 and the number of model variants increased from 107 to 257 between the period 1970 and 1976 (BTI, 1977). The continued increase in the proliferation of models and model variants resulted mainly from the competitive climate in which the OEMs operated and the need to maintain and enlarge their market share (Swart, 1974:195).

Turning to the issue of foreign currency usage by the motor industry, the Board repeatedly reported that the industry was a large net user of foreign exchange. Between 1964 and 1970 (Phase II) net total motor vehicle and component imports grew at an annual average rate of 8 per cent p.a. compared to a 15 per cent p.a. growth rate in nominal Rand terms between 1971 and 1975[11] (Phase III). It is notable that in real terms the automotive trade deficit, for roughly the same period, increased by 12 per cent from 1972 to 1975[12]. Thus, the increase in foreign exchange consumption by the motor industry remained a concern.

The reason for this growth of import values is not entirely clear however; we know that inflation (and hence import prices) were rising worldwide after the first oil shock, and on the other hand it is possible that import controls and other protective measures were less tightly applied because of the strong surplus on the balance of payments which appeared in 1972/1973 because of the increase in the gold price.

[11] Due to the unavailability of data, different sources have been used. 1) Customs and Excise Yearbook of imports and exports, compiled by Erasmus (1993) [quoted in Furtstenburg (1994:42)]. Total motor vehicle and component imports increased from R202.0m (1964) to R326m (1970) and 2) 1971 and 1975 figures obtained from BTI (1988:44), that is, R413m (1971) and R714m (1975).
[12] Calculated from IDC (1995) data, constant 1993 Rands (see table 2.8).

Another possible reason contributing to the rise in the import bill was the industry's reliance on foreign technology and machinery that were required in the local production of motor components, especially the more sophisticated components (Dix, 1995:31).

Somewhat longer-term evidence in this period (and beyond) on the effects of the local content programme on imports (foreign exchange) is available from the calculation of the import penetration ratio (IPR) of the motor industry for the period 1972 to 1993 (see table 2.7 and figure 2.3)[13], which will be discussed later in this chapter.

2.3.4 Phase IV (1977–1979)

Phase IV was characterized as a standstill period with no increases in local content targets, and commenced on 1 January 1977 and lasted until December 1979. However, motor vehicles with local content percentages exceeding 71 per cent were encouraged by way of generous excise duty rebates (BTI, 1988:6).

The year 1979 required commercial vehicles to achieve equivalent levels of local content to those required for passenger vehicles (66 per cent) by the end of 1981.

The two-year standstill period, 1977 to 1979, was granted to OEMs so that they could consolidate their profitability status given the severe losses that they incurred under the previous Phase III (BTI, 1988:4). Especially, with the fall in vehicle sales volumes that occurred during the sharp economic downturn between September 1974 and December 1977. Total new vehicle sales fell from 341,927 units to 256,801 units between 1974 and 1977.

Also, OEMs experienced difficulties in reducing their overhead costs associated with the localization of automobiles (Swart, 1974), which resulted in higher overall costs that eroded their profitability.

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[13] IDC (1995) (constant 1993 Rands) sectoral manufacturing data was used to calculate the IPR for motor vehicles, which includes data for both motor vehicles and components.

2.3.5 Phase V (1980–1988/1989)

The fifth phase of local content policy was introduced on 1 January 1980 and continued until the end of February 1989. The minimum local content target under this phase remained at 66 percent by weight. Although no fixed time-table existed, one of the aims of this Phase was to increase net local content to approximately 80 per cent by weight (Wijker, 1976) [quoted in Furstenburg (1994:36)]. This was however not achieved.

Local content was based on a weighted average measure, which allowed models that achieved less than the prescribed 66 percent target to be offset by other models that achieved more than the 66 percent local content target (Black, 1991:166). That is, OEMs were not required to achieve the target percentage on every individual model but across the entire model range. Motor vehicles produced with local content less than 66 percent were subject to heavy penalties whereas those which achieved local content levels in excess of 66 percent were eligible for rebates on excise duties.

The BTI recommended that higher levels of local content may be achieved, but purely on a voluntary basis. Motor manufacturers were encouraged to attain higher domestic content levels by receiving rebates on excise duties (BTI, 1988:6). In essence, the tax rebates could partially offset the cost premiums that resulted from striving to reach higher levels of local content.

For the first time exports became a focus of attention. The appointment of a study group (Industrial Development Strategy for South Africa) in June 1977 had acknowledged the urgency of enhancing South Africa's exports (BTI, 1988:42). Automotive exports had been minimal during the previous local content phases. The total value of vehicle and component exports reported relatively low levels until the mid-1980s. Export assistance was awarded to OEMs with effect from 11 April 1985 in the form of a rebate of the excise duty equal to R4 per kg of the net local content portion of a locally produced export vehicle (BTI, 1988:43). From May 1986, component manufacturers with a net

foreign exchange credit on components exported were allowed to cede or sell their export credits to OEMs (BTI, 1989:22).

It was envisaged that the export incentive would contribute significantly to the growth of automotive exports. Sub-section 2.4.1 will discuss the export performance of the domestic motor industry during the Phase V period.

In the next section, 2.4 we turn to consider what impact Phase V might have had on the local motor industry, in particular on automotive exports and imports, and related to that – foreign currency usage by the industry during the mid-to-late eighties. Section 2.5 extends the discussion of the issue of foreign exchange consumption by the automotive industry in real terms, incorporating a broader time frame, 1972–1993.

2.4 THE IMPACT OF PHASE V OF THE LOCAL CONTENT PROGRAMME ON THE MOTOR INDUSTRY

The Local content programme was designed to (1) develop a local automotive industry with jobs, skills, and established capacity, and (2) save foreign exchange. In this phase (Phase V, 1980–1988/1989) the overall domestic economy suffered severe shocks and grew very slowly, and the motor vehicle industry participated in this stagnation. This means that relatively small progress was made with objective (1) and I will leave this aside without further discussion. The treatment in the following pages focuses on the relationship between developments in the motor vehicle industry and the automotive trade deficit, and in turn the balance of payments in this period.

The discussion proceeds by considering how Phase V (a) encouraged exports and (b) attempted to reduce imports of vehicles and components. In relation to the import dimension of the industry's performance focus is given to the:

(I) severe depreciation of the Rand in the middle of the period – which increased the real value of imports.

(II) alleged existence of cost premiums on local components – which slowed down their adoption by OEM assemblers.

(III) limitations of the substitution of local for imported components that resulted from the weight (rather than value) basis of the programme.

(IV) pricing practices of MNCs (deletion allowances) – which reduced the effect on the value of imports associated with local content.

2.4.1 Automotive Export Performance

Automotive exports registered limited growth prior to the mid-1980s. The Board expected motor component export growth rates to improve rapidly as a result of the R4 per kg export incentive afforded to the industry in 1985 (BTI, 1988:43; Black, 1991:167). In particular, the total value of exported components (as distinct from motor vehicles) showed an improvement from 1986, which contributed significantly to the increase in total automotive exports (see table 2.5 below).

Table 2.5 Total Value of Built-up Vehicle Exports and Component Exports 1980 to 1998 (R millions)

Year	Component Exports	Built-up Exports	Total
1986	77	28	105
1987[a]	167	27	194
1988	139	176	317
1989	214	229	443
1990	287	381	668
1991	523	392	915
1992	832	419	1,251
1993	1,307	581	1,888
1994	1,550	695	2,245
1995	2,450	900	3,350
1996	4,051	750	4,801
1997	5,367	1,600	6,967
1998	6,732	2,100	8,832

***Source*: BTI (1988:43) for 1986–1987 ([a]1987 figures are estimates), NAAMSA (1998) for 1988–1998**

During the Phase V period the value of exported motor components increased substantially from R34m (1980) (not shown in table) to R127m (1988), and that of passenger cars increased from R52m to R172m respectively (Furstenberg, 1994:42)[14]. Total automotive exports increased notably during the mid-to-late eighties, subsequent to the implementation of the industry's export incentive. The following paragraphs attempt to consider to what extent the industry's export incentive contributed to the improved export performance of the industry.

Importantly, when considering calculations based on IDC (1995) sectoral manufacturing data (constant Rand values), the proportion of automotive exports to total manufacturing exports increased its share slightly in the late 1980s, rising from 2.2 per cent (1984 – prior to the export incentive) to 2.7 per cent in (1988 – after the export incentive was implemented)[15]. Also, between 1985 and 1989, motor industry exports grew at an average annual rate of 10.21 per cent, a marked improvement on the negative 6.12 per cent average annual growth rate attained between 1980 and 1984 (total manufacturing exports grew negatively at 2.75 per cent p.a.) before the export incentive was implemented. Whilst motor industry exports grew faster (10.21 p.a.) than total manufacturing exports, which grew at 5.66 per cent p.a. (1985 and 1989), 12 other SIC manufacturing sub-sectors (although not presented here) grew even more rapidly than those of motor vehicles[16].

This implies that the export incentive, which took effect in 1985, might have played some role in export promotion in the motor sector, but is unlikely to have been the only factor. Bell (1993:113) suggests that general factors affecting manufacturing exports as a whole in the 1985–1990 period were (1) the removal of the anti-export bias in the 1980s through the removal of QRs and the

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[14]Note: different data sources have been used to indicate the value of motor component exports and built-up exports due to the unavailability of data in some years in the BTI Report of 1988. Furstenburg (1994) used custom and excise duty data (for those earlier years) from Erasmus (Furstenburg, 1994:42). In this case Table 2.6 denotes different values than in the text.

[15] Calculated from IDC (1995) data, at 1993 prices. The percentage was 2.6 per cent in 1980, fell to 2.2 per cent in 1984 and increased to 2.7 per cent in 1988.

[16] Calculations based on IDC (1995) data ranked the motor industry 16th (1980 –1984) and 13th (1985–1989) in terms of export growth out of 25 SIC sub-sectors.

real deprecation of the Rand, and (2) increases in the incentive to export resulting from the domestic recession.

Another measure used to determine the performance of automotive exports is the export to import ratio. The rise in the motor industry's export to import ratio (see table 2.6. and figure 2.1) reflects the improvement in motor industry exports from about 1985. The trend implies either a reduction in consumption of foreign exchange by the motor industry (i.e. a decline in imports) or the enhancement in the performance of automotive exports.

It is more likely that exports grew faster relative to imports. The trend is seen more clearly in figure 2.1 – an upward trend from 1985, however it becomes more pronounced, rising sharply post-1990 (events relating to Phase VI will not be discussed here).

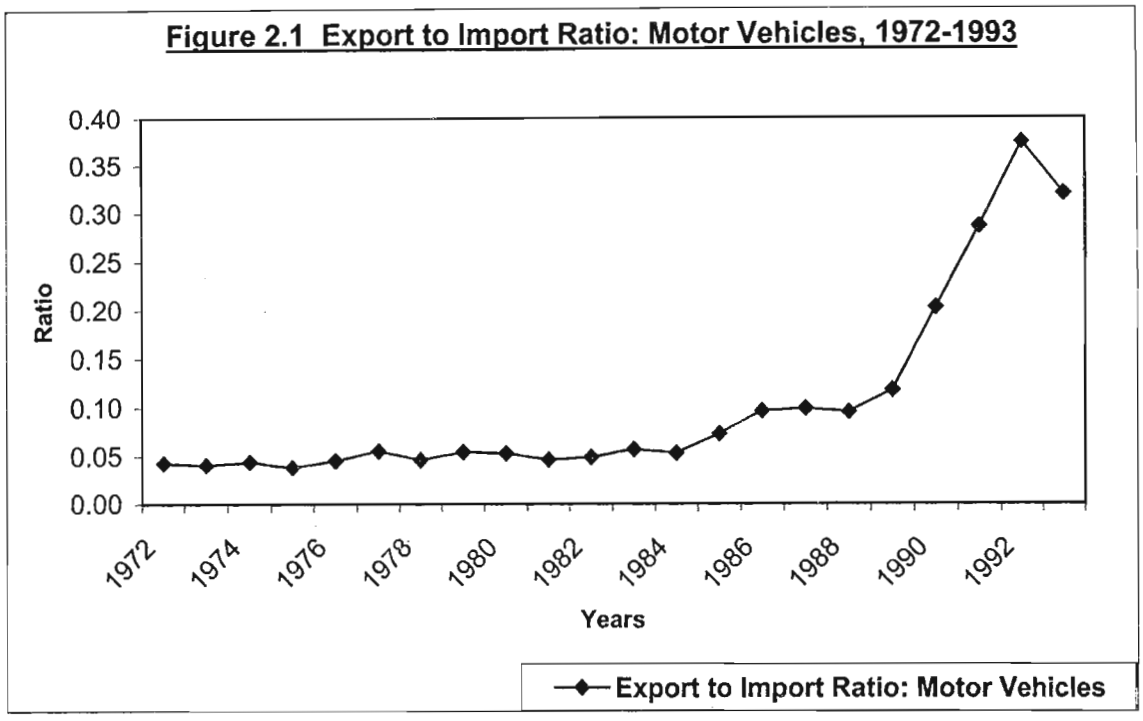
Table 2.6 Export to Import Ratio: Motor Vehicles, 1972–1993

Year	Export to Import Ratio
1972	0.04
1973	0.04
1974	0.04
1975	0.04
1976	0.05
1977	0.06
1978	0.05
1979	0.05
1980	0.05
1981	0.05
1982	0.05
1983	0.06
1984	0.05
1985	0.07
1986	0.10
1987	0.10
1988	0.10
1989	0.12
1990	0.20
1991	0.29
1992	0.37
1993	0.32

***Source*: Calculated from IDC[17] (1995)**

[17] Calculated in constant 1993 Rands.

Figure 2.1 Export to Import Ratio: Motor Vehicles, 1972-1993



***Source*: Calculated from IDC[18] (1995)**

Similarly, Furstenburg (1994:51) uses customs and excise data to calculate the import to export ratio (the opposite calculation) from 1964 to 1993, and concludes that the improvement in the export performance of passenger cars and components, was the main reason for the decline in the ratio.

Total automotive exports grew notably, especially from the mid-to-late 1980s. The industry's export incentive contributed to this growth, however economy-wide factors also played a role. The improvement in the export performance of the motor sector contributed positively to the industry's trade deficit, even though the deficit continued to rise in nominal Rand terms.

[18] Calculated in constant 1993 Rands.

2.4.2 Effects of the Depreciation of the Rand

The real effective exchange rate of the Rand deteriorated significantly in the mid-1980s during the operation of Phase V. The improvement in the export performance of the motor sector may to a certain extent be explained by the favourable impact the depreciation of the Rand had on exports coupled with the export incentive awarded to the industry during the Phase V period (as explained in the previous section).

On the other hand, the weakening of the Rand had an unfavourable impact on automotive imports. Bell (1990:58) confirms that the sharp rise in the proportion of the value of imported components to total components utilized in assembly can be attributed to the severe weakening of the Rand. This ratio increased from 51.6 per cent in 1981 to 58.7 per cent in 1986. Furthermore, the Board declared that the depreciation of the Rand resulted in a significant rise in the import content of component parts in Rand value terms (BTI, 1988:32). This meant that the weak Rand inflated the cost (Rand value terms) of component imports, thereby increasing the value of automotive imports, and thus the industry's import bill.

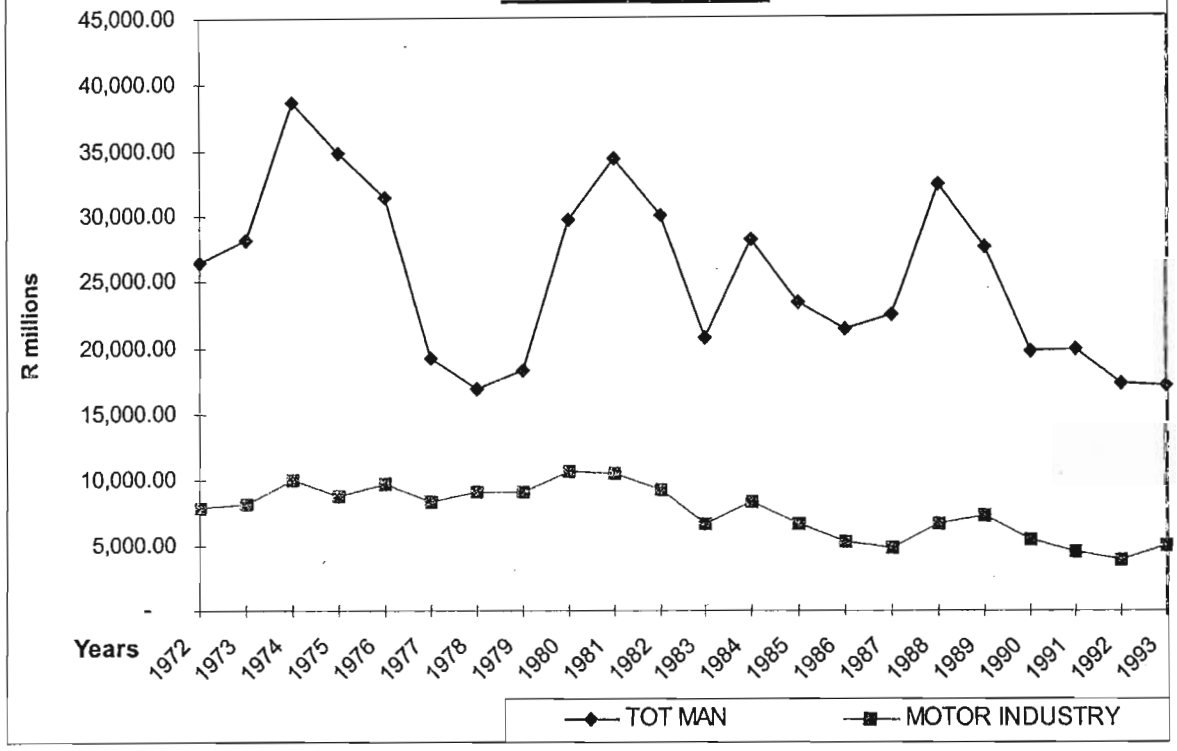
The value of imported material increased from R 927m in 1981 to R1 249m in 1986, a compound annual growth rate of 13 per cent in nominal Rand terms. Also, the percentage share of the cost of automotive imported material in total sales value of Phase V vehicles increased from 33 per cent in 1981 to 44 per cent in 1986 (BTI, 1988:31).

More specifically, the Rand depreciated against the Yen by 239 per cent and 180 per cent against the German Deutshe Mark between mid 1984 and the end 1988, a weighted average of 210 per cent (Bell, 1990:73). Since CKD kits are imported mainly from Germany and Japan, the severe deterioration in the value of the Rand contributed substantially to the rising Rand value of imports, in turn contributing to higher vehicle prices (Bell, 1990:73). Over the period 1981 and

1986, the average selling price of a vehicle increased at an average annual compound rate of 16.3 per cent (BTI, 1988:30).

Returning to the issue of net foreign exchange usage, figure 2.2 below indicates trends in the automotive trade deficit and compares it to net imports of the manufacturing sector for the period 1972 to 1993.

Figure 2.2 Automotive Trade Deficit and Total Manufacturing Net Imports, 1972-1993



***Source*: Complied from IDC[19] (1995)**

Over the period 1972–1993 (in fact, the Phase V period), the deficit for both the motor sector and manufacturing (in real terms) follow a similar trend[20], especially fluctuating with the domestic business cycle. Here, I will only refer to events occurring during Phase V, however it is noteworthy to view both trends over the broader local content protection period.

[19] Calculated in constant 1993 Rands.

[20] Note that the scale used to incorporate both variables may have flattened out the trend pertaining to net imports of the manufacturing sector.

The South African economy experienced upswings during the following periods: from January 1978 to August 1981, from April 1983 to June 1984 and from April 1986 to February 1989[21]. Since economic upswings pulls in more imports, it can be seen from figure 2.2 that both trade deficits for manufacturing and the motor industry increased during the said periods. In addition, the weakening of the Rand contributed to the rising trade deficits, especially in the mid-1980s. This reiterates the severe negative impact the depreciation of the Rand had on the trade deficit of the motor industry and also the country's balance of payments.

The motor trade deficit increased from R1.7m in 1981 to R1.8m in 1985, and sharply to R5.9b in 1988 in nominal terms (BTI, 1988:44; DTI 1998:13). However, a different picture emerges in real terms – the motor trade deficit actually fell by 37 per cent between 1980 and 1988[22].

The Board reported that Phase V did not effectively address the large net outflow of foreign exchange from the automotive industry as it was intended (BTI, 1988:61). However, given the deteriorating economic environment during the operation of Phase V, coupled with severe exchange rate fluctuations it was unrealistic for the government to expect that the Phase V programme would effectively address excessive foreign exchange consumption by the motor sector. However, the motor trade deficit did indeed improve in real terms, and leads one to suggest that Phase V might not have had an unfavourable impact on the industry's foreign exchange balance, and in turn the balance of payments as was commonly supposed.

2.4.3 Domestic Content and Cost Premiums

Experiences in other low-volume automobile producing countries indicate that excess costs of local sourcing appear as a result of local content protection, especially weight-based domestic content. Hence, the main argument submitted

[21] SARB (1998), p S-143.
[22] Calculated from IDC (1995) in constant 1993 Rands (see table 2.8).

against the local content programme was that cost premiums[23] (or excess costs of sourcing components locally) were associated with higher degrees of domestic content (BTI, 1988:4). The weighted local content scheme adopted by the automotive industry during the early 1960s and kept in place through to the 1980s, is believed to have resulted in cost premiums associated with the domestic sourcing of motor components and tooling in fulfillment of the prescribed local content requirements. Generally, cost premiums of local production of components induce domestic OEMs to import components instead of sourcing them locally, since it becomes relatively cheaper to import given the excess costs of local sourcing.

Investigations were periodically undertaken by the Board of Trade and Industry (BTI, 1988) and National Association of Automobile Manufacturers of South Africa (NAAMSA, 1983) in order to assess the performance of the automotive sector in light of the local content programme. Most of the analyses and examinations published in the BTI reports are not adequately explained. Consequently, one is not able to examine the analyses in detail, but rather has to accept them as given. Therefore, estimates provided in the BTI reports are accepted for the purposes of this study.

Analyzing the industry's cost structure at various levels of local content, it was discovered that at the minimum local content level (66 per cent: Phase V), for most major crucial components – the cost of local material exceeded the cost of imported material (BTI, 1988:18). In particular, the analysis revealed that in the region of between 50 and 55 per cent (local content by weight), local sourcing for most major components became uneconomical when compared to the foreign sourcing of components (BTI, 1988:84) and hence, excess costs will be large. According to the Board (1988) the optimal level of local content by weight should have ranged between 40 and 50 per cent and not the prescribed 66 per cent (BTI, 1988:84).

[23] Cost premiums refer to the difference between the costs of imported materials and the costs of local materials in automotive products.

Furthermore, Bell (1989:108) and the BTI (1988:122-125) both agreed that excess costs of local sourcing (and its associated inefficiencies) as a result of domestic content protection have actually been much smaller than has been commonly assumed. This was based on analysis conducted by the Board in 1986 (BTI, 1988:23); the figures revealed that components that were sourced locally, comprising up to 70 per cent of the weight of a typical small motor car, resulted in cumulative cost savings of 8.3 per cent of the excise value of the car. On the other hand, greater savings would have been realized had 50 per cent of local content by weight been employed. Then a cost saving of 11.9 per cent of the vehicle excise value would have been attained. Thus, in the 50–70 per cent local content range, the excess costs of local components would be equivalent to 3.6 per cent (11.9 per cent – 8.3 per cent) of the vehicle excise value (Bell, 1989:108).

Hence, it can be suggested that local content requirements, particularly that of Phase V, was probably set too high (on a weight basis) based on the given cost estimates (above), and that it might have raised excess costs of locally sourced components, although not significantly. Cost premiums associated with local sourcing, however, induced some local firms to source components from overseas, thus using the industry's scarce foreign exchange.

2.4.4 Effects of Higher Weight-based Domestic Content

In keeping abreast with the progression of local content targets, it became increasingly difficult for component producers to reach higher degrees of local content by weight (in terms of value). Local component manufacturers deliberately made parts heavier to ensure that their weighted targets were met in locally assembled vehicles irrespective of the actual local content value embedded in the vehicles. The South African automotive industry is characterized by small production runs and unable to take advantage of minimum efficient scale, mainly as a result of rapid introductions of model varieties in an attempt to raise profitability and to satisfy consumer tastes in a stagnant domestic economy. The constant introductions of new vehicle makes,

models and model variants (see table 2.3) made it difficult for OEMs to reach higher levels of local content percentages.

Achieving local content levels in excess of 66 per cent based on weight was unsuccessful during the operation of Phase V (BTI, 1988:83). This was more the case regarding the achievement of higher value-based local content. According to the BTI, the 66 per cent local content on a weight basis was equivalent to an estimated 37.24 per cent local content by value (BTI, 1988:20), thus confirming the inverse relationship between weight and value – in the sense that most locally produced components contained more weight (mass) and less value. Alternatively, most of the sophisticated components (electronics, ventilation systems, etc.) with a high value-mass ratio were imported. Measuring local content on a weight basis encouraged the domestic sourcing of components with high mass and relatively low value. On the other hand, according to industry sources, some OEMs found that in some instances it was actually cheaper to import high value low mass (weight) component parts than to source them domestically despite the import duties and tariffs that protected the automotive sector.

The depreciation of the value of the Rand contributed to rising tooling costs, which led to the higher pricing of local components. In order to increase local content and to prohibit the adverse effects of the weak Rand, OEMs resorted to constructing domestic tooling. Some OEMs maintained that the estimated cost of locally constructed tooling was in the region of 33 and 60 per cent of the cost of automotive imports. Thus, OEMs became less dependent on imported tooling – importing less than 50 per cent of their tooling requirements (Bell, 1990:84).

However, large investments in tooling equipment and machinery, adequate facilities and training by the motor industry were not justified by the low production volumes that were evident in the depressed car market. New passenger car sales fell from an all time high of 301,528 units in 1981 to 174,453 units in 1986.

In line with the point made earlier regarding the constant introductions of new vehicle models, the BTI estimated that average tooling costs for introducing a new model at 66 per cent local content based on weight soared from between R3m and R8m in 1977 to between R40m and R100m in 1987 (Black, 1991:166). Tooling amortization per vehicle rose from R72,797 in 1981 to R124,636 in 1986. The percentage share of tooling amortization to the value of total sales increased slightly from 2.46 per cent to 3 per cent over the same period[24].

In addition, research has shown that there is a positive relationship between rising local content and rising production costs, which might ultimately be manifested in higher retail vehicle prices. Also, industry sources suggest that the weight-based local content scheme was the underlying cause of vehicle price inflation, in that OEMs were continuously faced with rising costs in attempting to reach their local content targets. Domestic vehicle prices have been on the incline since 1985, at a rate exceeding the production price index (PPI), consumer price index (CPI) and manufacturing wages (MITG, 1994:26). Hence, vehicle prices have been rising since 1985 in excess of the consumer price index (CPI) and import prices in general.

In contrast, Kantor (1989:12) argues that weight-based local content protection could not have resulted in vehicle price inflation, since the cost of local motor vehicles rose at a slower rate than consumer prices. He maintains that the withdrawal of foreign capital resulting in the collapse of the domestic currency in the mid-1980s kept real car prices high. A comparison of the prices of most of durable/semi-durable goods (with high local content – such as television sets) by the average household further shows that average motor vehicle prices experienced the largest price hike over the period 1982 to 1986 – an increase in excess of 130 per cent as measured by the PPI in nominal terms (BTI, 1988:27). Although, motor vehicle prices increased considerably, it is not clear whether the price rise was attributable to higher levels of weight-based local content.

[24] Calculated from BTI (1988:30)

Even though some OEMs resorted to constructing tooling requirements domestically (as mentioned above), the industry continued its reliance on foreign technologies, tooling equipment and certain sophisticated imported materials. It became more costly given the depreciation of the Rand, thus further extending the foreign exchange gap between foreign exchange earnings and foreign exchange consumption in nominal terms.

Despite higher levels of content requirements stipulated under Phase V, the motor industry remained a net importer of vehicle products, thus contributing to the industry's import bill in nominal terms.

2.4.5 Deletion Allowances

There are cost premiums associated with the pricing practices of MNCs – deletion allowances. Deletion allowances refer to the "amount subtracted from the price of a completely knocked down (CKD)-package for components which, because they are now locally produced, no longer have to be imported" (Swart, 1974:92). The foreign firms providing the CKD packs always tend to set deletion allowances such that a proportion of their overheads are at least covered (Swart, 1974:93) and some profits may accrue to the source firm (Bell, 1990:65). When deletion allowances are set low or discounted, it implies that the domestic OEMs are charged import prices in excess of world competitive prices for the remainder of the CKD package. This involves adding to higher costs of production, especially in terms of import prices. Thus, it impedes the voluntary increases in local content by OEMs and increases the industry's import bill. In addition, the depreciation of the Rand had a cost raising effect on components sourced from foreign firms.

Low deletion allowances offered by MNCs, as is the case under the local content policy, may have contributed to the increase in nominal foreign currency usage by the industry.

This section has attempted to discuss the impact of Phase V of the local content programme, in particular focusing on the aspect of foreign exchange usage (amongst other related aspects referred to above), which has been a major problem for the industry. The conclusion that can be drawn from the above discussion is that Phase V may not have contributed significantly to the large foreign currency usage by the motor industry, and therefore may not have had a substantial (unfavourable) effect on the current account of the balance of payments.

The following section further elaborates on the issue of foreign exchange usage by the motor industry in real Rand terms, for the period 1972–1993.

2.5 FOREIGN CURRENCY USAGE BY THE MOTOR INDUSTRY: 1972–1993

Many have emphasized, including the Board of Trade and Industry (BTI), that the local content programme was primarily responsible for excessive foreign exchange consumption in the automotive industry, especially during the mid-1980s, and that it had an unfavourable impact on the current account of the balance of payments.

This section of the study aims to discuss this issue in some detail. Thus, it attempts to discuss and illustrate the effects of the local content programme (at least in the period from 1972 to 1993) on motor industry imports, and in particular the automotive trade deficit. Two measures are considered when discussing this: (1) the long-term trend of the import penetration ratio (IPR) for the motor sector, and comparing it to other manufacturing sub-sectors in the metal products group of industries, and (2) the performance of the industry's trade deficit.

Table 2.7 Import Penetration Ratios, 1972–1993 (1993 Constant Prices)

SIC Sector	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Electrical Machinery	32.60	31.45	35.11	32.05	32.68	29.24	26.17	26.82	28.06	29.51	28.46	23.69	29.23	29.47	29.95	28.97	32.24	31.84	28.22	28.93	28.53	28.28
Machinery and Equipment	51.87	55.04	65.98	60.24	57.99	49.22	46.18	46.80	48.51	48.12	44.11	39.29	45.59	44.29	48.07	45.91	52.07	49.32	43.05	45.86	43.37	43.13
Metal products	7.88	7.57	8.99	8.23	8.04	7.61	7.46	7.18	7.54	7.47	7.82	6.82	9.86	10.73	12.06	11.95	13.78	13.13	11.85	13.28	13.23	12.33
Iron and Steel basic industries	17.08	17.94	20.22	16.70	11.36	7.24	4.47	4.29	5.16	5.46	6.01	5.34	5.88	7.00	7.70	9.50	12.17	11.92	10.09	8.70	7.98	8.89
Other Transport equipment	36.60	41.06	49.51	43.79	44.56	40.76	43.72	41.88	43.93	38.87	34.09	29.35	39.67	39.16	40.93	39.34	44.66	43.90	40.52	48.69	51.33	52.48
Motor vehicles	38.57	35.83	39.11	33.54	34.30	31.83	31.31	29.86	27.96	25.08	23.53	20.20	24.79	25.48	23.73	20.10	24.08	27.27	24.30	22.76	23.39	29.15

***Source*: Calculated from IDC (1995)**

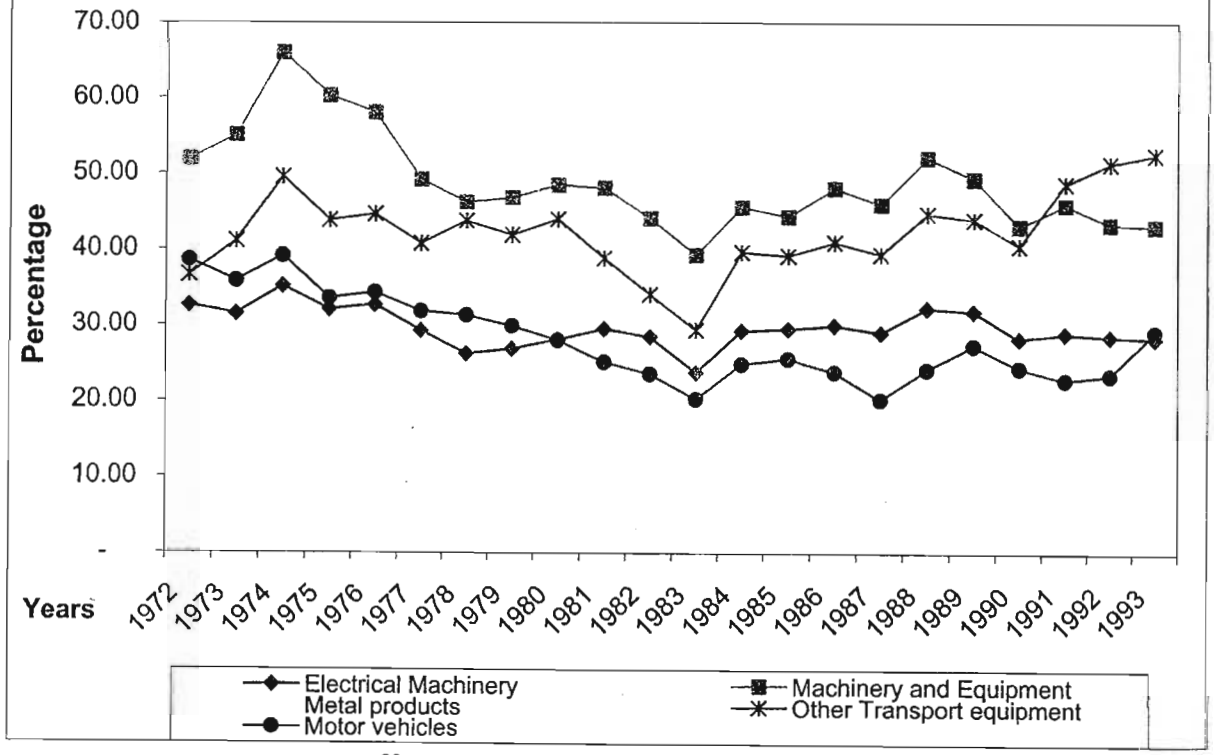
Table 2.8 Trade Deficit: Motor Industry, 1972–1993 (1993 Constant Prices) in R millions

Year	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Imports	8,216	8,467	10,491	9,136	10,182	8,864	9,508	9,719	11,316	11,044	9,814	7,062	8,759	7,214	5,814	5,283	7,419	8,201	6,796	6,374	6,190	7,307
Exports	352	345	462	351	461	488	437	525	598	511	479	401	464	526	557	520	704	961	1,371	1,820	2,316	2,338
Trade Balance (Net Imports)	7,864	8,122	10,029	8,785	9,721	8,376	9,071	9,194	10,718	10,533	9,335	6,661	8,295	6,688	5,257	4,763	6,715	7,240	5,425	4,554	3,874	4,969

***Source*: Calculated from IDC (1995)**

When considering the long-term trend in the IPRs – the relatively high import penetration ratio (IPR) of the motor industry for the period 1972 to 1993, broadly reflect the import dependence of the industry [25](see table 2.7). IPRs are defined as the ratio of total imports to domestic demand [M / (Pr + M – X)] (Bell, 1993:98; Khan, 1991:68; Nordas, 1996:727), where M represents imports, Pr denotes gross production and X represents exports. Based on this definition, using IDC (1995) data, the IPR of the motor industry reveal a gradual downward trend at least until the mid-1980s in real terms (see table 2.7 and figure 2.3). Generally, falling IPRs indicate that imports are being substituted by domestic production and that the sector might be becoming less reliant on imports. This falling trend has been confirmed by Khan (1991:68).

Figure 2.3 Import Penetration Ratios (IPRs), 1972-1993



***Source*: Compiled from IDC[26] (1995)**

[25] IPRs of machinery and equipment, electrical machinery, other transport equipment (excluding motor vehicles) and motor vehicle are relatively higher than those of other manufacturing sub-sectors (Bell, 1993:98).

[26] Calculated in constant 1993 Rands.

He explains that the IPR for the broad category, motor vehicle and transport equipment, had been declining slowly since 1970 and continued to do so until 1985. However, he notes that the ratio should have been smaller when taking into account the protective measures that were awarded to the sector (Boxall, 1989:18-19).

Also, the IPRs of other sub-sectors in the metal products group of industries[27] are compared to that of the motor industry over the period 1972–1993. Three periods or phases can be noted (1) the period from 1974 to 1983 – the IPR for the motor industry follows a downward trend[28], while the other sub-sectors[29] tend to follow a fluctuating trend (On a general basis, IPRs have been declining, see table 2.8), (2) from 1983 to 1989 – generally all IPRs, including motor vehicles tend to move in a similar fashion (rising temporarily between 1983–1985, and again between 1987–1989, and (3) 1989 to 1991 – the IPRs for most sub-sectors fall, including that of motor vehicles. It is noteworthy that during the entire period, 1972–1993 the IPR for the motor industry as well as the other sub-sectors (in the figure) tend to be quite volatile, thus one cannot ignore the effects of the domestic business cycle on imports. For instance, between April 1986 and February 1989, the South African economy was experiencing an upswing, thus the IPRs for most sub-sectors increased as indicated by (2).

The IPR for the motor industry does not provide a clear long-term downward trend in figure 2.3; hence it is difficult to assess what effect local content might have had on the foreign exchange consumption by the motor industry. However, the data at hand suggest, particularly in (1) and (2), that Phase V of the local content policy, might not have contributed negatively to foreign exchange usage by the motor sector, and in turn, the motor trade deficit. Also, over the Phase V period, 1980 to 1988, the motor trade deficit declined by 37 per cent in real terms[30].

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[27] Metal products group of industries include the following SIC sectors: metal products, electrical machinery, other transport equipment (excluding motor vehicles), machinery and equipment, including motor vehicles (Bell, 1993:106).

[28] The IPR for the motor industry fell from 39 per cent in 1974 to 20 per cent in 1983.

[29] The long-term trend in the IPRs for all sub-sectors also falls during this period (although fluctuating) (see table 2.8).

[30] Calculated from IDC (1995) data, constant 1993 Rands (see table 2.8).

Over the broader time frame, 1972 to 1993, the motor trade deficit also fell by 37 per cent in real terms (see table 2.8), which supports the idea that it is questionable whether local content was primarily the reason for excessive foreign exchange usage by the industry as noted by the Board. Regarding (3) above, which falls into the Phase VI period of the local content programme, the IPR for the motor industry declines in real terms, suggesting that at least in the initial stage of Phase VI until 1991, foreign exchange usage in the motor sector decreased in real terms, thereafter it started rising again.

2.6 CONCLUSION

It is apparent from the discussion in section 2.5 that many perceived that Phase V of the local content scheme had failed in its attempts to achieve the objectives envisaged by the Board (see section 2.2). The Board (1989b:2) expressed this main finding when recommending the shift in local content policy from a weight-based scheme (Phases I–V) to a value-based scheme (Phase VI). The report refers to the industry's:

> " . . . *rate of increase in net foreign exchange usage" and "that the automotive industry as a whole has had a large negative impact upon the balance of payments . . ."*

Several authors then and subsequently have similarly maintained that Phase V of the local content policy failed in its attempts to save foreign exchange in the motor industry and that it contributed largely to the industry's import bill.

Boxall (1989:28) attributes the shortcomings of the local content policy, particularly Phase V, to the structure and nature of the local content scheme, specifically the fact that it was based on weight. Also, Dix (1995:30) agreed that Phase V was unable to reduce the large foreign exchange usage and did not lead to rationalization of the industry. Finally, Furstenburg (1994:45) confirmed that Phase V of the local content programme was ineffective in successfully reducing the value of net imports in the automotive industry.

There is apparent evidence against it, namely, trends in the annual IPRs for the motor industry (see figure 2.3 and table 2.7), and other manufacturing sub-sectors in the metal products group of industries show that at least in the period 1972 to 1993 (Phase V and into Phase VI) it renders questionable whether local content requirements had a significant effect in this period.

Especially, between 1983 and 1985 and again between 1987 and 1989, there was a sharp rise in the IPRs for all sub-sectors in the metal products group of industries (including most other manufacturing sub-sectors not shown here) in real terms. This can to an extent be explained by the sharp deterioration of the Rand that occurred in the mid-1980s. In addition, the motor trade deficit declined in real Rand terms over the Phase V period – the trade balance fell from R11 billion to about R7 billion between 1980 and 1988 in constant Rand terms (see table 2.8). This view is consistent with Keeton (1989:2); he claims that in real terms, foreign exchange usage by the South African automotive industry did not rise during Phase V, in particular between 1985 and 1988, and in nominal "Rand terms, the increase in foreign exchange usage by the motor industry . . . is largely explainable by the effects of the devaluation . . . "

It is important to consider that Phase V operated in an extremely uncertain and unfavourable domestic economic environment (sanctions, political instability, recessionary conditions, real depreciation of the domestic currency). However, further evidence suggest that Phase V of the local content programme, might not have had a significant negative impact on foreign currency usage by the motor industry in real terms, and in turn the current account of the balance of payments.

The need for export expansion has already been emphasized. With the moderate success of the export incentive under Phase V, greater export promotion is seen as vital to increasing the country's capacity to pay for imports and ultimately reduce the motor trade deficit (net imports). The next Phase of the local content programme, Phase VI, which is referred to as an export

facilitation scheme, was introduced to encourage motor industry exports. More will be said in this regard in the following chapter.

In 1986, the Board undertook extensive investigations regarding the performance of the motor industry and its impact on the country's balance of payments. Hence, the new Phase VI programme was implemented in March 1989 and will be examined in the following chapter.

CHAPTER 3

PHASE VI OF THE LOCAL CONTENT PROGRAMME: A STRUCTURAL ADJUSTMENT PROGRAMME FOR THE AUTOMOTIVE INDUSTRY IN THE CONTEXT OF TRADE LIBERALIZATION

3.1 INTRODUCTION

Foreign exchange shocks, balance of payments problems and economic stagnation in the 1980s forced the South African government to review trade and industrial policy, and to pursue measures to liberalize trade – a process that had begun in the 1970s. Trade liberalization includes any act (such as relaxing quantitative restrictions, reducing tariffs, devaluation of the nominal exchange rate, export subsidies, etc.), which shifts the trade regime towards a stance that is more neutral as between exports and other domestic production – that reduces the biases caused by trade policy against exports and toward other domestic production (Bell, 1993:820). Trade neutrality (reduced biases with incentives equalized between exporting and import-substituting sectors) and trade liberality (reduced controls and barriers to trade regardless of biases) are two essential ingredients of any trade liberalization stance (Metzel and Phillips, 1998:3). Moreover, trade neutrality does not necessarily imply that export subsidies and import duties should be excluded from a trade liberalization programme (Holden, 1992:250).

As noted, South Africa introduced measures of liberalizing trade as early as the 1970s (Bell, 1993:84). For the first time export incentives were introduced following recommendations by the Reynders Commission in 1972. Later quantitative restrictions (QRs) on certain import products were slowly relaxed between 1972 and 1976 (Bell 1993:85, Jenkins 1999:28). The 1980s saw changes that will be discussed in this sub-section – with emphasis on the motor industry. Finally, liberalization of foreign trade accelerated when South Africa participated in the Uruguay Round and became a signatory to the Marrakesh Agreement of GATT in 1994.

After this quick introductory overview, we return to the 1980s. In the middle of that decade, South Africa's trade regime included the adoption of a more outward orientation growth strategy. This involved trade policy reform by way of structural adjustment programmes[1], particularly in the manufacturing sector. Typically, structural adjustment programmes worldwide follow a similar trend. Initially tariff schedules are simplified by reducing the number of separate tariff lines. Then non-tariff barriers (NTBs) are eliminated. In turn, tariffs might be temporarily raised to avoid the adverse effects that the removal of import controls might have on domestic firms. Finally, all tariff rates are lowered and the net result is a reduction in the levels of protection (Bell, 1993:85; Metzel and Phillips, 1998:6).

The implementation of structural adjustment programmes in South African manufacturing (namely, in the automotive, clothing and textile sub-sectors) were to diversify the export base and accelerate export growth of the manufacturing sector. This was primarily as a result of the drastic decline in the contribution of mineral exports to total exports. Gold exports as a percentage of total exports fell significantly from 1981–1985 (40.7 per cent) to 1990-1994 (24.8 per cent), whereas export growth in overall manufacturing sector improved substantially and partially offset the dismal export performance of gold (Tsikata, 1999:22).

In the motor industry, Phase VI, a structural adjustment programme, was introduced in March 1989 (to be discussed in section 3.3). The main reason for its introduction was that the gap between foreign exchange earnings and foreign exchange consumption in the motor sector (in nominal terms) had widened further. With reference to Phase VI, the BTI (1989:2) wrote that it was intended as a:

> " . . . *local content programme that will effectively address the excessive foreign exchange usage by the automotive industry.*"

[1]Structural adjustment programmes represent a significant act of trade liberalisation (Bell, 1993:89).

What was deemed to follow from this objective was the need to curb foreign exchange usage (by local content measures) and enhance motor industry exports. Thus, a key feature of the Phase VI programme was the import-export complementation (IEC) scheme that was linked to value-based domestic content targets. *Exports could be counted as local content value*. Export credits in lieu of reductions in foreign exchange consumption on imports were granted, that is, an export subsidy of 50c in the Rand was introduced. According to industry sources the IEC scheme played an important role in encouraging OEMs and component producers to expand their exporting capabilities. Hence, this "export facilitation scheme" was primarily responsible for the growth of motor industry exports, particularly motor components, under Phase VI as well as under the MIDP.

This chapter first provides some introductory theory of trade liberalization and then considers preliminary South African evidence in line with theoretical expectations of the impact of trade liberalization (section 3.2). A detailed explanation of the structure of Phase VI of the automotive policy is given and implications of the policy are considered (section 3.3). The study also attempts to establish whether Phase VI of the local content programme – an industry-specific programme – was primarily responsible for the export expansion in the automotive sector or whether it was attributable to trade liberalization in general, which progressed in the mid-1980s. Furthermore in section 3.4, it attempts to measure the performance of motor industry exports, providing a breakdown of the categories of motor component exports, using disaggregated harmonized system (HS 8-digit) tariff classification data. It was found that total Phase VI motor industry exports grew significantly, in constant Rand and US dollar terms (foreign currency earnings). The last section of this chapter (section 3.5) attempts to examine South Africa's automotive trade balance and notes that Phase VI was not particularly successful in reducing foreign exchange usage in the sector, even though the significant growth in automotive export products contributed to the sector's trade balance. Finally, the chapter concludes that industry-specific policy, that is, Phase VI of the local content programme, was indeed the main reason for export expansion in the motor industry.

3.2 TRADE LIBERALIZATION: THEORY AND SOUTH AFRICAN EXPERIENCE

South African manufacturing industries are presently in the midst of tariff reform. The government has undertaken a slow but steady approach to trade reforms, to ensure reform credibility and sustainability in the long run. Generally, trade reform and trade liberalization programmes are expected to bring about a significant improvement in trade performance, and in turn promote economic growth. The research literature, which reviews trade liberalization programmes in developing countries, however, provides no definite conclusion regarding their impact on export expansion and higher economic growth rates. Also, a number of studies have shown that trade liberalization is associated with short run adjustment costs relating to reductions in employment and output levels.

This section of the study is divided into two sub-sections. Firstly, it deals with the introductory theory of trade liberalization and secondly, it provides preliminary South African evidence, particularly in manufacturing, of the impact of trade liberalization. Also, reference is made to trade liberalization experiences in international automotive industries.

3.2.1 Trade Liberalization: A Theoretical Introduction

The theory of trade liberalization indicates that economic growth rates may rise due to the static and dynamic effects of trade liberalization episodes. A static effect is a response to changes in relative prices which follow from trade liberalization. The prices of exportables rise relative to the prices of importables; and the prices of tradables rise relative to the prices of non-tradables. Static efficiency can further be decomposed into two effects, X-efficiency and allocative efficiency. An X-efficiency improvement refers to an increase in production employing the same quantity of resources, whereas an improvement in allocative efficiency involves the reallocation of resources to make society better off. Static effects are generally one-time improvements. Dynamic effects, on the other hand, are expected to have permanent results: a permanently

higher growth rate may result from increased competition and enhanced technological learning and innovation through increased investments.

A closer examination of the issues shows the need for some qualifications – and points to the indication of efficiency improvements. In general, an improvement in static efficiency may increase economic growth temporarily and an improvement in dynamic efficiency is expected to increase economic growth permanently (as just noted), but this may in fact depend on the domestic trading market structure of the economy (Dijkstra, 2000:1568). He argues that imperfect competition may hamper expected positive static effects of trade liberalization. In most cases, trade liberalization is expected to lower the price of importables and increase the price of exportables. Producers in the domestic market tend to become more efficient when competition increases from imports, thus increasing X-efficiency. One indicator useful in assessing improvements in X-efficiency is evidence of improvements in labour productivity. An indicator of allocative efficiency effects is when an economy tends to produce according to its comparative advantage after trade liberalization. In addition, it is often argued that allocative efficiency is associated with short run adjustment costs due to the slow mobility of resources from one sector with low comparative advantage to another with a higher comparative advantage. Short run adjustment costs include falling employment and falling output.

Another important aspect of trade liberalization is its impact on export expansion. Empirical evidence suggests that trade liberalization is often associated with accelerated export expansion. However, some writers think it is unclear whether there is a causal relationship between export improvement and trade liberalization (Bell, 1993:100) and whether it is a necessary relation (if there is one). In Jansen van Rensburg, et al, (1998:21), Sachs (1987,1989) maintained that "... trade liberalization may not be a necessary component of successful outward orientation". He argues that active government intervention is more so, given the experiences of East Asian countries. In conventional trade theory, however, import liberalization is an important determinant for export promotion. Bell has (1993:101) questioned whether further import liberalization is necessary for accelerated export expansion in South Africa. His argument is

based on the fact that there seems to be no conclusive evidence that import liberalization, especially tariff reductions, leads to export growth. This is supported by Liang (1992:469): " . . . radical import liberalization may not always lead to export expansion, . . ."

Research evidence further indicates that trade liberalization might promote increased diversification of exports. However, trade liberalization on its own is insufficient to contribute to the diversification of exportables [(M'Wega, 1995) in (Metzel and Phillips, 1998:18)].

Moreover, according to the views of "new" (endogenous) growth economic literature, the effects of export expansion that is possibly attributable to trade liberalization may raise productivity levels (Soludo, 1998:3; Coetzee, et al, 1997:188). A study by Iscan (1998:123) quoted in Jansen van Rensburg, et al, (1998:9) on Mexican industries concludes that trade liberalization might have a positive short-term impact on productivity growth rates, but that no significant long-term effects have been noted.

Many empirical studies examining the allocative efficiency effects of trade liberalization on employment conclude that the adjustment costs of trade liberalization are small in relation to the benefits that may be reaped. According to Matusz and Tarr (1999:1-2), manufacturing employment levels in developing countries typically increase shortly after trade liberalization. One reason for this, is the idea that developing economies tend to have a comparative advantage in labour-intensive industries, and that trade liberalization tend to favour labour-intensive industries. Others argue that trade liberalization may in fact lead to a structural change within manufacturing such that it may favour capital and skill-intensive sectors and hence increase employment levels in these sectors.

Dijkstra (2000:1571) notes the significance of a strong industrial base of an economy liberalizing its trade. Empirical evidence suggests that smaller countries with a limited industrial base are unlikely to experience significant improvements in dynamic efficiency, especially in the long term. The reason for

this is that countries with a weak industrial base experience limited R&D investments, technological learning and economies of scale (Dijkstra 2000:1580). One may assess dynamic efficiency effects of trade liberalization by determining to what extent manufactured exports have grown after trade liberalization, especially skill-intensive and capital-intensive manufactured exports. Evidence of these effects in South Africa will be considered in the next sub-section.

The timing of trade liberalization programmes is crucial. Any successful trade reform outcome is reliant upon a sound and sustainable macroeconomic environment and international framework (Holden, 1992:249; Bell, 1993:121). The credibility and sustainability of a trade liberalization episode is dependent on the credibility of a country's economic performance and macroeconomic policies. Suitable complementary (support) sectoral policies should accompany trade reforms to ensure the desired economic benefits and outcomes that may be expected from static and dynamic efficiency effects of trade liberalization (Metzel and Phillips, 1998:19-20; Dijkstra, 2000:1571).

3.2.2 Trade Liberalization and South Africa's Manufacturing Industry[2]

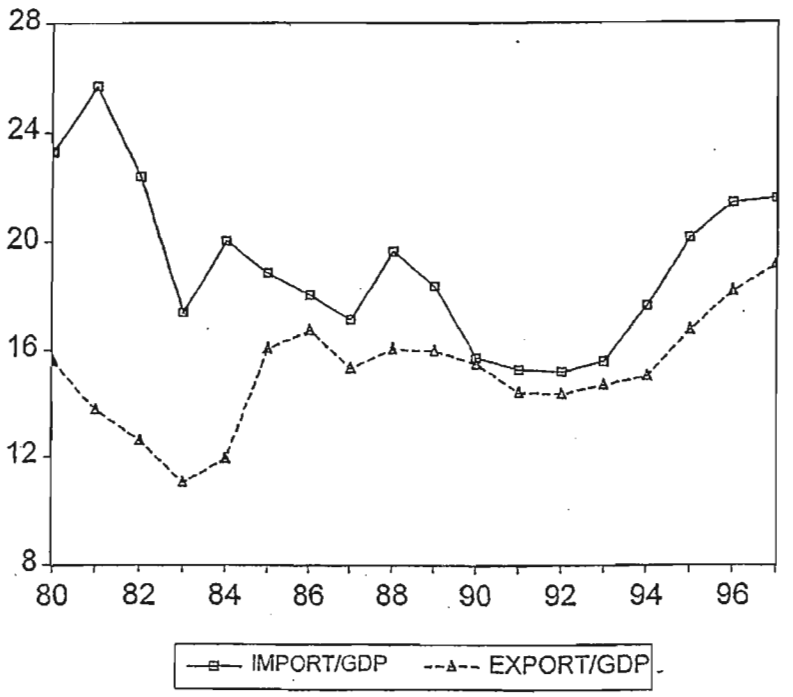
One measure used to determine the impact or extent of trade liberalization is to consider changes in relative prices in the economy subsequent to the introduction of the trade reform programme. Trade liberalization tends to lower the price of importables relative to that of exportables, thus encouraging manufactured exports. Also, trade liberalization tends to increase the price of tradables relative to non-tradables and hence stimulate exports. Theoretically, this has the effect of a real depreciation of the domestic currency – raising the price of exportables and importables (tradables) relative to that of non-tradables (Holden, 1992:257). The effects of the real exchange rate is a short-run phenomenon and have certainly contributed to the significant export expansion of the manufacturing sector, but at the same time have raised the costs for

[2] Please note that this section extends beyond the Phase VI period, it incorporates trade liberalization experiences in South Africa from the 1980s to the 1990s.

domestic producers reliant on imported inputs. It should be noted that the sharp depreciation of the Rand in mid-1984 and 1996 was not a deliberate act of trade liberalization by the South African government. Tsikata (1999:9-10) reveals that the relative price of tradables has been consistently falling since the early 1980s reflecting some degree of liberalization or openness of the South African economy.

Normally, trade intensity ratios (exports and imports as a share of GDP) are expected to increase with trade. Based on estimates done by Tsikata on exports and imports as a share of gross domestic product (GDP) for South Africa, over the period 1980 to 1997, export growth proved to be successful. Figure 3.1 below shows a marked increase, particularly in the export to GDP ratio from 1992. This reflects the progress of openness of the domestic economy and export expansion, which can partly be explained by accelerated trade liberalization strategies in the 1990s.

Figure 3.1 Exports and Imports as a Share of Gross Domestic Product (GDP), 1980–1997



***Source*: Tsikata (1998:8)**

The evidence of growth in manufactured exports is indicative of the dynamic efficiency effects of trade liberalization. Roberts (1998:37) confirms that the export performance of overall South African manufacturing has grown significantly since 1991. However he notes that it has been accompanied by falling employment and output. Tsikata (1999:21) and Edwards (1999:3) find that South Africa's manufacturing export base has indeed become more diversified, particularly in non-traditional exports. There was in fact a shift from labour-intensive industries to capital-intensive industries.

Similarly, trade liberalization programmes in Central America and Carribean economies are said to have led to increases in non-traditional primary exports (Dijkstra, 2000:1579). In recent years labour productivity has improved substantially in South African manufacturing (Tsikata, 1998:71), which presents some evidence of improvements in X-efficiency.

Rising manufacturing IPRs since the 1990s imply that imports are increasingly substituted for domestic production. Since imports have increased in the more labour-intensive industries, manufacturing employment levels have been adversely affected (Edwards, 1999:6). Hayter (1999:2) notes that aggregate manufacturing employment levels fell faster after the trade liberalization episode of 1994 than before its commencement. Trade liberalization tends to have favoured the more capital-intensive industries in South Africa (Hayter, 1999:3; Edwards, 1999:15), as noted above. However, within the capital-intensive sub-sectors as classified by Edwards (1999), including motor vehicles, employment levels have dropped. He suggests that a possible explanation for the job losses might be the increased adoption of more labour-saving technologies in these sectors in recent years. On the other hand, Tsikata (1998:71) finds that employment in less labour-intensive industries have been favoured.

Following trade liberalization, the trade balance for the manufacturing sector and most other sub-sectors have deteriorated (refer to figure 2.3 for the period up to 1993 for motor industry and total manufacturing). This seems to be consistent with research evidence – deterioration of the trade balance after

trade liberalization. A net export measure, the revealed comparative advantage (RCA)[3] measure, calculated by Roberts (1998:41-42) reveals that although exports have increased, imports increased at a significantly faster rate. He calculated the RCA measure for various manufacturing sub-sectors to determine the effect of trade liberalization on their trade performance. The RCA measure provides an indication of the trade balance of the various sectors; a negative RCA indicates a trade deficit.

The calculations imply that trade liberalization may have led to a deficit in trade for manufacturing as a whole, which attained an RCA measure of -0.17 per cent for 1996. Most sub-sectors within overall manufacturing observed negative RCA measures, including motor vehicles.

Similarly, in Brazilian [Moreira and Correa (1998) in Dijkstra (2000:1575)] and Mexican [Weiss (1999:155) in Dijkstra (2000:1575)] manufacturing industries (including most sub-sectors) the trade balance weakened after trade liberalization occurred. However, the authors concluded that it might have been attributable, at least to some degree, to the effects of the overvalued exchange rate at the time. Whatever may be the correct explanation in particular cases, it is clear that a weakened trade balance may follow trade liberalization if imports tend to grow faster than exports.

[3] The RCA ratio is calculated as exports minus imports divided by exports plus imports of the industry in question (Roberts, 1998:77).

Moreover, in a preliminary analysis of the impact of trade liberalization on manufacturing in South Africa, an inverse relationship between trade performance and production and employment was found over the period 1990–1996 (Roberts, 1998:67). According to Roberts (1998:68), "In many sub-sectors (including motor vehicles) it was found that improved trade performance had been associated with contractions in output and employment, while in most of the 6 sub-sectors[4] in which employment had increased, trade performance also deteriorated". Roberts (1998) finds limited evidence of trade liberalization leading to enhanced specialization according to comparative advantage in manufacturing industries. Hence, there is little improvement in static efficiency as an effect of trade liberalization. On the other hand, the significant growth in manufactured exports is evidence of the dynamic efficiency effects of trade liberalization.

Now we turn briefly to consider international evidence of the impact of trade liberalization on motor vehicle industries in other developing countries. In Mexico the impact of trade liberalization in automobiles (and electronics) was not wholly responsible for the high export growth rates experienced by these sectors. Instead it was due to special support schemes that were introduced that provided the stimulus for export expansion (Dijkstra, 2000:1574).

Similarly, in Argentina, Chudnovsky, et al, (1996:2) notes that the impact of trade liberalization and deregulation policies did not fully explain the high export growth rates of automotive products. Again focus is given to export promotion measures encompassed in automotive policy in Argentina. Later in this chapter the role of government intervention is emphasized, particularly in the export promotion of automobiles in an international comparative context.

[4]The 6 sub-sectors include – electrical machinery (4.5 per cent), plastic products (1.7 per cent), clothing (1.3 per cent), printing and publishing (1.4 per cent), furniture (0.7 per cent), wood and wood products (1.0 per cent). Figures in brackets represent average annual employment growth rates for 1990–1996 (Roberts, 1998:41).

What also seems to be evident in a number of automotive case studies (Brazil, Mexico, Argentina) of the impact of trade liberalization is the fact that stimulating domestic demand has proved to be necessary in order to increase domestic output in an attempt to offset rising import competition resulting from trade liberalization (Humphrey, 1998:148-149; Dijkstra, 2000:1575).

Finally, in line with theoretical expectations – trade liberalization in South Africa's manufacturing industry has been associated with short run adjustment costs (falling employment and output), enhanced export growth of the manufacturing sector, deterioration of sub-sectoral trade balances and rising labour productivity levels have been experienced.

The following section will discuss the structure of the Phase VI regime of the local content programme and considers its impact on the South African motor vehicle industry.

3.3 STRUCTURE OF THE PHASE VI PROGRAMME (1989–1994) AND ITS IMPACT ON THE MOTOR INDUSTRY

Phase VI of the local content programme was implemented on 1 March 1989 and was initially intended to continue until 1997 but was subsequently replaced by the current Motor Industry Development Programme (MIDP) which became effective on 1 September 1995. Under Phase VI, protection levels for CBUs remained at prohibitive levels (Black, 1996:12) and effectively protected the domestic industry. Imported CBUs were subject to a 100 per cent ad valorem import duty plus a 10 per cent import surcharge on passenger cars (5 per cent on commercial vehicles). Later the import surcharge was raised to 15 per cent, increasing the tariff on CBU passenger cars to 115 per cent (MITG, 1994:26).

Under Phase VI, local content requirements were continued, but now utilized a value-based scheme rather than a weight-based scheme, which had prevailed in Phases I to V. Phase VI was aimed at significantly reducing the import bill by at least fifty percent (BTI, 1989b). Saving of foreign exchange was also to be promoted by encouraging export growth and enhancing international competitiveness in the motor vehicle and component industries.

Phase VI assessed local content by subtracting net foreign exchange usage from total vehicle sales turnover. The definition of net foreign exchange usage is equal to payments in foreign currency (including imports of components and model-related tooling, royalty payments and technical assistance fees) less exports (Bell, 1990:61). This effectively meant that manufacturers could achieve their local content percentage targets by either sourcing components locally or exporting components employed in assembled vehicles. It should be noted that the definition of local content is very broad, in that it includes profit margins and overheads, which are part of sales turnover.

The local content or foreign exchange targets stipulated by Phase VI required manufacturers to achieve their set targets assessed in terms of the weighted average of all their manufactured vehicles (Boxall, 1989:33); that is, they were

not required to achieve the target percentage on every individual model but across the entire model range. In addition, an excise duty and rebate scheme linked to local content targets was applied under Phase VI (and will be discussed later in this section).

Bell reports the local content formula, given in words in the previous paragraph, as follows:

$$\text{Local content percentage} = \frac{PQ-(F-X)}{PQ}$$

(PQ) represents total domestic vehicle sales turnover, which is the product of the average wholesale price of the vehicle (P) and the number of vehicles sold domestically (Q), (F) denotes foreign currency expenditure, (X) represents exports, and (F–X) net foreign exchange usage.

The duty rates and local content targets applied during Phase VI are indicated in Table 3.1 below:

Table 3.1 Local Content Targets and Excise Duty Rates – Phase VI

Year	Initial excise duty rates[5]	Local content targets
1989	27.5 %	55.0 %
1990	28.75 %	57.5 %
1991	30.0 %	60.0 %
1992	31.25 %	62.5 %
1993	32.25 %	65.0 %
1994	33.75 %	67.5 %
1995	35.0 %	70.0 %
1996	36.25 %	72.5 %
1997	37.5 %	75.0 %

***Source*: Boxall (1989:33)**

[5] Excise duty rates were later adjusted.

The initial local content industry target was 55 per cent *by value*. The minimum local content for entry into the Phase VI programme was 45 per cent by value, of which up to 20 per cent could be made up of exports (Boxall, 1989:32). The original plan was that manufacturers would achieve a local content by value of 75 per cent by September 1997 (BTI, 1989:16). Frequent adjustments, particularly increases in excise duty rates and domestic content targets were made to the programme in an attempt to provide sufficient revenue to cover rebates paid by government to OEMs (MITG, 1994:14).

Thus, in 1994 a net excise duty of 40 per cent was levied on the vehicle wholesale price, compared to the original excise rate of 33.75 per cent for that year. An OEM that attained the maximum 75 per cent local content target (including exports) was only required to pay a 2.5 per cent non-refundable fiscal portion of the duty, while the 37.5 per cent was rebated fully. At any other local content level above the minimum of 50 per cent, a rebate of 50c in the Rand for every extra Rand of local content or exports were granted (Stewart, 1992:31). Effectively, a high local content level above 75 per cent in value terms had to be achieved if an OEM was to qualify for the full rebate.

The structure of the Phase VI policy may have contributed to falling government revenue sourced from the motor industry. Duncan (1997:32) notes that government revenue sourced from the motor industry did indeed decline. Given the new local content measure and the excise duty rebate scheme, OEMs could easily achieve their domestic content targets and effectively pay no or very low duties (this will be illustrated later in this section). This meant that the revenue earned by government might have been reduced considerably due to the rebates awarded to OEMs and that the increases in excise duty rates was an attempt by the government to offset falling revenue.

It has been argued that the Phase VI regime – provided strong incentives to export automotive products, resulted in lower *real* local content (*local content excluding export values*) and the production of smaller vehicles, contributed towards the proliferation of models and higher vehicle prices, amongst others.

The remainder of this section provides simple numerical illustrations in an attempt to explain the structure of the programme and consider some implications of the Phase VI automotive regime.

The local content targets required under Phase VI were supported by a set of incentives, which took the form of rebates of excise duties. Prior to the amendments made to the programme in 1994 (as discussed above), all assembled vehicles were subject to an excise duty, depending on the local content target achieved by value in any given year and the wholesale price of the vehicle (see table 3.1). A further 12 per cent excise duty, called the 'fiscal duty', was required for passenger cars. In terms of the rebate, manufacturers achieving their local content targets were entitled to a rebate equal to the excise duty payable excluding the fiscal duty. In addition, a fixed rebate of R3,000 for every passenger vehicle was granted. Numerical illustrations of the operation of excise duty and rebate system under the Phase VI regime will be discussed here, including some of the implications of the programme.

Suppose the wholesale price of an assembled vehicle is R20,000. Assume that domestic manufacturers achieved a local content target of 60 per cent in 1991 (see table 3.1). According to the excise rebate system, manufacturers will be required to pay an excise duty of 30 per cent of the wholesale price of the vehicle plus the fiscal duty of 12 per cent. Given that the excise duty is equal to 50 per cent of the local content target and that the rebate is equal to the excise duty payable (excluding the fiscal duty), the rebate of the excise duty is equal to 50 per cent of the local content value of the vehicle (including exports). For the purposes of this simple illustration, assume that export values are included in the local content value.

This numerical example illustrates a net excise duty payable
(Also see table 3.2):

DUTY PAYABLE = (42% x EXCISE VALUE) – FIXED REBATE – (50% x (EXCISE VALUE – IMPORTED CONTENT))

DUTY PAYABLE = R8,400 – R3,000 – (50% x R12,000) = -R600

The formula was constructed in such a way that achievement of the local content target put the manufacturer in a zero duty-paying position – provided that the fiscal duty of 12 per cent and the fixed rebate of R3,000 were removed from the formula, then:

TOTAL DUTY PAYABLE = R20,000 x 30% = R6,000

TOTAL REBATE = (R20,000 x 60%) x 50 % = R6,000

DUTY PAYABLE = TOTAL DUTY – TOTAL REBATE = 0

Bruton (1989:341) further illustrates that Phase VI of the local content scheme favoured the production and sale of smaller inexpensive passenger cars in the domestic motor industry. In other words, the value of the rebate as a proportion of the vehicle price became smaller when the wholesale price of the vehicle is raised. Thus, when the vehicle price is raised, even though the manufacturer achieves the local content target, a greater excise duty will apply.

In terms of the formula, the achievement of the local target (60 per cent) enabled the manufacturer to earn a duty rebate equal to 30 per cent of the duty of the wholesale value of the vehicle *plus a fixed rebate not scaled to the value of the vehicle*. This effectively meant that manufacturers producing cheaper cars and achieving their local content targets were entitled to receive rebates greater than their excise duties payable.

A numerical example will illustrate how a higher price is accompanied by a higher net excise duty. Assume that the wholesale price of the vehicle is raised to R40,000, but that all other conditions remain as in the previous numerical example. Then:

DUTY PAYABLE = (42% x EXCISE VALUE) – FIXED REBATE – (50% x (EXCISE VALUE – IMPORTED CONTENT))

DUTY PAYABLE = R16,800 – R3,000 – (50% x R24,000) = R1,800

Thus, with a more expensive car worth R40,000, although the OEM achieved the local content target of 60 per cent, he was liable to pay a net duty of R1,800. A larger net duty applies when the vehicle price is raised (see table 3.2).

Theoretically, Phase VI operated as a self-balancing or self-funding excise duty and rebate structure (Bruton, 1989:337; Duncan, 1997:173) (see table 3.2). Successful OEMs would essentially be subsidized by those OEMs that did not achieve their local content requirements (see below for a numerical example of excise duties when targets are not met). Also, vehicles with an excise value of R25,000 earned excise rebates. On the other hand, vehicles with an excise value exceeding R25,000 were liable to pay net excise duties (see table 3.2). This feature encouraged OEMs to meet their domestic content targets by producing a variety of models comprising of expensive and less expensive cars, such that the duty rebates earned on cheaper models may offset the excise duties payable on the more expensive models. This was in fact in contrast with the rationalization process the government had envisaged.

Table 3.2 Self-Balancing Excise Duty and Rebate Structure for a Range of Vehicles Achieving Sixty Percent Local Content by Value (Original Plan for 1991)

Wholesale Price	Excise Duty (30 %)	Fiscal Duty (12 %)	Total Excise Duty (42 %)	Fixed Rebate	Rebate of Excise Duty	Total Rebate	Net Duty
10,000	3,000	1,200	4,200	3,000	3,000	6,000	-1,800
15,000	4,500	1,800	6,300	3,000	4,500	7,500	-1, 200
20,000	6,000	2,400	8,400	3,000	6,000	9,000	-600
25,000	7,500	3,000	10,500	3,000	7,500	10,500	0
30,000	9,000	3,600	12,600	3,000	9,000	12,000	600
40,000	12,000	4,800	16,800	3,000	12,000	15,000	1,800

***Source*: Adapted from Bruton (1989:340)**

As mentioned above, OEMs failing to achieve their local content targets were required to pay higher excise duties because their rebates received were less than their excise duties payable. Suppose the wholesale vehicle price remained at R40, 000 (as in the last example). Assume the manufacturer attained only 50 per cent local content instead of the stipulated 60 per cent, that is, local content equivalent to R20,000. Then:

DUTY PAYABLE = (42% x EXCISE VALUE) – FIXED REBATE – (50% x (EXCISE VALUE – IMPORTED CONTENT))

DUTY PAYABLE = R16,800 – R3,000 – (50% x R20,000) = R3,800

An even greater net duty payable will apply (R3,800 compared with R1,800), if the local content target is not reached.

The frequent increases in the excise duty rates (mentioned but not reported in detail) have been blamed for contributing to higher vehicle prices. The rebates earned in respect of exports were effectively funded through the excise duty and rebate structure. In other words, the cost of the incentive was reflected in higher vehicle prices (MITG, 1994:13). In 1989 (at the start of the programme) OEMs paid zero net excise duties, but by 1992 the payments had increased to R307m – and were probably built into higher vehicle prices (MITG, 1994:26). It was estimated that about 4 per cent of the excise duty contributed to higher vehicle prices during Phase VI of the local content programme (Stewart, 1992:31).

Also, Phase VI was structured in such a way that none of the OEMs were unable to comply with the stipulated local content targets set under Phase VI and ultimately be forced to exit the industry (Bell, 1989:62). Government was particularly concerned with the effect of the withdrawal of any one of the assemblers would have on the employment levels in the automotive and related industries, especially since motor industry employment in South Africa is

geographically concentrated. More on automotive industry employment will be provided in section 4.6.

In theory, higher local content levels could be reached in a number of ways: by raising the wholesale price of the vehicle or by increasing exports or by utilizing less foreign currency on imported components. According to Bell (1990:62), increasing exports is in fact superior (profitable) to reducing imported components. This idea has been reflected in the rapid export growth of automotive products mainly attributable to the export incentive provisions under the Phase VI industry policy. However, as industry exports grew, excise duties payable became smaller given the achievement of local content targets and hence, inducing higher import demand, especially for high value components. In other words, because exports could count as local content, growing exports meant a higher level of local content attained, thus providing an opportunity to import more. The result implies – greater foreign exchange consumption. This is evident in table 3.8, South Africa's automotive trade deficit – net foreign exchange usage by the motor industry increased by 33 per in nominal terms over the period 1989 to 1994. More will be said in this regard in section 3.5.

Phase VI clearly provided a strong incentive to export, given that exports could account for local content value incorporated in locally assembled vehicles. Hence, automotive exports are discussed in relation to local content value. The *real* content level (*local content excluding exports*) was not allowed to be less than 25 per cent in value terms (Boxall, 1989:36). The fact that export values formed part of the local content definition meant that manufacturers' *real* local content levels were substantially reduced and their targets were reached relatively easily. In 1994 and 1995, real local content calculated by Black (1998:9) was in the region of 42 per cent. This meant that localization in the industry was relatively low and that the industry was still quite dependent on imports. Hence, the export assistance afforded to the industry might to some extent have led to the reduction of the localization of motor components. Thus, we can say that Phase VI discriminated against OEMs who did not export

sufficiently, in that they had to attain higher *real* local content levels to reach set targets.

Now we turn to look at the Phase VI regime, in particular local content regulations and export promotion in a comparative international context. South Africa's auto industry's local content requirements are compared to those of other low-volume automobile producing industries in table 3.3 below:

Table 3.3 Local Content Requirements – An International Comparison

Country	Size of Passenger Market (in units,1993)	Local Content Requirements
South Africa	195,032	Value-based minimum local content of 50 per cent up to maximum of 75 per cent to qualify for a 37.5 per cent rebate.
Australia	414,425	Carmakers are assessed in terms of a 35 per cent import duty on imported components exceeding 15 per cent of the vehicle content by value (85 per cent).
Mexico	399,263	Pre-NAFTA local content requirement, 36 per cent.
Malaysia	128,318	Under the NCPs, 70 per cent local content (Proton), 30-35 per cent for the Perodua and 20 per cent of all other cars.
India	160,453	95 per cent local content for passenger cars and 85 per cent for light commercial vehicles. No local content regulations apply to new investments.
South Korea	964,967	No local content regulations apply.
Other	51,359 427,861 30,651 334,994	Philippines 40 per cent local content for passenger cars. Turkey (up to 90 per cent depending on vehicle model). Uruguay applies 15 per cent based on a certain formula. Argentina applies no local content regulations.

***Source*: Compiled from Abrencia (2000), DOC (1995), TIDCO (2000), Tyndall (2000)**

As mentioned in section 2.1, South Africa's local content requirements were lower than those of other low-volume automobile producing countries in the 1970s. In the 1990s, under Phase VI, South Africa was still maintaining lower content requirements when compared to Australia, India and Turkey. From the table above (see table 3.3), South Africa is more comparable to Malaysia and India in terms of size of their domestic market. When one considers the size of the domestic market in relation to local content requirements, countries like Australia and Turkey have very high domestic content requirements with larger

markets. Argentina, South Korea (the most successful), Mexico and Brazil have no or very low content regulations given the size of their domestic markets. However, their automotive industries were initially developed under very high domestic content requirements. Economies with smaller domestic markets, like Uruguay and the Philippines, apply lower domestic content requirements. It is plausible to suggest that South Africa should have been more stringent in applying higher domestic content requirements in its early years like Brazil, South Korea, Australia, etc. It is important to note that South Africa produced a greater quantity of passenger vehicles in the 1960s than all of the mentioned countries. Because local content requirements are GATT non-compliant, the MIDP has subsequently discontinued domestic content requirements since September 1995. This trend is occurring worldwide as countries are becoming more GATT compliant.

This section of the study will now briefly outline the automotive export performance of a few low-volume automobile producing countries. International studies show that in a number of developing countries foreign exchange crises prompted governments to revise their motor industry programmes in order to earn foreign exchange by introducing export assistance policies to compensate for importing kits (SKDs and CKDs). Thus, strong government support has been noted to be the main reason for the rapid export growth and development of automotive industries in countries like Brazil, India, Malaysia, and others. For example, export policies in the form of *compensatory export requirements* allowed OEMs assembling CKD or SKD sets for the export market to earn sufficient foreign exchange to compensate for foreign exchange utilized in importing the sets.

Several authors maintain that the rapid export success experienced by the newly industrialized economies' (NICs) automotive industries was primarily due to the active involvement of their respective governments in promoting exports (Edwards 1993, Jenkins 1995, Roberts 1998, Rodrik 1995). A study by Jenkins, tracing the development of automobile industries in the NICs (South Korea, Mexico, Brazil and Taiwan) finds that active government intervention, in addition

to outward-orientation policies and high protection, has indeed been important determinants of their export success. In 1975, Brazil exported only 73,101 units of motor vehicles, Mexico 2,938 units, and South Korea only 31 units. By 1988, Brazil's exports increased substantially to 320,310 units, Mexico's to 173,147 and South Korea's to an outstanding 576,134 units. Taiwan was the least successful. State intervention in the NICs included – special tax incentives, production quota's, restriction of foreign ownership, and the ability of government to limit the number of vehicle producers (Jenkins, 1995:627-642).

In Malaysia, state-led initiative and support played an important role in developing the automotive industry with the introduction of two national car projects (NCPs), the Proton (1983) and the Perodua (1993). By 1988, the Proton had attained a 73 per cent market share domestically and 182,000 units were exported of which 64 per cent went to the United Kingdom (UK) (Tyndall, 2000:2). Government provided technical, financial and preferential treatment measures (import duties and sales tax) and special programmes aimed at developing entrepreneurial skills, especially with respect to the two national car programmes, the Proton and the Perodua. Also, government assisted in increasing domestic sales of these national cars by providing low interest loans to civil employees (Tyndall, 2000:2).

State intervention and regulation in the Indian automotive industry promoted the "indigenization" (localization) of the industry by also introducing a national car concept, the Maruti Udyog, which constituted over 70 per cent of the car market in the 1980s (Humphrey, 1998:131-133). In 1996/1997 37,161 units of CBUs were exported, mainly the Maruti, which is expected to increase significantly in the future (Humprey, 1998:157). Government intervention took the form of restricting foreign equity, imposing high local content and quantitative restrictions, local production and export volume target agreements – as part of government's broader policy of national development (Humphrey, 1998:120-157).

Also, in Australia, government assistance programmes (duty concessions and export facilitation, among others), especially regarding exports, increased CBU exports (passenger cars) from 3,000 units in 1985 to over 20,000 units in just seven years (by 1996/1997) (Sidorenko and Sarfudin, 1998:3). Finally, in Argentina, automotive exports rose from 1,100 units in 1990 to 40,000 in 1994 and 52,000 in 1995, and was largely attributable to proactive government and automotive policies based on import quota's and export targets established at national and MERCOSUR levels (Chudnovsky, et al, 1996:2-3).

South Africa's CBU exports were still relatively low in 1997 – 10,458 units of passenger cars and 8,000 units of light commercial vehicles were exported (DTI, 1999:4). In the South African motor industry, presently the IEC scheme, SVI and DFA represent forms of government support measures (this will be discussed in detail in chapter 4), which have certainly contributed to the exportation of cars.

Note that emphasis here has been placed on exported CBUs and not the performance of component exports (A comparative international summary of component export growth rates will be provided in section 5.3)

It is interesting to note that the countries producing national vehicles with high local content are exporting a large proportion of these vehicles. The introduction and success of these national car projects certainly provides evidence in support of the view, that strong state support and action are required. Focus in the next section shifts to the performance of automotive exports, in particular automotive components and light vehicles in South Africa under the Phase VI regime of the local content programme.

3.4 PERFORMANCE OF MOTOR INDUSTRY EXPORTS UNDER PHASE VI OF THE LOCAL CONTENT PROGRAMME

Harmonized System (HS 8-digit)[6] tariff classification data for total motor industry exports, which include motor components, light vehicles[7] and medium/heavy vehicles, were used to determine export values under the Phase VI programme (1989 to 1994)[8]. The following chapter will tabulate and then compare export performance of the motor sector under the MIDP (1995 to 1998) with that of Phase VI; here we focus on the Phase VI performance.

Table 3.4 shows current Rand values of exports of motor components, light vehicles and medium/heavy vehicles for 1989–1994, both separately and in aggregate. Table 3.5 presents the constant 1995 Rand values of motor industry exports for the same period. Both tables show (in addition to the annual levels) compound annual average growth rates over the period for the individual and aggregate variables listed. Finally, table 3.6 indicates the export values measured in constant United States (US) dollars to show the real value of the foreign exchange earned by the industry, and for purposes of international comparison.

It was found that total automotive exports grew significantly under Phase VI, in both current (40 per cent p.a.) and constant (28 per cent p.a.) Rand terms. Also, in constant US dollar terms, they grew substantially at 30 per cent p.a. over the period 1989–1994. Clearly these real growth rates are very substantial, though of course exports were coming off a low base.

[6] HS 8-digit tariff classification data was compiled from tariff subheadings for eligible exports, supplied by the DTI. Where 8-digit code data was not available, relevant HS 6-digit code data was used.
[7] Light vehicles include both passenger vehicles and light commercial vehicles.

Automotive components account for most of the industry's exports. They were 73 per cent of total automotive exports in 1994 and certain auto parts like leather seat covers (22 per cent), catalytic converters (9 per cent), automotive tooling (9 per cent), silencers/exhaust pipes (9 per cent) and tyres (6.6 per cent) each constituted a substantial share of total motor industry exports. These operations grew dramatically in recent years, as component producers qualified for export credits in terms of the export facilitation scheme. The export credits prompted OEMs and component producers to export more and this contributed significantly to the growth of automotive exports. Growth of the domestic motor industry is an important determinant of the demand for motor components. Domestically, domestic demand for autos has been stagnant in recent years (see table 5.4). Hence, the sector has become more reliant on exporting. The demand for automotive components for the aftermarket (domestically and internationally) has also provided important stimulus for increased production and exporting.

Over the period 1989–1994 (which we are now reviewing), real exports of major components such as catalytic converters grew annually at a rate of 124 per cent, stitched leather covers at 232 per cent, silencer/exhaust pipes at 103 per cent and batteries at 87 per cent. At the beginning of the Phase VI programme, some OEMs (Toyota, Nissan, Delta and Samcor) bought into local component operations to supply them with motor parts and export credits. Mercedes Benz initiated the production and exporting of catalytic converters and also produced auto leather seats in its plant in former Bophuthatswana, and VW set up leather seating operations with the assistance of foreign partners (Duncan, 1997:173). Other major export investments included – engine-manufacturing plants by Toyota (worth R80m) in 1991 and by BMW (R40m) in 1992 (Duncan, 1997:175).

[8] Note that Phase VI started in March 1989 and the MIDP in September 1995. When referring to the performance of Phase VI – I have used the period 1989 to 1994. The reason for this is that OEMS and component producers were already geared towards the change in policy (MIDP) in early 1995.

Table 3.4 Automotive Industry Exports Current Rands, 1989–1994

COMPONENTS	1989	1990	1991	1992	1993	1994	GROWTH RATES 1989–1994
Air Conditioners	790,542	802,320	2,380,605	2,093,019	1,828,250	4,184,849	39.56
Alarm systems	1,000,437	1,062,492	1,873,448	4,264,192	5,198,084	10,805,250	60.95
Automotive tooling	99,694,600	74,185,362	60,609,168	107,001,250	101,973,021	188,124,259	13.54
Axles (driving/non-driving)	1,311,090	2,484,731	1,945,092	2,819,627	2,694,723	1,039,359	(4.54)
Batteries	901,128	1,343,934	546,914	8,788,314	15,157,594	32,133,052	104.38
Body parts/panels	4,698,642	12,786,783	21,540,298	30,347,888	47,059,379	48,579,001	59.55
Brake parts	3,551,546	2,821,562	2,708,095	3,042,058	7,112,357	11,784,006	27.11
Car radios	69,970	1,237,114	4,822,228	799,626	1,417,652	2,040,907	96.33
Catalytic converters	2,245,631	688,040	9,333,296	104,124,341	187,190,874	197,688,662	144.87
Clutches & shaft couplings	2,293,531	1,605,748	2,844,576	2,259,292	3,990,569	3,014,575	5.62
Engines	4,460,108	5,906,756	6,494,671	25,845,588	12,185,357	12,451,383	22.79
Engine parts	37,969,353	51,007,625	50,519,941	51,037,354	68,145,487	67,406,742	12.16
Filters	-	-	-	127,467	41,990	19,296	(61.09)
Gaskets	1,364,746	902,384	1,269,837	3,312,759	2,382,496	3,173,770	18.39
Gauges/instruments/parts	7,844,469	8,506,306	11,147,789	11,176,880	19,795,736	24,482,102	25.56
Gear boxes	6,079	44,667	273,250	104,591	85,773	27,876	35.61
Glass	65,304,565	67,218,782	51,462,170	51,076,312	60,117,087	59,277,837	(1.92)
Ignition/starting equipment	5,864,808	5,733,139	4,810,236	6,793,979	5,433,603	6,149,781	0.95
Jacks	1,971,586	2,833,825	2,926,929	4,646,144	6,491,976	8,192,860	32.96
Lighting/signalling/wiping equip	2,845,558	4,612,918	6,449,232	7,609,244	6,072,767	6,710,735	18.72
Radiators	-	-	-	-	-	-	-
Road wheels/parts	12,643,936	16,512,743	25,487,479	38,017,289	48,684,388	77,199,769	43.60
Seats	23,889	11,870	3,860	1,181,575	5,223,285	5,257,267	194.11
Stitched leather covers	738,298	1,027,603	1,185,170	5,783,167	13,328,708	463,589,531	262.73
Seatbelts	210,758	369,453	472,174	680,720	1,986,936	70,938	(19.57)
Shock absorbers	7,945,732	7,165,461	9,122,958	16,709,332	18,828,646	18,354,674	18.23
Silencers/exhaust pipes	3,375,564	4,445,590	19,214,645	43,243,660	63,415,755	180,862,733	121.72
Springs	7,488,179	6,243,647	7,189,711	8,142,625	7,891,394	10,635,838	7.27
Steering wheels/columns/boxes	565,231	552,416	647,568	880,457	1,483,754	1,557,589	22.47
Transmission shafts/cranks	4,161,291	4,916,293	9,537,015	18,798,321	8,258,020	17,900,865	33.88
Tyres	37,828,792	39,825,477	69,091,320	84,141,385	116,232,495	137,693,066	29.48
Wiring harnesses	1,373,657	2,131,761	2,739,460	4,759,153	12,522,663	15,571,136	62.51
Other components	139,707,244	205,919,231	345,051,177	605,723,002	738,852,615	476,682,321	27.82
TOTAL COMPONENTS	**460,250,960**	**534,906,033**	**733,700,312**	**1,255,330,611**	**1,591,083,434**	**2,092,662,029**	**35.38**
LIGHT VEHICLES	**12,877,626**	**27,658,902**	**31,101,367**	**344,621,845**	**464,337,147**	**476,649,314**	**105.91**
MED/HEAVY VEHICLES	**62,504,694**	**128,790,991**	**131,763,743**	**172,756,176**	**195,456,899**	**299,528,412**	**36.81**
TOTAL PHASE VI EXPORTS	**535,633,280**	**691,355,926**	**896,565,422**	**1,772,708,632**	**2,250,877,480**	**2,868,839,755**	**39.88**

***Source*: Compiled from HS 8-digit level data, TIPS (1999)**

Note: To compare the export performance of the motor industry under Phase VI with that of the MIDP, export values from 1989–1994 (Phase VI) need to be consistent with export values for period 1995-1998 (MIDP). Thus, HS 8-digit tariff classification data was compiled with the assistance of the Data Unit Manager – Arjen Van Zwieten (TIPS) and Norman Lomprecht (DTI). Tariff sub-headings were supplied by the DTI in order to compile relevant export values for the period 1989–1999.

Table 3.5 Automotive Industry Exports Constant 1995 Rands, 1989–1994

COMPONENTS	1989	1990	1991	1992	1993	1994	GROWTH RATES 1989–1994
Air Conditioners	1,353,668	1,226,789	3,265,576	2,652,749	2,173,900	4,598,735	**27.71**
Alarm systems	1,713,077	1,624,606	2,569,888	5,404,553	6,180,837	11,873,901	**47.29**
Automotive tooling	170,709,932	113,433,275	83,140,148	135,616,286	121,252,106	206,729,955	**3.90**
Axles (driving/non-driving)	2,245,017	3,799,283	2,668,165	3,573,672	3,204,189	1,142,153	**(12.64)**
Batteries	1,543,027	2,054,945	750,225	11,138,548	18,023,298	35,311,046	**87.03**
Body parts/panels	8,045,620	19,551,656	29,547,734	38,463,736	55,956,455	53,383,518	**46.01**
Brake parts	6,081,414	4,314,315	3,714,808	3,855,587	8,457,024	12,949,457	**16.32**
Car radios	119,812	1,891,612	6,614,853	1,013,468	1,685,674	2,242,755	**79.66**
Catalytic converters	3,845,259	1,052,049	12,802,875	131,970,014	222,581,301	217,240,288	**124.08**
Clutches & shaft couplings	3,927,279	2,455,272	3,902,025	2,863,488	4,745,029	3,312,720	**(3.35)**
Engines	7,637,171	9,031,737	8,909,014	32,757,399	14,489,128	13,682,838	**12.37**
Engine parts	65,016,015	77,993,310	69,300,331	64,686,127	81,029,117	74,073,343	**2.64**
Filters[b]	-	-	-	161,555	49,929	21,204	**(63.77)**
Gaskets	2,336,894	1,379,792	1,741,889	4,198,681	2,832,932	3,487,659	**8.34**
Gauges/instruments/parts	13,432,310	13,006,584	15,291,892	14,165,881	23,538,331	26,903,409	**14.90**
Gear boxes	10,409	68,298	374,829	132,561	101,989	30,633	**24.09**
Glass	111,822,885	102,781,012	70,592,826	64,735,503	71,482,862	65,140,480	**(10.24)**
Ignition/starting equipment	10,042,479	8,766,268	6,598,403	8,610,873	6,460,883	6,758,001	**(7.62)**
Jacks	3,376,003	4,333,066	4,014,992	5,888,649	7,719,353	9,003,143	**21.67**
Lighting/signalling/wiping equip	4,872,531	7,053,391	8,846,683	9,644,162	7,220,888	7,374,434	**8.64**
Radiators[c]	-	-	-	-	-	-	**-**
Road wheels/parts	21,650,575	25,248,843	34,962,248	48,184,143	57,888,690	84,834,911	**31.41**
Seats	40,906	18,150	5,295	1,497,560	6,210,803	5,777,216	**169.15**
Stitched leather covers	1,264,209	1,571,258	1,625,748	7,329,743	15,848,642	509,439,045	**231.94**
Seatbelts	360,887	564,913	647,701	862,763	2,362,587	77,954	**(26.40)**
Shock absorbers	13,605,705	10,956,362	12,514,346	21,177,861	22,388,402	20,169,971	**8.19**
Silencers/exhaust pipes	5,780,075	6,797,538	26,357,538	54,808,188	75,405,178	198,750,256	**102.90**
Springs	12,822,224	9,546,861	9,862,429	10,320,184	9,383,346	11,687,734	**(1.84)**
Steering wheels/columns/boxes	967,861	844,673	888,296	1,115,915	1,764,273	1,711,636	**12.08**
Transmission shafts/cranks	7,125,498	7,517,268	13,082,325	23,825,502	9,819,287	19,671,280	**22.52**
Tyres	64,775,329	60,895,225	94,775,473	106,643,074	138,207,485	151,311,062	**18.49**
Wiring harnesses	2,352,152	3,259,573	3,757,833	6,031,880	14,890,206	17,111,138	**48.72**
Other components	239,224,733	314,861,209	473,321,230	767,709,762	878,540,565	523,826,726	**16.97**
TOTAL COMPONENTS	**788,100,959**	**817,899,133**	**1,006,447,616**	**1,591,040,065**	**1,891,894,690**	**2,299,628,603**	**23.88**
LIGHT VEHICLES	**22,050,729**	**42,291,899**	**42,663,055**	**436,783,074**	**552,125,026**	**523,790,455**	**88.43**
MED/HEAVY VEHICLES	**107,028,586**	**196,928,121**	**180,745,875**	**218,955,863**	**232,410,106**	**329,152,101**	**25.19**
TOTAL PHASE VI EXPORTS	**917,180,274**	**1,057,119,153**	**1,229,856,546**	**2,246,779,001**	**2,676,429,822**	**3,152,571,159**	**28.01**

***Source*: Calculated from HS 8-digit level data, TIPS (1999)**

Note: [a] Figures deflated by SA PPI, 1995 base year (SSA, 2000).

[b] Growth rates for filters calculated for years 1992 to 1994 in tables 3.4, 3.5, and 3.6.

[c] Figures for radiators not included in tables 3.4, 3.5 and 3.6.

Table 3.6 Automotive Industry Exports Constant 1995 US Dollars, 1989–1994

COMPONENTS	1989	1990	1991	1992	1993	1994	GROWTH RATE 1989–1994
Air Conditioners	335,371	332,449	923,686	781,851	586,610	1,221,207	29.49
Alarm systems	424,415	440,254	726,907	1,592,897	1,667,850	3,153,147	49.34
Automotive tooling	42,293,402	30,739,426	23,516,645	39,970,508	32,718,928	54,897,699	5.36
Axles (driving/non-driving)	556,203	1,029,572	754,705	1,053,277	864,625	303,302	-11.42
Batteries	382,285	556,872	212,205	3,282,890	4,863,445	9,376,944	89.64
Body parts/panels	1,993,303	5,298,328	8,357,738	11,336,508	15,099,410	14,176,138	48.05
Brake parts	1,506,671	1,169,142	1,050,754	1,136,366	2,282,061	3,438,763	17.94
Car radios	29,683	512,610	1,871,047	298,702	454,866	595,570	82.17
Catalytic converters	952,663	285,096	3,621,363	38,895,834	60,061,815	57,688,747	127.21
Clutches & shaft couplings	972,984	665,357	1,103,709	843,963	1,280,409	879,702	-2.00
Engines	1,892,110	2,447,522	2,519,963	9,654,666	3,909,777	3,633,515	13.94
Engine parts	16,107,724	21,135,505	19,601,977	19,065,095	21,865,070	19,670,377	4.08
Filters	-	-	-	47,616	13,473	5,631	-65.61
Gaskets	578,966	373,912	492,703	1,237,487	764,444	926,157	9.85
Gauges/instruments/parts	3,327,856	3,524,671	4,325,395	4,175,143	6,351,634	7,144,273	16.51
Gear boxes	2,579	18,508	106,022	39,070	27,521	8,135	25.83
Glass	27,704,131	27,852,756	19,967,567	19,079,648	19,289,089	17,298,231	-8.99
Ignition/starting equipment	2,488,025	2,375,582	1,866,394	2,537,903	1,743,419	1,794,605	-6.33
Jacks	836,405	1,174,223	1,135,662	1,735,575	2,083,007	2,390,809	23.37
Lighting/signalling/wiping equip	1,207,170	1,911,407	2,502,333	2,842,447	1,948,500	1,958,301	10.16
Radiators	-	-	-	-	-	-	-
Road wheels/parts	5,363,932	6,842,216	9,889,263	14,201,426	15,620,808	22,528,140	33.24
Seats	10,134	4,918	1,498	441,379	1,675,936	1,534,155	172.91
Stitched leather covers	313,208	425,797	459,852	2,160,312	4,276,632	135,282,918	236.58
Seatbelts	89,410	153,086	183,206	254,284	637,526	20,701	-25.37
Shock absorbers	3,370,815	2,969,078	3,539,751	6,241,801	6,041,334	5,356,191	9.70
Silencers/exhaust pipes	1,432,014	1,842,073	7,455,374	16,153,746	20,347,495	52,778,669	105.73
Springs	3,176,707	2,587,116	2,789,642	3,041,692	2,532,022	3,103,709	-0.46
Steering wheels/columns/boxes	239,788	228,899	251,259	328,896	476,075	454,530	13.64
Transmission shafts/cranks	1,765,343	2,037,114	3,700,407	7,022,146	2,649,657	5,223,762	24.23
Tyres	16,048,094	16,502,073	26,807,761	31,431,165	37,294,204	40,181,062	20.15
Wiring harnesses	582,746	883,316	1,062,924	1,777,790	4,018,005	4,543,909	50.80
Other components	59,267,951	85,324,635	133,881,498	226,268,909	237,067,267	139,103,605	18.61
TOTAL COMPONENTS	**195,252,090**	**221,643,513**	**284,679,210**	**468,930,992**	**510,512,913**	**610,672,601**	**25.62**
LIGHT VEHICLES	**5,463,070**	**11,460,735**	**12,067,478**	**128,734,106**	**148,986,599**	**139,093,973**	**91.06**
MED/HEAVY VEHICLES	**26,516,343**	**53,365,799**	**51,124,959**	**64,533,378**	**62,714,040**	**87,407,231**	**26.94**
TOTAL PHASE VI EXPORTS	**227,231,503**	**286,470,647**	**347,871,647**	**662,198,476**	**722,213,553**	**837,173,806**	**29.80**

***Source*: Calculated from HS-8 digit level data, TIPS (1999)**

Note: Figures deflated by US PPI, 1995 base year and exchange rates (SARB 2000, SSA 2000).

Also achieving a high growth rate was the export of light vehicles, which grew at an annual average rate of 88 per cent in real terms. The high growth rate achieved in this respect was due to the exporting contracts of Samcor (1991), which exported CBUs to the UK, VW (1992) which produced and exported the Golf 4 to the Republic of China, and BMW (1994) which produced their 3-series right-hand drives for the export market (Duncan, 1997:174). This trend of export contracts is expected to continue as OEMs collaborate and increasingly become part of international corporate strategies of appropriate TNCs, and hence fuel export alliances. On the local manufacturing componentry side, a similar trend is likely to happen. A further discussion on the performance of motor industry exports will be provided in next chapter (section 4.7).

A further question to consider is – how the export performance of the motor industry during Phase VI compares with that of other manufacturing sub-sectors? If a comparison is made of the average annual growth rates of real exports for all 25 SIC manufacturing sub-sectors for the period immediately before Phase VI, the motor industry was in 13th position (10.21 per cent p.a.) between 1985 and 1988 (not shown here). Between 1989 and 1993 (see table 3.7), four years into Phase VI, the motor vehicle sub-sector grew at around 25 per cent p.a. and accelerated up to 2nd position.

Table 3.7 Average Annual Real Export Growth Rates: SIC Manufacturing Sub-Sectors 1989–1993 (Ranked)

Rank	SIC Sector	Growth Rate %
1st	Pottery, China and Earthenware	31.72
2nd	Motor Vehicles	24.89
3rd	Other Transport Equipment	23.05
4th	Paper and Paper Products	12.4
5th	Plastic Products	8.88
6th	Electrical Machinery	7.04
7th	Non-ferrous Metal Basic Industries	4.83
8th	Leather Products	3.30
9th	Machinery and Equipment	3.15
10th	Clothing	3.01
11th	Other manufacturing	2.91
12th	Furniture	2.78
13th	Metal Products	2.30
14th	Beverages	1.79
15th	Other Non-metallic Mineral Products	1.14
16th	Rubber Products	0.13
17th	Iron and Steel Basic Industries	-0.75
18th	Food	-1.27
19th	Wood and Wood Products	-3.06
20th	Chemicals	-3.09
21st	Footwear	-3.21
22nd	Textiles	-4.25
23rd	Glass Products	-7.24
24th	Tobacco Products	-11.96
25th	Printing and Publication	-14.00

***Source*: Calculated from IDC (1995)**

As indicated in table 3.7 automotive industry's real exports grew faster than those of all sub-sectors – except for Pottery, China and Earthenware (32 per cent p.a.). During the same time period (1989–1993), manufacturing exports as a whole grew at an annual average growth rate of about 2 per cent, far more slowly than exports of motor vehicles and components. This shows that the aggregate export growth rate experienced by the manufacturing sector as whole can be misleading and not representative of the export performance of individual sub-sectors within manufacturing, such as the motor industry.

It is interesting to note that the four top contributors in 1993, in terms of the proportion of sub-sectoral exports to total manufacturing exports (value) were iron and steel, chemicals, food and non-ferrous metal products. They roughly maintained their ranking since the mid-1970s. In contrast, however, the motor industry's export share in total manufacturing exports increased from 3.3 per cent in 1989 (ranked 10^{th}) to 7.4 per cent in 1993 (ranked 5^{th}). The fact that motor vehicles increased their share remarkably in total manufacturing exports from 1989 to 1993 follows from the above-average rapid growth in motor industry exports. Both rapid export growth and increased share of exports are probably attributable to industry-specific factors encompassed in motor industry policy at the time – Phase VI of the local content programme.

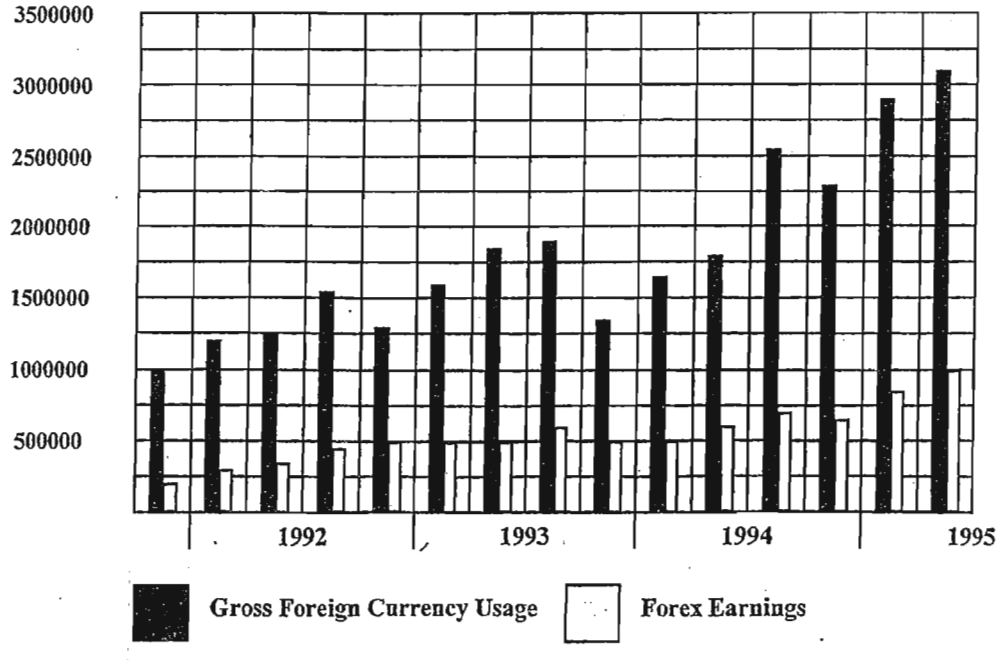
The next section now shifts focus to the trade balance of the South African motor industry. The rapid export expansion of automotive exports was accompanied by rising automotive imports at an even faster rate, and this resulted in rising net foreign exchange usage by the industry in nominal terms.

3.5 SOUTH AFRICA'S AUTOMOTIVE TRADE BALANCE

The Board of Trade and Industry (BTI) maintained that the need for enhanced exports was crucial in alleviating the effects of volatile exchange rate movements since the automotive industry is very susceptible to exchange rate fluctuations (BTI, 1988; BTI, 1989b). The continued weakening of the domestic currency stimulated exports, but imports remained expensive in Rand terms. Importantly, as the industry develops and grows over time the motor trade deficit might worsen in the absence of corrective policy and possibly contribute to the weakening of the country's balance of payments.

As mentioned elsewhere, Phase VI of the local content programme was introduced to reduce foreign exchange usage in the motor industry by approximately 50 per cent. Figure 3.2 below shows quarterly figures representing gross foreign exchange usage and earnings by the motor industry for the period 1991 (last quarter) to 1995 (second quarter). From the figure it can be observed that gross foreign exchange usage far outweighs foreign exchange earnings in nominal terms.

Figure 3.2 Foreign exchange Earnings and Usage 1991–1995 (R000s)



***Source*: NAAMSA**

Note: Values in nominal Rands.

Table 3.8 South Africa's Automotive Industry's Trade Balance 1988– 1998

Year	Imports (Rb)	Exports (Rb)	Forex Bal (Rb)	% Change (Nominal)	% Change (Real[a])	Imp/Exp %
1988	6.2	0.3	5.9	-	-	2,067
1989	7.4	0.5	6.9	17	2	1,480
1990	6.3	0.8	5.5	-20	-29	788
1991	6.3	1.1	5.2	-6	-15	573
1992	6.6	1.5	5.1	-2	-9	440
1993	9.1	2.3	6.8	33	25	396
1994	12.0	2.8	9.2	35	25	429 (438[b])
1995	16.4	4.2	12.2	33	21	390
1996	19.2	5.1	14.1	16	8	376
1997	17.2	6.6	10.6	-25	-30	261
1998	19.9	10.1	9.8	-8	-11	197

***Source*: DTI (1998:13), DTI (1999:12)**

Note: [a] Values deflated by SA PPI, 1995 Rands (SSA, 2000).

[b] Calculated in nominal US dollars (US exchange rate from SARB, 2000).

In the table 3.8, column 4, it can be noted that Phase VI was not in fact particularly successful in reducing foreign exchange consumption in the motor sector in nominal Rand terms. During the Phase VI period, the largest decline (20 per cent) in net foreign exchange usage occurred almost immediately, after its introduction in 1990. The domestic recession, which started in late 1989, explains the smaller reductions in 1991 (5.5 per cent) and 1992 (2.0 per cent). Thereafter, net foreign exchange consumption increased until Phase VI was terminated in 1995. As exports grew, so did imports. Reliance on imported tooling and designs, and technologically sophisticated plant machinery and equipment have also contributed to increased foreign exchange usage by the motor industry.

However, in real terms (see table 3.8, column 5, the picture improves slightly – initially net foreign exchange usage declined by 29 per cent in 1990, fell for three years, and increased again in 1993 and 1994 by 25 per cent. Over the Phase VI period (1989–1994), net foreign exchange consumption increased by 14 per cent in real terms.

Taking into account the value of growing motor industry exports (*more explicitly*) improves the picture. Prior to Phase VI, in 1988, the import to export ratio (per cent), which will allow us to illustrate the rising proportion of exports earnings to that of import expenditure, was strikingly high (2, 067 per cent)[14]. The situation altered: by the end of the programme in 1994/1995, the percentage had drastically fallen to just over 400 per cent[15]. There is an interesting comparison with ASEAN automotive member countries. Their automotive import to export ratios for 1997 were: Thailand 171 per cent, Malaysia 286 per cent, Indonesia 486 per cent, and Philippines 255 per cent[16].

South Africa's automotive import to export trade percentage is higher, except for the case of Indonesia. However, the ratio has improved significantly since the commencement of Phase VI. International experience indicates that developing economies are normally faced with serious automotive trade problems and the situation is normally worsened during economic crises (East Asian financial crisis of October 1997) because of their import dependence (propensity to import). This often leads to excessive foreign exchange usage, which evidently might result in balance of payments problems.

Theoretically, an additional motor vehicle produced in a small country with a domestic content level of 50 per cent and sold in the domestic market would effectively deteriorate the motor trade balance. However, if an additional car comprising of 50 per cent local content can be exported the trade balance would be restored. In other words, increased exports are (at the very least) a real alternative to fewer imports of vehicles and components as a way of

[14] Represents nominal Rand terms.
[15] 438 per cent in nominal US dollar terms (see table 3.8)
[16] From United Nations Data, 1999 in DOC (1999). Calculated in $US billions (nominal values).

significantly improving a country's motor trade balance. Probably the best route for developing economies like South Africa is to strive to become net exporters of motor industry products. This will ease the motor trade balance and ultimately relieve the country's balance of payments constraint.

To examine the impact of the automotive trade deficit on the country's current account of the balance of payments is beyond the scope of this study. However, future research in this area is needed to determine the extent of the industry's contribution to the country's balance of payments in relation to other manufacturing sectors. Also in need of investigation is whether the South African auto industry can indeed improve its trade balance in the future.

3.6 CONCLUSION

The unambiguous and surprising fact is that total automotive exports of the motor industry grew at 28 per cent p.a. (in real terms) over the period of Phase VI. In searching for an explanation of this phenomenon we can consider:

I) the economy-wide impact of trade liberalization measures, which are claimed to have reallocative effects on the economy as a whole;

II) other economy-wide influences such as the macroeconomic situation and declines in the real exchange rate;

III) the incentive to use export incentives as a vent-for-surplus during the recession years, in particular 1991–1993;

IV) the industry-specific policy changes brought about by Phase VI, and in particular the introduction of excise rebates in return for automotive exports.

Given the performance of the motor industry compared to most other manufacturing industries (28 per cent versus 2 per cent average) it seems clear that the economy-wide explanation (that is, (I), (II) and (III) above) are less probable than the industry-specific export focused explanation. It may be that a still fuller explanation will need to incorporate reference to the international strategies of major motor corporations – choosing to source specific components or types of vehicles in one country rather than another. However the introduction of such information will not remove the significance of the policy changes but enrich our understanding of how such changes impact on the real world.

During the course of Phase VI, a Motor Industry Task Group was appointed in 1992 to investigate the government's industrial policy and future development of the motor vehicle and component industry in South Africa. The switch from an excise duty dispensation to a tariff or customs duty regime was adopted under the Motor Industry Development Programme (MIDP) in 1995.

The question that now arises is how the sector's performance under Phase VI compares with its performance under this latest motor industry programme, the MIDP, which came into effect in September 1995. As South Africa and other economies with low-volume producing motor industries commit further to WTO obligations by reducing tariffs and export subsidies, what will the likely effects be on the their industries' production and employment levels and on their trade balances? We turn to the MIDP and some of these questions in the next chapter.

CHAPTER 4

THE MOTOR INDUSTRY DEVELOPMENT PROGRAMME (MIDP)

4.1 INTRODUCTION

The South African automotive industry is presently operating under the MIDP, which became effective in September 1995, following recommendations made by the Motor Industry Task Group (MITG) (1992–1994), in accordance with WTO and GATT obligations. The MITG undertook the task of investigating the domestic auto industry within the context of an ever-changing global economic environment and increased import liberalization. The MIDP was intended to achieve a number of objectives, which included enhancing international competitiveness, attracting foreign investment and rationalizing the automotive industry. In July 1999, the Mid-Term Review of the MIDP recommended that certain amendments be made to the programme and that it be extended beyond 2002 to 2007. This will be discussed in section 4.4.

The domestic motor industry has been at the forefront of trade reform in recent years. According to international standards, the domestic auto market is small[1] and internationally uncompetitive (MITG, 1994). The challenges posed by rapid international developments in the global auto industry will have far-reaching consequences for the domestic automotive sector in the foreseeable future (this will be discussed further in chapter 5). Despite substantial growth rates achieved in automotive exports, the industry remains a net importer of vehicles and parts, thus impacting negatively on the country's balance of payments in nominal terms. It is universally recognized that it is necessary for developing economies to significantly increase their net exports given the limited sizes of their domestic markets and their intensive dependence on imported parts.

[1] However, South Africa compares relatively favourably to other low volume automobile producers (see table 5.2, page 155).

The MIDP reflects an increasing gearing of policy towards expanding the export possibilities of OEMs and component producers following from Phase VI of the local content programme. The MIDP represents an extension of Phase VI in terms of the export facilitation scheme. On the other hand, it can be distinguished from Phase VI, in that excise duties were replaced by import duties and no minimum local content regulations apply. In addition, the programme imposed a gradual reduction in tariff rates for passenger cars and motor components (see table 4.1, planned tariff reduction schedule). All these features reflect the reduced protection afforded to the industry. Some authors estimate the effective rate of protection for the assembly industry to be over 400 per cent under Phase VI.[2] The motor industry experienced an average fall in tariffs of 32 per cent between 1994 and 1996 – the largest fall within the manufacturing sector (Roberts, 1998:42). Despite the lowering of import tariffs, protection of the local motor industry still remains high by world standards.[3]

This chapter will provide a review of the MIDP (section 4.2 and 4.3). It then outlines the proposed amendments made to the MIDP as a result of the recent Mid-Term Review (1999) in section 4.4. Section 4.5 provides a theoretical analysis of motor industry policy – (1) a protective automotive programme and (2) a tariffs-only automotive programme. The tariffs-only automotive programme may represent a policy option for South Africa (in the longer term), as trade liberalization and globalization progresses, and government support measures fall.

Section 4.6 considers what likely effects the current version of the MIDP might have on the South African motor vehicle industry. Furthermore, this section compares the MIDP with that of other automotive industry programmes (Philippines, India, Malaysia, and others) and in particular considers what the likely effects might be in respect of exports and imports, production, employment and foreign exchange.

[2] Brazil's estimated effective protection is in excess of 250 per cent (WTO, 1996).
[3] BTT (1999:52)

Special reference is made to the performance of motor industry exports for the period 1995 to 1998 in section 4.7. Particular consideration is given to the effectiveness of the MIDP in terms of export expansion when compared to Phase VI of the local content programme. Finally, section 4.8 considers a short-term policy option for South Africa beyond 2007, when the MIDP expires, in light of Australia's Automotive Investment Competitiveness Scheme (AICS).

4.2 OBJECTIVES OF THE MOTOR INDUSTRY DEVELOPMENT PROGRAMME

The primary objectives of the MIDP include (DTI, 1998:3; NAAMSA, 1999:9):

(I) Developing a globally integrated and competitive domestic motor vehicle and component auto industry.

(II) Stabilizing long-term employment levels in the industry.

(III) Improving the affordability and quality of vehicles.

(IV) Further promoting the expansion of exports and improving the sector's trade balance.

(V) Contributing significantly to the country's economic growth.

4.3 MOTOR INDUSTRY DEVELOPMENT PROGRAMME (1995–1999)

The key features of the MIDP can be summarized as follows:

(I) Although minimum local content regulations were abolished, a certain value of real local content is required to avoid paying customs duties under the export facilitation scheme (IEC).

(II) Tariffs on CBUs will be reduced gradually to 40 per cent and tariffs on CKDs to 30 per cent over an eight-year period by the year 2002 (see table 4.1).

(III) A number of incentives are available to OEMs and component manufacturers subject to qualification criteria. The incentives are: Import export complementation scheme (IEC), Duty free-allowance (DFA) and the Small vehicle incentive (SVI) scheme.

Each will be explained in the sections to follow, including the proposed changes made to the MIDP established by the recent Mid-Term Review. Furthermore, a theoretical analysis of a more liberalized automotive trade regime is given and is compared to a protective industry programme such as Phase VI of the local content programme, in terms of the economic effects on domestic assemblers, component producers, consumers, government and national welfare. Scope for further research in this area exists, especially quantitative research, directed at estimating the costs and gains to producers, consumers and government of moving from the one regime to the other.

4.3.1 Tariff Reduction Programme – 1995 to 2002

From the initial year of the MIDP tariffs on imported passenger vehicles (CBUs) were reduced to 65 per cent, while tariffs on original equipment components were lowered to 49 per cent. Subsequent to the recommendations made by the MITG in 1994, the planned tariff reduction programme for passenger vehicles and components, initially up until 2002 (before the Mid-Term Review), was as follows:

Table 4.1 Planned Tariff Reduction Schedule for Passenger Vehicles (CBUs) and Original Equipment Components (CKDs) under the MIDP 1995–2002

Year	CBUs (%)	CKDs (%)
1995	65	49
1996	61	46
1997	57.5	43
1998	54	40
1999	50.5	37.5
2000	47	35
2001	43.5	32.5
2002	40	30
2003	38	29
2004	36	28
2005	34	27
2006	32	26
2007	30	25

***Source*: BTT (1995)**

From 1995 to 1996 the tariff rate on CBUs was to be reduced by 4 per cent; thereafter it would fall by 3.5 per cent per year for the next six years until 2002. Amendments from the Mid-Term Revision Committee of the MIDP proposed that tariffs be reduced further until 2007 (see table 4.1 above). That is, beyond 2002 the tariff on CBUs will be lowered by 2 per cent annually for five years until the end of 2007 when the tariff rate reaches 30 per cent. For CKDs, the tariff initially fell by 3 per cent per year until 1998. It was reduced from 1998 to 2001 by 2.5 per cent each year. A further 1 per cent annual reduction is expected from 2002 to 2007. According to the Mid Term Review, the gradual lowering of tariffs from the inception of the MIDP in 1995 until mid-1999, allowed the domestic industry sufficient time to adapt to competition from imports.

Australia, like South Africa, reduced its tariffs on CBUs and CKDs gradually. According to their tariff reduction schedule, the tariff rate was scheduled to fall by 2.5 per cent annually on 1 January each year until 2000. Under the Button Car Plan[4], tariffs were reduced from a high 57.5 per cent in 1987 to 17.5 per cent on 1 January 1999. For the next five years until 31 December 2004, the tariff rate will remain at 15 per cent. Thereafter, a further 5 per cent reduction to 10 per cent will be accomplished by 1 January 2005 (Mascitelli, 1999:12).

Table 4.2 Tariff Rates for Selected Low-volume Producing Countries, 1997

Country	CBUs %	CKDs %
Australia	22.5	-
Brazil	65–70	5
India	50	20–40
South Africa	57.5	43
Taiwan	30–42	-
Malaysia	200	-

***Source*: Compiled from AutoAsia (2000), BTT (1995), Humphrey (1998), Sidorenko and Sarfudin (1998)**

[4] The MIDP is based on Australia's Button Car Plan.

In Brazil, the initial tariff reduction programme started in 1990. Tariffs were lowered by 25 per cent in the first year, 20 per cent in the second and 15 per cent in the third and fourth years respectively. As tariffs declined, the importation of cars rose rapidly. Evidently so did the automotive trade deficit. It can be said that import liberalization in Brazil, especially tariff reductions, was introduced too quickly, hence it had an adverse impact on the local automotive industry. Later, tariff rates on cars were re-adjusted. Tariffs were raised from a low 20 per cent in 1994 to 70 per cent in March 1995 (WTO, 1996) under the new "Automotive Regime" following the negative impact the motor vehicle trade deficit had on the country's balance of payments. The motor vehicle trade deficit was a significant 2.8 billion US dollars in 1995 (Humphrey, 1998:150-151). 1997 reduced tariffs on components significantly to 5 per cent.

The lowering of import duties is a general trend occurring globally. Within the developing world regional integration arrangements among member economies are becoming increasingly prevalent. Examples of such regional trading arrangements are APEC (Asia Pacific Economic Community), AFTA (ASEAN Free-Trade Area), NAFTA (North American Free-Trade Area) and closer to home, SADC (South African Development Community). The creation of a unified economic free-trade market between member countries brings to them all the benefits of an expanding market. Or, put in more detail, the rationale behind integration in the developing world lies in the fact that it may give rise to: preferential tariff rates among member countries, trade expansion, greater economies of scale, regional division of labour, increased intra-industrial trade and increased specialization (Chudnovsky, et al., 1996:2; Humphrey 1998:148).

In the MERCOSUR[5] region, the sectoral bilateral trade agreement (1991–1994) between Brazil and Argentina enhanced intra-regional trade between the two countries. This led to dramatic growth of the automotive and auto parts industries in both countries. Production complementation and foreign investments by existing TNCs and new entrants increased substantially. Automotive policy developed at the MERCOSUR level was primarily

[5] MERCOSUR trade bloc includes Brazil, Argentina, Paraguay, Uruguay, with Chile as an associate.

responsible for the strong growth in production, export and import levels in Argentina's auto industry. It is important to note that the Argentine auto industry, unlike Brazil's, did not undergo rapid tariff liberalization in the early stages of its restructuring. Both countries benefited from the rapid increase in intra-regional trade. The motor vehicle and components sector registered the largest volume and highest growth rates within the trading bloc (Chudnovsky, et al., 1996:1-10).

In the South African automotive industry reducing tariff rates (in line with other developing countries) have spurred the entry of foreign vehicles. Presently imported CBUs account for 17.6 per cent of the domestic market (DTI, 1999:7). Gradual tariff liberalization in the South African motor industry has been favourable (as Argentina and Australia) compared to the rapid tariff liberalization experienced by Brazil. The increase in the demand for imported CBUs is consistent with the MIDP's objective of "rationalizing the industry" provided that low-volume vehicle models are imported and high-volume models are increasingly being localized and exported. It is expected that lowering protection levels will eventually lead to rationalizing of the domestic industry, especially in terms of low-volume vehicle models but not necessarily with respect to the number of car makers.

4.3.2 Import-Export Complementation Scheme (IEC)

As mentioned earlier, the MIDP's export support scheme aims to encourage OEMs and component manufacturers to promote motor industry exports and also to become globally integrated and competitive. Keeting (1988:11-41) especially argues that developing nations need measures additional to macroeconomic policies, to provide exporters with imports (inputs) at world market prices, such as exemptions from, or rebates to, customs and excise duties. Success in manufactured export performance in recent years has proved to depend significantly on the export requirements or subsidies awarded to industries (Wade, 1991:299). Most other low-volume vehicle producing

economies like Australia, Korea, Brazil, Uruguay, Malaysia and others adopted this type of export subsidy as part of an export-led regime.

Also referred to as an export facilitation scheme (EFS), the IEC was initiated under Phase VI of the local content programme and continued under the MIDP to encourage OEMs and component suppliers to further enhance the exporting of automotive parts and passenger vehicles. The idea was that OEMs must earn sufficient foreign exchange by exporting in order to partly compensate for the foreign exchange used to import the necessary components. *The local content value of exports may be used to rebate the customs duty payable on CBUs or CKDs. Import rebate credit certificates (IRCCs) were issued and then used to offset duties payable.* In cases where component producers were issued export credits, they could sell them to OEMs or use them to offset imports of after-market or replacement parts.

Effectively these export credits operate as export subsidies. For every R1 worth of local content value exported, R1 worth of components could be imported duty-free. It is important to note that the credits earned from exporting eligible components to offset import duties payable, are allowed only after the DFA and the SVI credits (to be explained in the following section) have been taken account of, and provided there is still a duty outstanding.

It is universally recognized that EFSs are not consistent with WTO and GATT requirements, and will eventually be phased out in compliance with WTO regulations. In view of this it is argued that the IEC, which is facilitated by the IRCCs, might actually be liable for countervailing duties under WTO regulations. A country is liable for such duties when the export price from the country of origin is less than the world market price in that country. It is well known from classical economic theory that export subsidies act as a barrier to trade imposing a trade-distorting effect in a free trading environment. Recent examples of the application of this doctrine are Korea and India, which were found liable for such countervailing duties (Newman, 1999:22). Also, under Australia's "Passenger Motor Vehicle Export Facilitation Scheme", the exporting of automobile leather products would involve a prohibited subsidy and might be

liable for countervailing duties (METI, 2000). In that case the Australian government announced that the EFS would no longer exist under the new Automotive Competitiveness Investment Scheme (ACIS), which will be introduced on 1 January 2001 (DISR, 1998). Under the MIDP, the IEC will be lowered in stages commencing in January 2000 through to 2007, and will probably be phased out completely in the future.

4.3.3 Duty-Free Allowance (DFA) and Small Vehicle Incentive (SVI)

A duty-free allowance (DFA) equal to 27 per cent of the manufacturer's wholesale vehicle price can be rebated against the customs duty payable on imported components. The rationale behind the introduction of the DFA, was to enable OEMs to import certain high value auto parts, which were not available locally or were relatively expensive on world markets, partly or fully duty-free. Effectively imports are subsidized by means of rebating import duties.

Consider the following numerical illustration:

Suppose an OEM assembles 50 passenger vehicles at a wholesale price of R30,000 each. The DFA is equivalent to a maximum of 27 per cent of the wholesale value of the vehicle, that is:

DFA = (50 X R30,000 = R1 500 000) x 27 % = **R405,000**

When applying the DFA of 27 per cent, this means that an OEM may import components worth R405,000 duty-free. One problem associated with the DFA, was that it was somewhat abused. For example, given that local content regulations were discontinued under the MIDP, OEMs could in all likelihood still acquire the allowance even if the motor vehicle was completely assembled from imported kits only. In other words, OEMs were eligible for the DFA as long as the vehicle was assembled domestically; and incorporated absolutely no domestic content.

In addition to the DFA, the SVI offers a further allowance of 3 per cent for every R1, 000 below a wholesale price of R40,000. The aim of introducing the SVI, was to promote the production of smaller and cheaper motor cars. It has assisted in reducing the price of entry-level vehicles, causing price wars in the lower end of the market and thus benefiting consumers. However, the Board of Tariffs and Trade (BTT) maintains that the SVI allowance has to an extent promoted vehicles embodying dated technology in this category (BTT, 2000:19).

The SVI is said to have also had a negative impact on the industry in terms of the proliferation of models, increasing the number of small vehicle models.

Extending from the above illustration, an additional SVI allowance of 3 per cent or a rebate of R30 for every R1,000 for vehicles priced below R40,000 is given:

SVI = (50 X R10,000) x 3 per cent = R500,000 X 3 per cent = **R15,000**

These two allowances total:

DFA + SVI = R405,000 + R15,000 = **R420,000**

Thus, R420,000 can be rebated to offset the customs duty payable in this particular illustration.

The nett duty payable is determined by firstly allowing for the DFA (less the DFA allowance of 27 per cent), thereafter if the vehicle price is smaller than R40,000, (less the SVI allowance). Finally, depending on the local content of the vehicle and if the vehicle happens to be exported, export credits may be issued (less IRCCs) against the balance, if any, of the duty payable. This undoubtedly displays the fact that OEMs operated under favourable incentive conditions, especially in terms of exporting since export volumes are included in the qualification for DFA and for export credits. However, it should be noted that once export volumes are included in the calculation of the rebate for

qualification of DFA, they might not qualify under the IEC scheme (MITG, 1994:53).

The following section provides an outline of the proposed and accepted amendments made to the MIDP by the Mid-Term Review in July 1999.

4.4 MID-TERM REVIEW OF THE MIDP

The MIDP was blamed for increased job losses, protecting uncompetitive domestic industries producing low volumes and a variety of vehicle models with inferior quality. After monitoring the progress of the MIDP, recommendations were proposed by the Mid-Term Review. These involved the extension of a modified MIDP until the year 2007.

4.4.1 Continuation of Tariff Phase-down Schedule – Post-2002 to 2007

A further reduction in tariffs from the initial 40 per cent (2002) to 30 per cent (2007) for CBUs, and a decline from 30 per cent (2002) to 25 per cent (2007) for original equipment components will transpire (refer to table 4.1). Tariffs on SKDs will be the same as those on CBUs.

As tariffs continue to fall post-2002 to 2007, duties on CBUs and CKDs will tend to move closer together, though tariffs on CBUs remain consistently higher than CKDs. The likely impact will be a rise in both CBUs and original equipment component imports in the foreseeable future. Already CBU imports account for 17.6 per cent of the domestic market (DTI, 1999:7). It is expected that imports will rise dramatically in developing countries as tariff liberalization progresses (Chudnovsky, et al., 1996; Humphrey, 1998), and South Africa is expected to conform to this pattern.

4.4.2 New Volume-based Duty-free Allowance (DFA)

The DFA of 27 per cent will remain until 2001, but will eventually be phased out by 2007. However, the new DFA (2000) is linked to production volume targets. In other words, OEMs that produce models, which attain the prescribed volume targets, will qualify for the full DFA of 27 per cent. In 2000, no minimum volume is required to qualify for the full DFA.

Table 4.3 Planned DFA Volume-based Targets, 2001–2007

Year	2001	2002	2003	2004	2005	2006	2007
Model's % of Total Domestic Market	1	2	2.5	3	3.75	4.5	5

***Source*: BTT (1999)**

It has been proposed that vehicles of particular models[6] with volumes greater than 5 per cent of the total domestic market will qualify for the entire 27 per cent DFA in 2007. In cases where OEMs do not reach the required volume targets (as prescribed in table 4.3 above), only 23 per cent of the DFA will be received in 2001 and 20 per cent DFA in 2002, and subsequent years until 2007. Also, exports form part of the total market. This means that OEMs with large exporting agreements, such as BMW, VWSA and MBSA[7], will easily reach the 5 per cent volume targets. Moreover, from 2003 an OEM reaching the volume target will be granted the opportunity to offer a second model and is likely to receive a 20 per cent DFA in this respect. Presently, the Corolla and the Conquest models produced by Toyota already exceed 5 per cent of the total market. It is assumed that very few vehicle models will reach this target (van der Walt, 1999).

[6] "A model means those specified motor vehicles of which the floor plan, front side panels, front fenders, bonnet, windscreen, roof panel, side pillars and the dash panel are of identical construction" (BTT, 2000:16).

[7] BMW (3-series right hand drives), MBSA (C-Class) and VWSA (60 000 units: Golf 4) (SB, 1998:1).

The main aim of the new structure of the allowance is to avoid the proliferation of vehicle models and eliminate smaller production runs. The reduction in the DFA allowance will make it increasingly difficult for OEMs to produce low-volume vehicles and thus force OEMs to reduce or stop producing these low-volume models. There will be a tendency to import, rather than assemble, these models.

Given the imposition of lower tariffs, industry sources suggest that it is unlikely that some OEMs will continue to survive without the full DFA. These are OEMs which are at present heavily dependent on the 27 per cent DFA. There will certainly be a bias against low-volume models and toward higher-volume models in the short term. The effects, which the policy is aimed at over time, will be the reaping of economies of scale, improvement in productivity levels, increased capacity utilization and higher profit margins.

4.4.3 Small Vehicle Incentive Phasing-out by 2003

In recent years the composition of the South African car market has shifted toward the production of smaller, cheaper and fuel-efficient models especially encouraged by the structure of Phase VI (section 3.3) and the SVI allowance under the MIDP. This has been in line with worldwide demand patterns. One objective of the MIDP was to reduce vehicle prices making them more affordable to the average consumer. According to the DTI, vehicle prices have been falling in real terms and remained consistently lower than the CPI from 1995 onwards (DTI, 1999:15). There is no doubt that the SVI played a vital role in this respect.

However, 2003 will phase out the SVI as follows:

Table 4.4 Phasing-out Schedule of the SVI Allowance, 1999–2002

Year	Cut-off Value	% SVI per R 1000 below Qualifying Value
1999 (Jan–June) 1999 (July–Dec)	R 40,000+PPI% (1999:4 %) R 41,600	3 2.5
2000	R 44,000	2
2001	R 44,000+PPI% increase of previous year (2000)	1.5
2002	Value for 2001+PPI% increase of previous year	1

***Source*: BTT (2000)**

Table 4.4 above shows, for example, in 2001 an OEM will only be eligible for an SVI rebate of R15 for every R1,000 below a wholesale vehicle price of R44,000 plus the PPI percentage increase of the previous year. The SVI allowance caused a distortion in the small car segment of the vehicle market by way of imposing higher welfare costs to the local industry. As already mentioned elsewhere, the SVI gave firms an incentive to continue producing and promoting vehicles, which embodied dated technology and were possibly of lower quality. This was not consistent with the MIDP's targeted outcomes. The Mid-Term Review proposed a phasing-out programme, which would be gradual so as to limit the adverse impact that its eventual sudden withdrawal might have on the industry.

It is well known that the SVI favours the production of smaller vehicles. Since many higher volume models fall into this lower price category (BTT, 2000:19), by eliminating the distortion caused by the allowance, it is realistic to expect some declines in the volumes of popular models and the termination of less popular vehicle models. In increasing the cut-off or qualifying values for SVI, at least in the short-term, an attempt is made to allow for price inflation in determining the category of vehicles permitted to benefit from the reduced allowance.

These predicted effects are similar to those discussed earlier in relation to the volume-linking of the DFA. This is because both adjustments involve the elimination or reduction of subsidies for certain categories of cars.

4.4.4 Adjustment of the Import-Export Complementation (IEC) Scheme

According to the MIDP Mid-Term Review, the export complementation scheme will be phased-down from 2003 to 2007. Initially under the MIDP, OEMs were allowed to import component parts equivalent in value to export components by earning export credits. Export credits will now be gradually lowered, although not removed completely, under the revised MIDP.

The qualifying value of eligible CBUs and component exports will be phased down as follows:

Table 4.5 Qualifying Value of Eligible Export Performance, 1999–2007

Year	CBU Light Motor Vehicles %	Components %
1999	100	100
2000	100	96
2001	100	93
2002	100	90
2003	94	86
2004	88	82
2005	82	78
2006	76	74
2007	70	70

***Source*: BTT (2000:20)**

By 2007 OEMs and component producers may earn 70c worth of export credits for R1 of exports to offset imports. Effectively the export subsidy to the industry will be reduced. The Board aims to achieve a balance in support for both exports and domestic motor industry products in an attempt to encourage localization and maintain higher export volumes. It is believed that post-2007 export credits will be linked to larger production volumes or investments in order to reduce or eliminate low-production volumes. This proposed scheme is similar to Australia's Automotive Competitiveness Investment Scheme (ACIS) and will be outlined in section 4.8.

As noted earlier, the IEC scheme played a significant role in achieving export expansion, especially in export components (see table 4.4 and tables 4.9, 4.10, and 4.11). In the short-term it can be expected that motor industry exports might be adversely affected, but the extent is uncertain. The evidence is not uniform. For instance some think that India's experience shows that export subsidies had a minimal impact on export performance. What seems to have been more of a driver of export expansion was economic growth and exchange rate management (Panagariya, 2000:18). Other important factors favourable to export expansion include increased foreign investment, increased diversification of the export country's manufacturing base and benefits from an expanded market, among others.

The next section 4.5 provides a theoretical analysis, as well as some welfare implications, of a protective automotive policy compared with a tariffs-only automotive policy. This comparison may be applicable to South Africa in the future when government support systems fall away – which is the direction in which current policy is moving – and moderate tariffs remain.

4.5 THEORETICAL ANALYSIS OF MOTOR INDUSTRY POLICY

The economic literature regarding motor industry-specific programmes adopted by many economies with low-volume producing motor industries indicates that measures such as domestic content regulations, QRs, import tariffs, and export subsidies were common features of these programmes. Australia, Brazil, Philippines, Malaysia, among others employed such measures as part of their motor industry programmes at some stage. In recent years most developing countries, including South Africa, are liberalizing and restructuring their automotive industries to meet the challenges of globalization and rapid technological change. This can be noted by increased import liberalization, the abolition of local content requirements and the reduction or elimination of export subsidies formerly incorporated in motor industry policies. This section aims to provide a theoretical analysis of the economic impacts of a protective regime compared to a less protective – tariffs-only automotive policy (Tacaks, 1992:3-15). Note that a quantitative analysis assessing the economic impacts of these programmes will not be pursued here.

This theoretical analysis is applicable to a comparison of South Africa's local content policy, particularly Phase VI of the local programme, with post-MIDP policy (IEC will most likely be phased-out and tariffs will remain). The protective regime modeled here, which is similar to Phase VI, includes the imposition of minimum local content requirements (66 per cent by value)[8], compensatory export requirements for importing kits (50 per cent)[9] and high tariffs on fully built-up vehicles, which virtually prevented the importation of CBUs in both South Africa and the Philippines.

The tariffs-only regime is more applicable to future (likely policy-option) motor industry policy in South Africa, although it is also partly applicable to the present MIDP, in that tariffs on CBUs and CKDs are falling (see table 4.1), local content

[8] It is not clear whether local content requirements in the Philippines was based on value or weight. Under the Car Development Programme in the Philippines, the local content requirement stood at 40 per cent.
[9] Compensatory export requirement for importing kits in the Philippines was 50 per cent.

requirements have been abolished, and import-export requirements are falling and will most probably be phased-out.

4.5.1 Protective Automotive Regime

Consider a simple model based on a partial equilibrium analysis. Assume a small domestic importing economy operating under conditions of perfect competition. There are two markets – one is the domestic market for assembled motor cars produced using both imported and domestically manufactured auto parts, and the other is the domestic market for produced components.

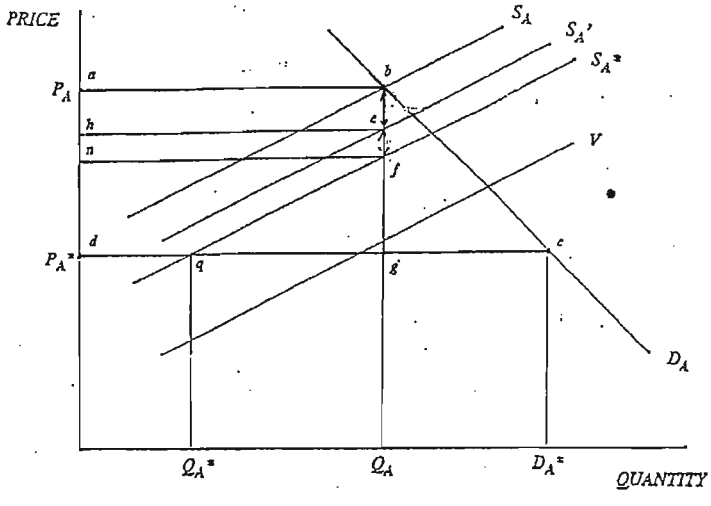
Assume that motor vehicles are homogenous goods, that is, only one type of finished vehicle is assembled. No differentiation is made among different types of components that are incorporated into a finished vehicle. A given number (α) of domestically manufactured and imported components (or intermediate inputs) are assembled using existing technology to produce a finished motor vehicle. Since the supplies of local auto components are dependent in part on the assemblers' demand for components to assemble a motor vehicle, and since both parties have to conform to local content regulations, import-export requirements and tariffs, equilibrium outcomes (price and output) in both markets will be determined jointly [see figures 4.1 panel A (p.104 and 4.2 panel C (p.109)]. Imports of completely built-up units are virtually prohibited due to high tariff rates imposed on assembled vehicles.

Domestic content requirements pertain to the proportion of localization of motor vehicles based on value; thus (δ) refers to the percentage of components that must be sourced locally. In terms of export compensatory requirements, exports must earn foreign exchange equal to the proportion (x_k) of the value of kits imported. Tariffs are imposed on imports, (t_k) is the tariff paid per automotive imported kit.

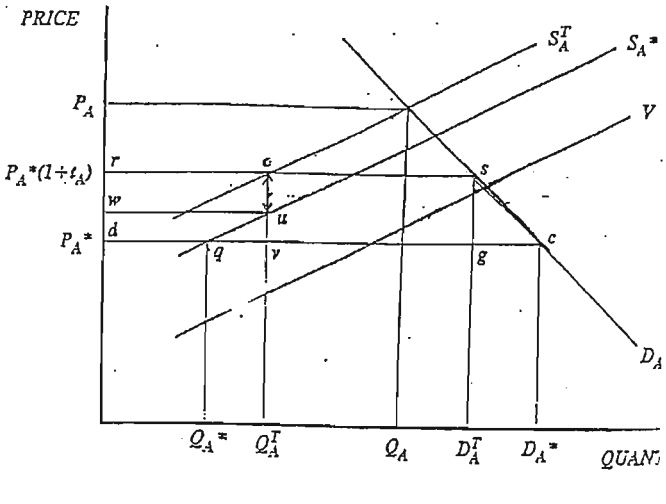
Minimum local content regulations, import duties and export compensatory requirements are all binding. For example, if there were no minimum local content requirements, OEMs and component producers would otherwise incorporate lower domestic content in motor cars. Similarly, imports are reduced by tariffs and export import requirements increase exports. The export compensatory scheme operates in such a way so as to increase costs to assemblers, since they have to export at a loss if they are to be able to import components at the world price. In conventional trade theory (as will be illustrated) the combined effect of content protection and import export requirements raises the costs of production by increasing the costs of inputs. In addition the imposition of an ad valorem tariff also contributes to higher production costs.

Figure 4.1 The Market for Domestic Assembled Vehicles

Panel A: Protective Regime



Panel B: Tariffs-only Regime



***Source*: Tacaks (1992)**

The market for assembled motor vehicles under a protective regime is illustrated in the figure 4.1 panel A above. The market for assembled autos under a tariffs-only policy (figure 4.1 panel B) will be discussed in section 4.5.2.

The local demand for assembled vehicles is represented by the demand curve (D_A), where the quantity demanded of assembled motor vehicles is represented by equation **(1)**:

$$Q_A{}^D = D(P_A) \qquad \textbf{(1)}$$

Thus, equation **(1)** represents the demand for finished automobiles, where (Q_A^D) is the quantity demanded of assembled autos and (P_A) is the domestic price. Hence, (Q_A^D) is a decreasing function of (P_A).

(V) represents the domestic value-added supply function for assembled vehicles:

$$V = V(Q_A^S) \qquad \textbf{(2)}$$

Equation **(2)** presents this upward-sloping function of value-added in domestic assembly manufacturing, where assemblers are willing to assemble a greater quantity of vehicles as value-added per unit increases, thus V is positive. (Q_A^S) is the quantity of domestic motor vehicles produced.

(π) refers to the percentage by which domestic component prices are greater than world market component prices, $\pi = (P_C - P_C{}^*)/P_C{}^*$, where (P_C) is the price of motor components in the domestic market and $(P_C{}^*)$ is the import price of components.

Long-run unit cost is the cost of components (imported and local) plus value-added. On the assumption of a perfectly competitive assembly industry, long-run unit cost equals price.

Then (making appropriate substitutions):

$$P_A = \alpha P_C * (1-\delta)(1+t_k+x_k\pi)+\alpha P_C * \delta(1+\pi)+V(Q_A^S) \qquad (3)$$

Hence, equation **(3)** may be regarded as the long-run assembly industry inverse supply curve. Supply price (P_A) for any given quantity (Q_A^S) is the vertical sum of the:

(I) domestic value-added that would be required for firms to be willing to assemble various quantities of vehicles, $V(Q_A^S)$

(II) plus, the cost per vehicle of domestic components used as intermediate inputs, $\alpha P_C * \delta(1+\pi)$

(III) plus, the effective cost of the imported kit, which includes the tariff and the loss on compensatory exports required, $\alpha P_C * (1-\delta)(1+t_K+x_K\pi)$.

Given that fully imported vehicles are prohibited, equilibrium in the domestic market would occur where (D_A) intersects with (S_A), such that the quantity demanded (Q_A^D) equals the quantity supplied (Q_A^S). Hence, the equilibrium price (P_A) and the equilibrium quantity (Q_A) for assembled vehicles is determined where:

$$Q_A^D = Q_A^S \qquad (4)$$

Equations **(1)** to **(4)** determine the following variables: P_A, Q_A^D, Q_A^S and V given P_C, P_C*, t_K, x_A, x_K, α and δ.

The analysis is presented graphically (as noted earlier) in figure 4.1 panel A. It is useful for purposes of policy comparison to introduce the industry supply curve under free-trade, which can easily be derived within the above frame-work. If (S_A) is the domestic supply function (as determined above) and (S_A*)

represents the supply curve under free-trading conditions, then the vertical distance between (S_A) and (S_A*) incorporates the costs of all protective requirements of the automotive regime. Under free-trade $S_A* = V(Q_A^S) + \alpha P_C*$ (that is, inverse industry supply curve), which is derived by setting all protective variables δ, t_K, x_K, and π equal to 0 in equation **(3)**.

Thus, the domestic supply curve (S_A), which include all protective measures can be expressed as:

$$S_A = (V(Q_A^S) + \alpha P_C*) + \alpha P_C*(1-\delta)t_K + \alpha P_C*(\pi\delta + (1-\delta)x_K\pi)$$

where:

(I) $V(Q_A^S) + \alpha P_C*$ is the free-trade supply curve (S_A*).

(II) $\alpha P_C*(1-\delta)t_K$ refers to the rise in costs per assembled vehicle due to the tariff imposed [This is the vertical distance between (S_A*) to (S_A') in diagram 4.1 panel A. (S_A') is the supply curve including the tariff, but excluding domestic content and compensatory export requirements].

(III) $\alpha P_C*(\pi\delta + (1-\delta)x_k\pi)$ refers to increase in costs due to domestic content and compensatory export requirements [This is represented the by the vertical distance between (S_A') and (S_A)].

To repeat, in a different format, (S_A') is the industry supply curve including the tariff and lies above the free-trade supply curve (S_A*) because of the tariffs imposed on component kits. This vertical distance between the curves represents an increase in input costs equal to the tariff paid per kit. The distance between (S_A') and (S_A) reflects the combined impact of the domestic content and export import requirements that also contribute to higher input costs to domestic assemblers. In figure 4.2 panel C (as we shall soon see in detail)

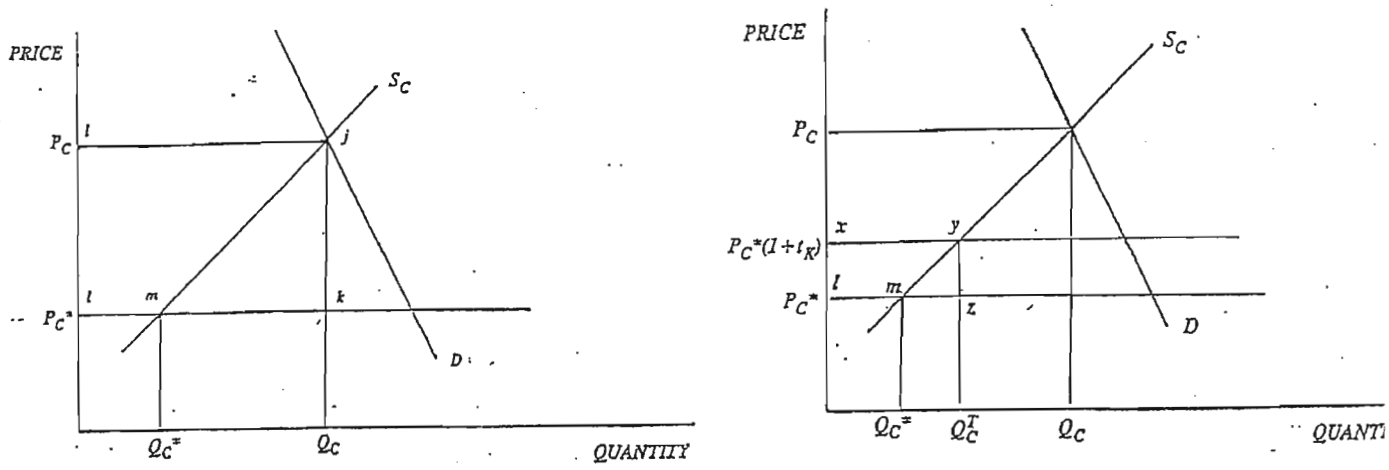
the price of domestic components (P_C) exceeds that of imported components (P_C*) thereby raising the costs to the domestic assemblers, since domestic components are intermediate inputs used in the production of assembled motor cars. Graphically, (S_A) is the vertical sum of the supply curve under free trade (S_A*), the increase in assembly industry costs per vehicle due to the tariff, and the increase in costs attributable to the domestic content and compensatory export requirements.

Figure 4.1 panel A shows the world price (P_A*) of a vehicle and because CBU imports are prohibited, the domestic price (P_A) is not under pressure from the lower and more attractive world price (P_A*). The higher finished vehicle price encourages domestic assemblers to increase their domestic production. In the absence of the protective policy, world prices would prevail in both the domestic assembly market and the components market. Hence, at the free-trade or world price (P_A*), domestic assemblers would produce (Q_A*) units and consumers would buy (D_A*) assembled units of vehicles. Therefore (D_A*-Q_A*) finished vehicles would be imported.

Turning now to the domestic component producing industry in figure 4.2 panel C below (panel D will be referred to in section 4.5.2)

Figure 4.2 The Market for Domestic Components

Panel C: Protective Regime **Panel D: Tariffs-only Regime**



***Source*: Tacaks (1992)**

In the above figure panel C, the domestic price of components is (P_C) and the quantity of components supplied is (Q_C). (P_C) and (Q_C) are determined where the demand curve (D_C) intersects with the supply curve (S_C).

The supply curve (S_C) is an upward-sloping curve. The inverse industry supply curve is:

$$P_C = S(Q_C) \qquad (5)$$

On the demand side, (D_C) reflects the demand curve for automotive parts, which includes the demand for locally-produced components to be combined with imports that are incorporated in an assembled vehicle as well as the demand for domestically produced exported auto parts required to compensate for the importation of kits. Hence, the total demand curve (D_C) is equal to the

horizontal summation of the demand for components by the local assembly market and for export-import purposes.

The total quantity demanded for motor components can be written as:

$$Q_C = x_K \alpha(1-\delta)Q_A(P_C^*/P_C) + \alpha\delta Q_A \qquad (6)$$

Equation **(6)** comprises of two parts and determines the total inverse demand curve for components, where:

(I) exported components (under the compensatory export requirements) necessary to import kits, $x_K \alpha(1-\delta)(P_C^*/P_C)Q_A$.

(II) the demand for domestically produced components to be combined with imported kits to assemble a finished vehicle, $\alpha\delta Q_A$.

Equations **(5)** and **(6)** will determine P_C and Q_C, provided Q_A, P_C^*, x_K, α, and δ are given.

The combined impact of local content requirements and compensatory export requirements tend to increase the demand for locally-produced auto parts, thus resulting in higher prices charged and increased output by component producers.

Simultaneously, equations **(1)** to **(6)** determine variables P_A, Q_A^D, Q_A^S, V, P_C and Q_C given P_C^*, α, t_K, x_K, and δ, since the markets for components and assembled vehicles are connected. Hence, equilibrium prices and quantities for components and assembled vehicles are determined together.

Under free international trade, domestic producers are forced to lower the domestic price of components from (P_C) to the world price (P_C^*). At the lower competitive world price (P_C^*), the quantity of output produced will fall from (Q_C) to (Q_C^*). Given that no local content, export requirements and tariffs apply, the

effect on domestic component production will be a decrease in output. The quantity of components that would be imported at $(P_C *)$ will equal $(Q_C - Q_C *)$ as shown in figure 4.2 panel C.

Theoretically, the magnitude of the various protective policy instruments indicates that high costs are imposed on vehicle buyers and that resources are allocated in the direction of potentially high-cost operations.

4.5.2 Tariffs-only Automotive Policy

Under a tariffs-only regime the embargo on fully built-up imports will be replaced with a non-exclusionary ad valorem tariff rate; domestic content regulations and export compensatory requirements will be eliminated; and present tariff rates on vehicles and kits will apply. Eliminating the embargo on imported CBUs, but maintaining present tariff rates, will lead to a large inflow of imported vehicles into the domestic market putting pressure on domestic assemblers to reduce prices.

In figure 4.1 panel B, $(S_A *)$ refers to the supply curve under free-trade and (S_A^T) represents the supply curve including the tariff on kits. Given that domestic content and export compensatory requirements are eliminated, the embargo on CBUs lifted and only tariffs remain, the industry supply curve can be expressed as:

$$S_T^A = V(Q_A^S) + \alpha P_C * (1 + t_K) \qquad (7)$$

(S_A^T) is equal to $(S_A *)$ plus the tariff. That is, the costs of components per vehicle attributed to the tariff, $\alpha P_C * (t_K)$, will shift from $(S_A *)$ to (S_A^T).

At the free-trade price $(P_A *)$, $(Q_A *)$ would be produced and $(D_A *)$ units of motor vehicles purchased. At the relevant tariff rate on vehicles (t_A), the domestic price will be $P_A * (1 + t_A)$. At this lower price level that consumers would

be paying the quantity demanded would be (D_A^T) and the quantity supplied (Q_A^T), thus $(D_A^T - Q_A^T)$ units of vehicles would be imported at the present ad valorem tariff rate.

In the component production market (figure 4.2 panel D), the elimination of domestic content and export-import conditions would induce assembly firms to source imported components at world competitive prices $(P_C *)$. This will cause local part producers to reduce the price of their components to $P_C *(1+t_K)$. At this price level, the quantity of components produced would fall to (Q_C^T). Given that the cost price of components is now lower to domestic assembly manufacturers, the supply curve will shift downward to (S_A^T) (as noted above). Under a tariffs-only regime a relatively low tariff rate would make vehicles more affordable, thus stimulating the demand for purchasing new vehicles, which in turn would encourage domestic production and generate greater overall economic benefits.

Furthermore, this theoretical model attempts to analyze the impact of automotive policy by comparing the welfare implications associated with a protective regime with that of a tariffs-only programme. This is done in the following section 4.5.3.

4.5.3 Welfare Costs and Gains Associated with Motor Industry Policy

Welfare effects under the protective regime (section 4.5.1) can be assessed by comparing it to that of a less protective – tariffs-only automotive regime (section 4.5.2). Under the protective regime, as has already been pointed out, the import ban on CBUs, increases the domestic price of motor vehicles to consumers. This higher vehicle price makes it profitable for assemblers to produce more units of vehicles. On the other hand domestic content regulations, export requirements and the tariffs imposed on kits collectively raise input costs to domestic assemblers discouraging output. The net effect will depend on the size of each effect.

The protective regime imposes costs on consumers by reducing consumer surplus (as compared to free trade) equal to area ***abcd*** in figure 4.1 panel A. The consumer loss is reflected in transfers to the government, domestic assemblers, component producers and deadweight losses (consumption and production). The tariff revenue per kit to the government is equal to area ***hefn.*** A deadweight consumption loss equal to area ***bcg*** is attributable to higher automobile prices. Area ***abeh*** as determined by the upward shift of (S_A') to (S_A) resultant from the effect of domestic content protection and export requirements, represents increased costs of components (area ***ijkl*** in figure 4.2 panel C) incurrred by domestic assemblers. These higher costs of production, shown by area ***abeh***, are partly appropriated by component manufacturers in the form of higher profits (area ***ijml*** in figure 4.2 panel C). The other part, a deadweight production (efficiency) loss equal to area ***jkm*** (in figure 4.2 panel C) is attributable to the excess costs of production of the additional output equal to $(Q_C * - Q_C)$, which the protective regime has encouraged by inducing the purchase of auto parts in the domestic market at (P_C). Thus, total transfers from consumers to domestic component producers are equal to area ***ijkl [ijml+jkm]*** in figure 4.2 panel C.

Higher profits equal to area ***nfqd*** (in figure 4.1 panel A) is a transfer from consumers to domestic assemblers. A deadweight production loss equal to area ***fgq*** stems from additional costs of producing $(Q_A * - Q_A)$ units of motor vehicles at the domestic price (P_A) instead of importing vehicles at the world price $(P_A *)$. Thus, area ***nfgd [nfqd+fgq]*** in figure 4.1 panel A, represents the total transfers from consumers to domestic assemblers.

Table 4.6 Summary of Welfare Costs and Transfers: Automotive Protective and Tariffs-only Regimes Compared

Gainers and Losers	Protective Regime Fig 4.1 A (Fig 4.2 C)	Tariffs-only Regime Fig 4.1 B (Fig 4.2 D)
Consumer Loss	***abcd***	***rscd***
Total Transfer from consumers to domestic assemblers (including deadweight production loss)	***nfgd [nfqd+fgq]***	***wuvd [wuqd+uvq]***
Total Transfer from consumers to domestic component producers (including the deadweight loss)	***(ijkl) [ijml+jkm]***	***(xyzl) [xyml+yzm]***
Transfer from consumers to government – tariff revenue	***hefn***	***rouw+osgv***
Deadweight consumption loss	***bcg***	***scg***
Deadweight production loss	***fgq+(jkm)***	***uvq+(yzm)***
Total Net Transfers to Producers (Gains in producer surplus)	***nfqd+(ijml)***	***wuqd+(xyml)***
Total Efficiency Losses	***bcg+fgq+(jkm)***	***scg+uvq+(yzm)***

***Source*: Compiled and adapted from Tacaks (1992)**

(Note: Letters in round brackets pertain to figure 4.2 panel C and figure 4.2 panel D, that is, the areas belong to component-industry diagrams. Areas in square brackets are decompositions of areas in the lines above them. Additions of areas from the vehicle and component diagrams take place because certain areas in the component diagrams are not fully identified in the vehicle assembly diagrams, while corresponding areas in the component diagrams are).

Consumer losses resulting from transfers to domestic assemblers and component manufacturers benefit both parties, but their interests are to some extent contradictory. For example, the more stringent domestic content and export-import requirements are relative to tariffs, the more component producers will gain since this effect will encourage the domestic production of output (components), and in turn higher profits will accrue to component firms. However, domestic assemblers' gains will be limited. It is noteworthy that "transfers" in this usage are transfers of expenditure: they are *welfare losses* to consumers but only partially *welfare gains* to producers.

Regarding the tariffs-only automotive programme (table 4.6, column 2), consumer loss will be equal to area ***rscd***, smaller that area ***abcd*** as in the previous automotive regime (see figures 4.1 panel A and B). The reduction in consumer surplus will depend on the tariff rate imposed. Area ***wuqd*** pertains to the higher profits arising from transferring wealth of consumers to domestic assemblers and area ***uvq*** denotes the deadweight production loss. Thus, area ***wuvd [wuqd+uvq]*** represents the total transfers from consumers to domestic assemblers. The deadweight loss in the component manufacturing market is equal to area ***yzm*** and there is a transfer from consumers to component producers equal to area ***xyml***. Together they equal area ***xyzl***, which is the total transfer from consumers to component manufactures. From figures 4.1 and 4.2, it is easily noted that the deadweight consumption and production losses are smaller under the tariffs-only regime than under the protective motor industry policy (as are the transfers of surplus to both sets of producers).

In economic theory, it is well known that tariffs distort the market and penalizes consumers. This will be reflected in a loss of consumer surplus. In quantifying the economic impact (losses and transfers) of both automotive regimes in the Philippines, Tacaks (1992:10-12) found that consumer losses were greater under the protective regime (US$ 215 million in 1990 or 5.2 billion pesos) when compared to the more liberal trade automotive policy (4.8 billion pesos). The drop in consumer loss would have been more pronounced if a lower tariff rate were applied. Both domestic assemblers and component producers benefit from

the protective automotive policy (US$ 123 million). The net welfare loss was estimated to be in the region of US$ 51 million. Corresponding figures for the tariffs-only regime were lower at US$ 116 million and US$ 45 million, respectively.

In the Canadian automotive industry a similar exercise in estimating the impact of tariffs on consumers was carried out. Over the period 1989 and 1997, it was estimated that the loss of consumer surplus in Canada was between US$ 2 and US$ 3 billion and in the 1997–2000 period this figure is expected to be between US$ 1.2 and US$ 1.7 billion in total (CAJAD, 1998:19-20). That is, consumers have been effectively subsidizing the Canadian automotive industry, in light of the above estimates. A study undertaken for the Canadian automotive sector further found that there was a strong case for the removal of tariffs on assembled vehicles, in that consumers, producers (who will become more efficient and profitable when exposed to increased competition), and the national economy will tend to be better off. However, this view assumes dynamic gains and ignores adjustment costs associated with the claim that OEMs and component producers are adversely affected in terms of losses of production and consequently lower employment levels when tariffs are eliminated.

It would be useful to undertake a similar quantitative analysis on the South African motor and components sector to provide policymakers with an idea of the estimated benefits and costs to vehicle buyers, domestic assemblers, component producers and the aggregate economy. However, as mentioned earlier this will not be pursued in this study.

Returning to the examination of the current version of the MIDP, the following section attempts to consider the likely effects of the revised programme on the South African motor industry, particularly in terms of automotive export performance, production and employment in the context of international experiences, especially Australia's experience.

4.6 LIKELY EFFECTS OF THE CURRENT VERSION OF THE MIDP ON THE SOUTH AFRICAN MOTOR INDUSTRY

This section attempts to explore the combined effect that the reduction of tariff rates and export credits, the introduction of the new DFA scheme, and the elimination of the SVI might have on the South African automotive industry in the 21st century.

As protection levels and government support measures continue to fall it seems evident (at first sight) that there might be a significant reduction in automotive exports (and also – rising imports, falling production and employment levels). However, the assumption that the removal of trade barriers, particularly a reduction in tariffs, adversely affects export expansion is not firmly established.

The assumption receives some support for the experience of third world exporters. In the past relatively high tariff rates were favoured when it came to export enhancement. Developing economies such as South Korea, India and Brazil, which experienced relatively high export growth rates, also enjoyed (at least in the early stages) significant protection levels and considerable state intervention and support.

On the other hand, more recently, since the inception of the Button Car Plan in Australia, as tariffs were falling CBU exports increased significantly from 2,500 units in 1985 to 39,500 units in 1996. Between 1990 and 1996, the value of automotive exports rose significantly by 73 per cent, while imports rose by 23 per cent in nominal value terms (Sidorenko and Sarfundin, 1998:9). It is important to note that export support schemes (EFS) played a substantial role in fostering Australian export expansion. However, the EFS will be abolished form 1 January 2005 when the new ACIS is implemented (will be discussed in section 4.7). Similarly, as South Africa commits to WTO obligations tariffs will be lowered (see table 4.1) and export subsidies (IEC) will most likely eventually be discontinued. The elimination of export subsidies and allowances (DFA and

SVI), and the reduction of tariff rates simultaneously might well have an adverse impact on export expansion certainly in the short run.

On the other hand, a more phased and gradual process of removal of supports and tariffs is more likely to ensure a successful long run transition to a globally competitive automotive industry. In the long run exports are likely to rise substantially, as OEMs and component producers are increasingly exposed both to global competition and to the opportunities provided by the strategies of their overseas parent companies (such as intra-firm technical and marketing agreements, technology-sharing arrangements, etc).

This part of the study considers the likely outcomes of the various policy instruments of the current MIDP. It can be expected that lower protection levels together with the new DFA volume-based incentive will eventually lead to rationalization of the domestic industry, both in terms of a reduction in vehicle models and possibly firms. Through price effects, lowering tariffs and export credits will lead to higher CBU imports especially of low-volume models. In addition, as consumer preferences become increasingly diverse there will be further reasons for fully built-up imports to rise. It is also plausible to assume that localization (local content by value) of motor vehicles produced domestically will tend to be lower than the present levels given the flexible sourcing and competitive pricing of imported automotive components as a result of lower tariff rates. Overall total motor industry imports will tend to increase dramatically with trade in both components and CBUs. Together with the continued weakening of the domestic currency, and hence automotive import products becoming more expensive, the automotive trade balance will most likely widen. On the other hand, it provides an opportunity for local firms to increase domestic production.

There is some speculation based on the projection of the above tendencies that South Africa might become a full assembler of CBUs, importing all major motor components. If South African OEMs were to end up exclusively assembling motor cars from CKD sets the consequences would be serious and far-reaching

– loss of industry employment and automotive expertise. Automotive expertise – relating to the fabrication of a large range of more-and-less sophisticated automotive components – has been acquired and developed locally. We have to some extent acquired engineering and technological capacity and familiarity with international quality requirements. It seems possible that this accumulation of knowledge and capacity will be lost.

There are some further negative factors in the foreseeable future, particularly in the short run, falling output and employment, and others, which will be considered in this section. Long run prospects for the South African motor sector will be considered in chapter 6.

It is possible to find parallel evidence for this scenario by returning to the Australian case. In the past government assistance measures in Australia included tariffs, import quotas, duty concessions, EFS, and so on. As already stated, over recent years tariffs have fallen and local content and import quotas have been terminated, especially since the implementation of the Button Car Plan in 1985. In the years to follow tariffs will continue to fall and the EFS will be discontinued. The reduction of tariffs has to an extent increased global competition, increased productivity and ultimately led to improved automotive industry performance. Australia's auto industry's output increased by 9 per cent in real value terms between 1986/87–1995/96 (Sidorenko and Sarfundin, 1998:2-5). According to industry authorities productivity levels in Australian automotive manufacturing have improved by 50 per cent. Despite these achievements there have been (none the less) plant closures, relocation of production facilities and evidently reductions in employment levels following trade liberalization and increased global competition. Similarly to the South African industry, Australia's automotive industry employment is geographically concentrated, that is, vehicle production is concentrated in certain regions (Victoria and South Australia). Recent events have created fears that employment levels and accumulated skills in any of these regions will be negatively impacted upon and might even be lost as trade liberalization progresses. To some extent these fears has been realized – for example, the

recent closure of Nissan's plant in Clayton and Victoria, and the reduction in Ford's workforce in Geelong and Broadmeadow due to increased productivity (Sidorenko and Sarfundin, 1998:6).

Furthermore, a study by Monash University's Quality Management Research Unit estimates that the tariff reduction programme and the phasing-out of export assistance schemes might have the effect of reducing local production, increasing motor car prices by 23 per cent and national unemployment by 25 per cent (Harkess, 2000:1). Although the impact of eliminating export assistance measures (EFS) is unclear, it may nevertheless contribute to higher vehicle prices because OEMs and component manufacturers will effectively not be subsidized, which in the past contributed to offsetting import costs, and hence production costs.

In South Africa we can expect affordable and fuel-efficient CBU imports, especially from developing countries, such as Malaysia's Proton or India's Maruti to enter the domestic market in the future. Already in Australia, Malaysia's Proton is increasingly being imported (3,612 units in 1997/1998). The impact of the entrance of CBUs on domestic production may become even more strained. It can therefore be expected that the unemployment situation will tend to become more severe as tariffs drop further and domestic production fall. Employment levels in both assembly and component industries have already dropped significantly over recent years (see table 4.7 and figure 4.3). OEMs and component suppliers will be under substantial pressure to raise productivity levels, minimize costs and compete internationally. Evidently, inefficient firms will be forced to exit the industry, which will lead to the rationalization of firms in the automotive sector. This might lead to plant closures and falling production, which in turn will reduce employment levels.

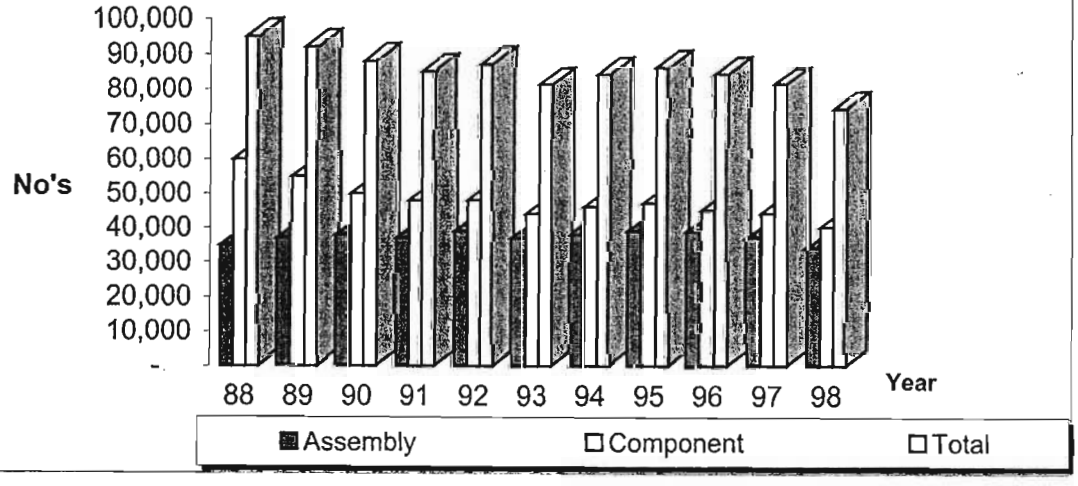
Table 4.7 and figure 4.3 show employment levels in the motor assembly and component industries for the period 1988 to 1998.

Table 4.7 Average Industry Employment Levels: Motor Vehicle and Component Industries 1988–1998

Year	Assembly Industry	Component Industry	Total
1988	35,000	60,000	95,000
1989	37,000	55,000	92,000
1990	38,000	50,000	88,000
1991	37,000	48,000	85,000
1992	39,000	48,000	87,000
1993	37,000	44,000	81,000
1994	38,000	46,000	84,000
1995	39,000	47,000	86,000
1996	39,000	45,000	84,000
1997	37,000	44,000	81,000
1998	34,000	40,000	74,000

***Source*: MITG (1994:20), NAAMSA (1999:5)**

Figure 4.3 Average Industry Employment Levels: Motor Vehicle and Component Industries, 1988-1998



***Source*: Compiled from MITG (1994:20), NAAMSA (1999:5)**

Employment levels fell from about 95,000 in 1988 to 84,000 in 1994, during Phase VI and fell further under the MIDP to 74,000 by 1998 (see table 4.7 and figure 4.3). As trade liberalization progressed, employment levels in the motor sector have been adversely affected. Over the period 1990–1994, employment in the sector grew negatively at an average annual rate of 0.4 per cent[10] (Tsikata, 1999:71). This fall was contracted in the components sector. A majority of the manufacturing sub-sectors experienced even poorer growth rates over the period in question, including metal products (-3.1 per cent), machinery and equipment (-4.9 per cent) and basic iron and steel (-6.4 per cent) – a fact which draws attention to the recession of 1990–1992.

A more optimistic view is that motor sector output and employment in South Africa might not be as adversely affected as is commonly supposed, if the domestic production and sale of new auto's remain at least at current levels (in the region of 300,000 units) and OEMs and component suppliers increase production for exporting and seek new export contracts in an attempt to further expand their export markets. In other words, producing auto's and components for the export market will essentially contribute toward total automotive production (production for domestic market and export market), and thus maintain employment levels in the motor sector at least in the short term.

It is important to note that the success of future automotive policy, which involves reduced protection and limited state assistance, will most probably be reliant on (1) suitable microeconomic reforms, such as labour assistance programmes – training of retrenched workers in other areas within the automotive sector (where there is a need) and also in other sub-sectors of manufacturing and trade, and (2) a stable macroeconomic environment to ensure national growth and development.

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[10] From Tsikata (1999:71), CSS staff estimates.

Returning to the export performance of the motor industry, section 4.7 provides a somewhat detailed account of this, highlighting the significant export growth rates attained during the late 1980s through to the 1990s, and hence suggesting that these substantial growth rates were mainly attributable to industry-specific policy (and associated positive spin-offs) rather than the economy-wide influences.

4.7 EXPORT PERFORMANCE OF THE MOTOR INDUSTRY UNDER THE MIDP

The South African motor industry has registered strong export growth rates in both automotive components and CBUs in recent years (see tables 3.4 to 3.6, 4.9 to 4.11 and figure 4.4). This section is parallel to section 3.4 in the previous chapter and determines and presents export values of automotive products (HS 8-digit data) under the MIDP (1995–1998). Furthermore, this section attempts to compare the performance of automotive exports under the MIDP with that of Phase VI of the local content progamme. It would seem that, based on the average annual growth rates, automotive exports grew relatively faster under Phase VI of the local content programme than under the MIDP in nominal Rand, constant Rand and constant US dollar terms. In real Rand terms, total automotive exports grew at an average annual rate of 28 per cent p.a. over the Phase VI period and 23 per cent p.a. over the 1995–1998 period, in which the MIDP was in operation. Moreover in real US dollars[11], the average annual growth rate for total Phase VI exports was 30 per cent p.a. compared to the 13 per cent p.a. growth rate achieved under the MIDP (see tables 4.9 to 4.11).

[11] The large difference between the export rates under the MIDP and Phase VI measured in constant US dollars will not be pursued in this study, but it should be noted. Presumably the real exchange rate of the Rand with the US dollar fell in the 1995-1998 period.

Table 4.8 Summary of Comparative Automotive Export and GDP Growth Performance, and Automotive Export Share in Manufacturing: Phase VI and the MIDP

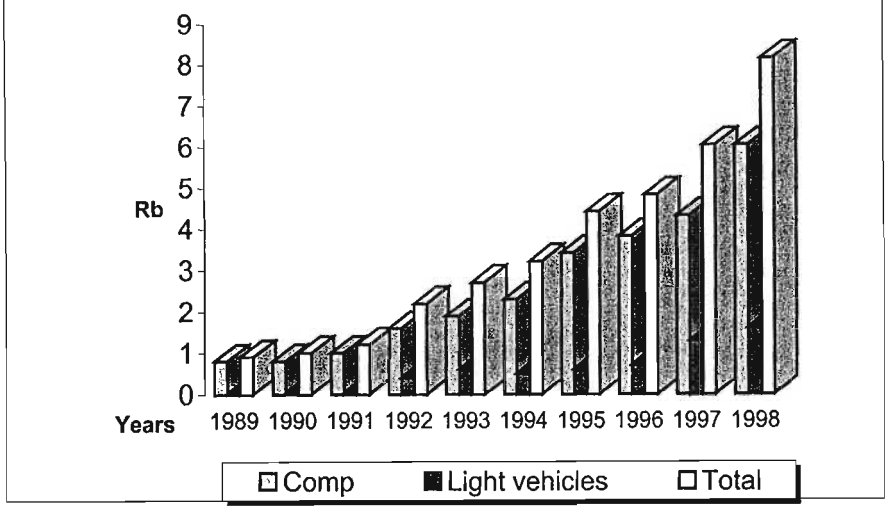
	Phase VI Period (1989–1994) (%)	MIDP Period (1995–1998) (%)
Nominal Rands	40	30
Constant Rands	28	23
Constant US Dollars	30	13
GDP growth, constant 1995 prices	0.2	2.4
Motor exports % of total manufacturing exports[a]	7.4 (1993) ranked 5th	3.7 (1996) ranked 9th

***Source*: Compiled**

Note: [a] Two different data sets were used to compare the motor industry's export share in total manufacturing exports for 1993 and 1996. Figure for 1993 was calculated from IDC (1995) SIC data and figure 1996 was taken from Roberts (1998:42), IDC (1996) CSS data.

Table 4.8 provides a summary of the comparative performance of motor industry exports under Phase VI and the MIDP, including the motor sector's share in total manufacturing exports (1993 and 1996), and the growth of the economy during the operation of these two programmes. Also, figure 4.4 illustrates South Africa's automotive export performance over the period 1989 to 1998 in constant Rand billions.

Figure 4.4 Automotive Industry Exports in Constant Rands (Rb), 1989-1998



***Source*: Compiled from TIPS (1999)**

From the figure above, it can be seen that the exportation of light vehicles were minimal in the 1980s, but increased dramatically from the early 1990s, hence the high export growth rate attained under Phase VI (see also table 3.5). As already stated, there was a substantial increase in the number of export contracts and investments undertaken by OEMs in terms of CBU export production under the export facilitation of Phase VI, which also continued during the MIDP. Similarly, the exportation of automotive components increased dramatically in recent years. Of the industry's total automotive component output in 1997, the exportation of components accounted for 24 per cent.

On the components side, tables 4.9, 4.10 and 4.11 outlines the various categories of automotive components exported, also providing values and growth rates. Main export destinations include Australia, North America, UK, Europe, Germany and Zimbabwe[12]. In addition, the German market absorbs the largest share of South African motor export components primarily because of the strong presence of German automakers (VW, Daimler Benz and BMW) in the South African car market.

[12] Export destinations for both CBUs and components.

Many domestic firms are establishing technology-sharing arrangements with European, Japanese and American component and system suppliers (AIDC, 2001:4), thus allowing them access to sophisticated and updated technologies so that they may become globally competitive. In recent years there has been a considerable rise in foreign investments in the motor sector as well as international integration into international firms corporate strategies, which has contributed greatly to export market access and evidently export expansion of automotive products.

This part of the study provides a brief sketch of the automotive exports, both components and vehicles, especially in terms of foreign investments undertaken. The incentives of the MIDP, thus prompted TNCs to enter the domestic market and expand export production. Later in this section consideration is given to motor industry exports in the context of the domestic economic environment, in particular the manufacturing sector.

Various automotive components, such as batteries, catalytic converters, stitched leather covers, automotive seats and silencers/exhaust pipes grew substantially more slowly under the MIDP than under Phase VI in real terms – which contributed significantly to the lower export growth rates registered under the MIDP (see table 3.5, column 8 and table 4.10, column 6). The catalytic converter industry has been growing rapidly, especially under Phase VI (124 per cent p.a.) but slowed down considerably under the MIDP (48 per cent p.a.). However, recent new investments include – Degussa-Huls (R40 million investment), US Corning company (R 180 million plant) and Asec (a subsidiary of Detroit-based Delphi Auto Systems), which are planning to invest R30 million in a catalyst manufacturing plant (ECDC, 2001b). Another major boost to the catalytic converter industry is the contract awarded to Delta Motor Corporation in conjunction with Tenneco Automotive and Degussa Catalyst – the contract is worth R2.3 billion, a six year contract to supply Opel assembly plants in Germany and Spain (ECDC, 2000b).

Table 4.9 Automotive Industry Exports Current Rands, 1995–1998

COMPONENTS	1995	1996	1997	1998	GROWTH RATE % 1995–1998
Air Conditioners	5,235,253	2,943,134	5,989,429	7,708,854	13.77
Alarm systems	17,471,140	16,736,400	7,627,683	-	(24.14)
Automotive tooling	483,810,915	281,232,211	323,913,992	236,427,696	(21.23)
Axles (driving/non-driving)	3,411,560	3,599,042	3,504,958	13,777,413	59.25
Batteries	51,477,760	61,848,143	88,192,189	79,006,989	15.35
Body parts/panels	30,950,650	38,549,894	38,076,974	30,489,624	(0.50)
Brake parts	23,555,664	30,594,895	39,115,995	76,396,032	48.02
Car radios	10,452,887	3,785,675	28,405,489	47,164,838	65.24
Catalytic converters	387,973,588	484,799,998	697,500,211	1,484,678,571	56.14
Clutches & shaft couplings	17,665,184	21,637,462	33,633,520	47,018,383	38.59
Engines	10,535,249	85,753,122	54,351,080	134,771,628	133.88
Engine parts	95,745,376	143,923,536	195,634,522	318,293,355	49.25
Filters	10,736,258	42,422,841	52,399,843	68,984,541	85.91
Gaskets	3,122,686	4,116,023	6,281,060	4,009,369	8.69
Gauges/instruments/parts	22,532,847	28,307,801	29,016,729	30,631,434	10.78
Gear boxes	549,982	1,629,379	2,795,303	5,409,620	114.26
Glass	42,203,518	71,020,717	105,096,925	110,944,308	38.01
Ignition/starting equipment	15,013,843	38,939,346	29,628,738	37,654,061	35.86
Jacks	13,091,470	20,632,307	24,474,747	13,141,101	0.13
Lighting/signalling/wiping equipment	7,969,727	9,919,406	9,350,272	8,692,636	2.94
Radiators	-	-	-	-	-
Road wheels/parts	152,939,644	227,414,051	321,160,714	430,864,291	41.23
Seats	5,443,480	2,097,001	2,686,517	37,235,517	89.83
Stitched leather covers	994,832,567	1,258,860,052	1,406,894,104	1,852,980,426	23.04
Seatbelts	546,971	67,994	697,709	3,217,897	80.52
Shock absorbers	24,422,486	53,475,768	48,543,248	61,915,706	36.35
Silencers/exhaust pipes	75,594,801	169,697,811	240,821,360	488,497,751	86.26
Springs	12,568,983	19,220,205	22,322,073	38,222,420	44.88
Steering wheels/columns/boxes	2,281,573	1,473,897	3,491,032	9,349,040	60.02
Transmission shafts/cranks	23,588,212	38,540,889	4,322,096	-	(43.20)
Tyres	216,840,337	296,197,780	330,344,830	463,191,295	28.79
Wiring harnesses	42,539,674	92,147,539	135,310,393	206,049,032	69.20
Other components	609,907,768	531,776,854	652,349,995	899,260,684	13.82
TOTAL COMPONENTS	**3,415,012,053**	**4,083,361,173**	**4,943,933,730**	**7,245,984,512**	**28.50**
LIGHT VEHICLES	**606,264,145**	**743,864,565**	**1,430,679,254**	**1,871,602,024**	**45.61**
MED/HEAVY VEHICLES	**333,768,737**	**311,766,736**	**460,243,837**	**481,750,746**	**13.01**
TOTAL MIDP EXPORTS	**4,355,044,935**	**5,138,992,474**	**6,834,856,121**	**9,599,337,282**	**30.14**

***Source*: Compiled from HS 8-digit level data (TIPS 1999)**

Table 4.10 Automotive Industry Exports Constant 1995 Rands, 1995–1998

COMPONENTS	1995	1996	1997	1998	GROWTH RATE % 1995–1998
Air Conditioners	5,251,006	2,760,914	5,244,684	6,521,873	7.49
Alarm systems[c]	17,523,711	15,700,188	6,679,232	-	(27.50)
Automotive tooling	485,266,715	263,820,085	283,637,471	200,023,431	(25.58)
Axles (driving/non-driving)	3,421,825	3,376,212	3,069,140	11,656,018	50.46
Batteries	51,632,658	58,018,896	77,226,085	66,841,784	8.99
Body parts/panels	31,043,781	36,163,128	33,342,359	25,794,944	(5.99)
Brake parts	23,626,544	28,700,652	34,252,185	64,632,853	39.86
Car radios	10,484,340	3,551,290	24,873,458	39,902,570	56.13
Catalytic converters	389,141,011	454,784,238	610,770,763	1,256,073,241	47.79
Clutches & shaft couplings	17,718,339	20,297,807	29,451,419	39,778,666	30.94
Engines	10,566,950	80,443,829	47,592,890	114,019,990	120.98
Engine parts	96,033,476	135,012,698	171,308,688	269,283,718	41.01
Filters	10,768,564	39,796,286	45,884,276	58,362,556	75.65
Gaskets	3,132,082	3,861,185	5,500,053	3,392,021	2.69
Gauges/instruments/parts	22,600,649	26,555,160	25,408,694	25,914,919	4.67
Gear boxes	551,637	1,528,498	2,447,726	4,576,667	102.44
Glass	42,330,510	66,623,562	92,028,831	93,861,513	30.40
Ignition/starting equipment	15,059,020	36,528,467	25,944,604	31,856,228	28.37
Jacks	13,130,863	19,354,885	21,431,477	11,117,683	(5.40)
Lighting/signalling/wiping equipment	7,993,708	9,305,259	8,187,629	7,354,176	(2.74)
Radiators[b]	-	-	-	-	-
Road wheels/parts	153,399,844	213,334,007	281,226,545	364,521,397	33.44
Seats	5,459,860	1,967,168	2,352,467	31,502,129	79.36
Stitched leather covers	997,826,045	1,180,919,373	1,231,956,308	1,567,665,335	16.25
Seatbelts	548,617	63,784	610,954	2,722,417	70.57
Shock absorbers	24,495,974	50,164,886	42,507,222	52,382,154	28.83
Silencers/exhaust pipes	75,822,268	159,191,192	210,876,848	413,280,669	75.99
Springs	12,606,803	18,030,211	19,546,474	32,337,073	36.89
Steering wheels/columns/boxes	2,288,438	1,382,643	3,056,946	7,909,509	51.19
Transmission shafts/cranks[b]	23,659,190	36,154,680	3,784,673	-	(45.72)
Tyres	217,492,815	277,859,081	289,268,678	391,870,808	21.68
Wiring harnesses	42,667,677	86,442,344	118,485,458	174,322,362	59.86
Other components	611,742,997	498,852,583	571,234,672	760,795,841	7.54
TOTAL COMPONENTS	**3,425,287,917**	**3,830,545,190**	**4,329,188,905**	**6,130,274,545**	**21.41**
LIGHT VEHICLES	**608,088,410**	**697,809,160**	**1,252,783,935**	**1,583,419,648**	**37.58**
MED/HEAVY VEHICLES	**334,773,056**	**292,464,105**	**403,015,619**	**407,572,543**	**6.78**
TOTAL MIDP EXPORTS	**4,368,149,383**	**4,820,818,456**	**5,984,988,460**	**8,121,266,736**	**22.96**

***Source*: Calculated from HS 8-digit level data, TIPS (1999)**

Note: [a] Figures deflated by SA PPI, 1995 base year.

[b] Figures for radiators not included in tables 4.9, 4.10 and 4.11.

[c] Growth rates for alarm systems and transmissions shafts calculated for years 1995-1997 in tables 4.9, 4.10 and 4.11.

Table 4.11 Automotive Industry Exports Constant 1995 US Dollars, 1995–1998

COMPONENTS	1995	1996	1997	1998	GROWTH RATE 1995–1998
Air Conditioners	1,442,218	669,192	1,270,388	1,397,780	**(1.04)**
Alarm systems	4,812,986	3,805,422	1,617,869	-	**(42.02)**
Automotive tooling	133,281,244	63,944,896	68,703,763	42,869,399	**(31.48)**
Axles (driving/non-driving)	939,824	818,329	743,419	2,498,140	**38.52**
Batteries	14,181,201	14,062,660	18,706,000	14,325,657	**0.34**
Body parts/panels	8,526,350	8,765,244	8,076,315	5,528,421	**(13.45)**
Brake parts	6,489,164	6,956,484	8,296,696	13,852,235	**28.76**
Car radios	2,879,583	860,764	6,024,945	8,551,994	**43.74**
Catalytic converters	106,879,776	110,230,921	147,943,252	269,203,988	**36.06**
Clutches & shaft couplings	4,866,442	4,919,797	7,133,836	8,525,439	**20.55**
Engines	2,902,272	19,498,031	11,528,133	24,436,979	**103.44**
Engine parts	26,376,137	32,724,472	41,495,052	57,713,395	**29.82**
Filters	2,957,647	9,645,852	11,114,266	12,508,373	**61.72**
Gaskets	860,244	935,877	1,332,244	726,984	**(5.46)**
Gauges/instruments/parts	6,207,396	6,436,458	6,154,592	5,554,134	**(3.64)**
Gear boxes	151,510	370,478	592,898	980,880	**86.38**
Glass	11,626,313	16,148,265	22,291,579	20,116,577	**20.05**
Ignition/starting equipment	4,136,045	8,853,795	6,284,402	6,827,487	**18.18**
Jacks	3,606,466	4,691,250	5,191,215	2,382,763	**(12.90)**
Lighting/signalling/wiping equipment	2,195,517	2,255,415	1,983,239	1,576,161	**(10.46)**
Radiators	-	-	-	-	**-**
Road wheels/parts	42,132,133	51,708,045	68,119,779	78,124,914	**22.85**
Seats	1,499,581	476,804	569,824	6,751,596	**65.12**
Stitched leather covers	274,058,558	286,232,061	298,409,214	335,984,994	**7.03**
Seatbelts	150,681	15,460	147,988	583,474	**57.03**
Shock absorbers	6,727,958	12,159,000	10,296,264	11,226,642	**18.61**
Silencers/exhaust pipes	20,825,014	38,584,872	51,079,404	88,575,093	**62.02**
Springs	3,462,530	4,370,175	4,734,622	6,930,542	**26.03**
Steering wheels/columns/boxes	628,533	335,126	740,465	1,695,181	**39.20**
Transmission shafts/cranks	6,498,130	8,763,197	916,738		**(47.94)**
Tyres	59,735,630	67,347,678	70,067,776	83,986,491	**12.03**
Wiring harnesses	11,718,918	20,951,956	28,700,005	37,361,098	**47.18**
Other components	168,018,669	120,912,237	138,366,668	163,055,201	**(0.99)**
TOTAL COMPONENTS	940,774,670	928,450,213	1,048,632,852	1,313,852,014	**11.78**
LIGHT VEHICLES	167,014,916	169,135,471	303,454,162	339,361,488	**26.66**
MED/HEAVY VEHICLES	91,947,310	70,887,654	97,619,999	87,351,717	**(1.69)**
TOTAL MIDP EXPORTS	1,199,736,897	1,168,473,337	1,449,707,013	1,740,565,219	**13.21**

***Source*: Calculated from HS 8-digit level data, TIPS (1999)**

Note: Figures deflated by US PPI, 1995 base year and exchange rates (SARB 2000, SSA 2000).

Also, Renault in Europe is to purchase 14 million catalytic converters worth a value of R11 billion from South Africa sourced from six catalytic manufacturers over a six-year period commencing in February 2001 until 2007 (ECDC, 2000c). The exportation of batteries grew dramatically at 90 per cent p.a. and grew much more slowly during the MIDP period at an annual average growth rate of only 9 per cent in real terms. However, recently, Willard Batteries invested R30m in a new battery plate plant in Port Elizabeth to boost export capacity. The group has already acquired 15 per cent of the automotive replacement battery market in the UK (van der Walt, 1998:28).

On the other hand, components such as engines grew at an average annual export growth rate of 12 per cent p.a. over the 1989–1994 period and increased dramatically to 121 per cent p.a. over the 1995–1998 period in constant prices. This is partly attributable to Ford Motor Corporation's exportation of the 4 cylinder RoCam engines world-wide (AIDC, 2001:3) also, SAMCOR has also become a world-wide supplier of Ford engines – an export order worth R1.6 billion to be supplied over an eight year period. VWSA also exports body and engine parts, and catalytic converters to countries such as Argentina, Spain, Belgium and Germany (Auto Analysis, 2000).

Other export components such as gearboxes, axles and shock absorbers grew dramatically during the period 1995–1998 when compared to the period 1989–1994. The export growth rate for gearboxes increased from 24 per cent p.a. to an astounding 102 per cent p. a. in real terms. Axles grew negatively during 1989–1994 (-13 per cent p.a.) and grew annually by 50 per cent p.a. for the period 1995–1998. The exportation of shock absorbers grew 8 per cent annually (1989–1994) and 29 per cent p.a. (1995–1998).

Tyre exports grew relatively faster during the MIDP (22 per cent p.a.) than during Phase VI (18 per cent p.a.). Domestic tyre manufacturers Goodyear and Bridgestone are to integrate into international firm's manufacturing networks to further enhance exports. LuK Africa exports 50,000 clutches to Audi AG Germany on an annual basis (EastCape Online, 1998). Delta's exportation of

components includes exhaust systems and catalytic converters produced by a Delta subsidiary (EastCape Online, 1998) and it is also an exporter of leather seats (formed an alliance with General Motors) to its European operations. Other export orders include a R450m contract for the supply of wiring harnesses in conjunction with Wiring Harnesses Botswana (ECDC, 2000b). The exportation of wiring harnesses grew substantially under the MIDP period (60 per cent p.a.). At present Delta is exporting R500m worth of motor components and CBUs per annum. Also, BWM SA Trim will contribute extensively toward total motor industry exports – it will be exporting R1billion worth of automotive leather seating and trim sets (Business Editor, 2000). Nissan South Africa exports suspension parts to a Nissan plant in Thailand, including other components to Nissan Diesel in Japan. Section 5.4 further discusses the local component producing sector in an international framework.

Turning to CBU exports – a lower average annual growth rate for CBU exports were registered for the MIDP period (1995–1998), which also contributed to the overall lower export growth rate experienced by the motor sector as a whole (23 per cent p.a.). CBU exports by OEMs include – Delta exports built-up vehicles, the half-ton Corsa Utility, to neighbouring states. Nissan exports over 5,000 units of CBUs and SKD units to its assembly facility in Zimbabwe. Daimler Chrysler invested R1.3 billion in upgrading its manufacturing plant in East London to produce the Mercedes C Class 4-door right-hand drive sedans exclusively for the world market (ECDC, 2001b). VWSA exports 68,000 new generation Golf 4 vehicles for the UK market and the production is expected to increase to 116,000 units next year (Robertson, 2001). VWSA's exports accounted for nearly 60 per cent of total South Africa vehicle exports in 1999 (Mutikani, 2000). The Audi A4 range built at the VWSA plant is also exported to Australia. Toyota SA exports stamping equipment for its Corolla range to Turkey and CBUs to African countries (Hutson, 1997).

All local OEMs are part of TNCs' global networks. These networks are created in terms of their corporate strategies and led to substantial FDI inflows. This process has contributed significantly to the export success of the South African motor industry.

What contribution did industry-specific policy make to automotive export growth? It is noteworthy that the export subsidy – that is, the benefit from the IEC – was lower under Phase VI than under the MIDP. That is, under Phase VI the import to export ratio was 50c to R1, while under the MIDP it was R1 to R1. Effectively the export subsidy was higher under the MIDP. The IEC will be lowered under the current version of the MIDP and is expected to cease as South Africa conforms to multilateral trading arrangements under the WTO, since such schemes are GATT-illegal. If one takes into account the compound average annual export growth rates of the automotive sector and the experiences of Australia and India[13], it is plausible to suggest that with the lowering of tariffs and the export subsidy (IEC), exports are likely to fall in the short term but not dramatically, and may be expected to rise in the longer term.

Can one place the overall export performance of the motor industry in the context of the total manufacturing exports? Presently, we were not able to rank the motor industry in relation to other manufacturing sub-sectors using SIC sectoral manufacturing data for the MIDP period (as was done with Phase VI in section 3.4) because the data provided by the manufacturing data series contains data only up to 1996 (only two years into the MIDP). This will however be done in a follow-up study at later stage. As I have already indicated, the motor industry's export share in total manufacturing exports during Phase VI was 7.4 per cent (ranked 5th). When considering that the industry's export share dropped to 3.7 per cent (ranked 9th) by 1996, but that total MIDP exports grew significantly at 23 per cent per annum in real terms, it may still be argued that industry-specific policy might well explain the strong export performance of the sector. Thus, even though total automotive exports grew strongly under the

[13] Panangariya (2000:18) maintains that even if export subsidies were to be reduced, export expansion occurred. His argument is based on India's strong export performance during the 1980s when export subsidies were reduced.

MIDP, but not as fast (5 per cent p.a.) as under Phase VI – the growth rate remains significant.

In a domestic macro-economic context, there is no doubt that economic growth is a precondition to stimulate consumer spending and domestic demand, and in turn local production. The South African economy has been growing minimally at an annual growth rate of 0.6 per cent in 1998, 1.2 per cent in 2000[14] and is expected to grow at 3 per cent in 2001[15]. The limited GDP growth rates as forecast above, together with possibly higher interest rates and rising fuel prices will undoubtedly dampen new vehicle sales and local production in the future unless present export growth rates are at least maintained. Given the GDP growth forecast as well as the effects of trade liberalization and globalization, local OEMs and component manufacturers need to increasingly strengthen their global ties with TNCs.

The following section, 4.8, provides an outline of Australia's automotive policies, (1) the Button Car Plan (1985) and (2) the new Automotive Competitiveness Investment Scheme (ACIS) (2000), in an attempt to discuss possible effects the current version of the MIDP (which is based on the Button Car Plan) might have on the South African motor industry and whether the (ACIS) is likely to be a policy option for South Africa post-MIDP.

[14] World Bank (2000).
[15] SB (1999).

4.8 THE AUTOMOTIVE INDUSTRY PROGRAMMES OF SOUTH AFRICA AND AUSTRALIA

Given the inconclusiveness of the discussion in section 4.6, this section will highlight the features of Australia's Button Car Plan and attempt to explain some of its effects on the Australian automotive industry in order to establish some of the probable effects the MIDP might have on the South African motor industry on the basis of a parallel case study. It will also provide an outline of the basic principles of Australia's new Automotive Competitiveness and Investment Scheme (ACIS), since it might be considered for South Africa in the future.

In many respects, South Africa's motor industry policy is based on Australia's Button Car Plan[16](Duncan, 1994:187). This car plan was introduced in the mid-1980s and will expire on 31 December 2000. The main features include an export facilitation scheme (EFS), a duty-free allowance (DFA) and the gradual reform of tariffs, which are features shared with South Africa's MIDP[17].

Under Australia's Button Car Plan, the automotive industry operates an export facilitation scheme (EFS) where OEMs and component manufacturers earn compensatory import tariff rates as a result of their export efforts. In addition, OEMs are able to import a certain value worth of motor parts duty-free depending on their export values (Mascitelli, 1999:14). EFSs, which in effect operate as export subsidies, are not consistent with WTO regulations. ASEAN and Latin American countries, South Africa and Australia, are in the process of gradually reducing, and will later abolish, their export support schemes. Under the Mid-Term Review of the MIDP the IEC will be phased down gradually, but not completely.

[16] Named after Senator Button who was the former Minister of Industry during the mid-1980s (Mascitelli, 1999:14)

[17] Many developing countries adopted similar programmes to develop their automotive industries, such as the Philippines Car Development Programme (CDP), etc.

Table 4.12 Australia's Automotive Market in Current US$ (millions)

	1997	1998	1999	Average Growth Rate %
Import Market	3, 577.8	3,851.8	4,426	15
Local Production	2,005.8	2,200.2	2,400	8
Export Market	862.3	980.9	1,080	21
Total Market	4,721.3	5,050.0	5,550	8

***Source*: Mascitelli (1999:5)**

The success of Australia's Button Car Plan is reflected (see table 4.12 above) in the growth of local production, imports and particularly the export market, which grew at an average annual rate of 21 per cent (current prices US$) between 1997 and 1999. In 1996 Australia exported mainly to New Zealand, NAFTA and the Middle Eastern markets (Sidorenko and Sarfundin, 1998:3). There are four OEMs (Ford Australia, General Motors, Mitsubishi and Toyota) in Australia producing in excess of 400,000 units of motor vehicles annually. Australian OEMs tend to be more competitive in producing the upper and medium size category of passenger cars (such as the Ford Falcon and Holden Commodore, which are locally produced models). Model rationalization has been successful in that 13 vehicle models have been reduced to 6. Productivity levels have improved dramatically. According to Schroder (from Monash University), the Button Car Plan has improved the international competitiveness of the local industry but it did not do enough in terms of technological development and innovation.

Many auto industry sources (local) believe that the Australian automotive industry is similar to South Africa's in terms of: size of the domestic market, manufacturing output especially generating employment[18], expertise in flexible low-volume production, among others. Thus, similar industry policies may be applicable to both countries.

[18] Australian automotive employment registered about 28,000 in assembly and 27,000 in the components industry in 1997 (APEC, 2000).

The MIDP models the Button Car Plan and (as mentioned above) it is expected that Australia's new Automotive Competitiveness and Investment Scheme (ACIS) will present a blueprint for South Africa when the MIDP expires in 2007. According to Black, Chairman of the Motor Industry Development Council, " . . . Australia's new Automotive Competitiveness and Investment Scheme might provide a model for South Africa"[19].

Australia's ACIS will be introduced in January 2001 and will run for five years until 31 December 2005. As already noted, tariff liberalization will continue according to a prescribed schedule, until 10 per cent is reached in 2005. The main objective of the ACIS is to provide transitional support to the domestic industry with the onset of the APEC[20] free-trade agreement in 2010. Effectively the ACIS will replace the EFS. The ACIS will offer duty credits to OEMs, component manufacturers, toolmakers, and engineering and design companies encouraging them to undertake new investments and research and development (R&D) projects and increase production. In other words, *the credits will be based on new investment and R&D expenditures and production volumes rather than exports as under the EFS.*

The ACIS will encourage automotive industry participants to diversify into producing smaller vehicles and environmentally efficient cars (global demand) and undertake investments in special projects – such as the new aXcess Australia's concept car[21], and so on. The Australian government envisages that OEMs and component producers would have developed their technological capabilities and productive capacity, and will have promoted innovation and secured export markets sufficiently by 2010 when the APEC free-trade agreement is in place.

The Australian government believes that the new ACIS will encourage firms to commit to the local industry in terms of long term investment projects based on

[19] Statement made at CAR conference at Auto Africa, 1998.
[20] APEC (Asia Pacific Economic Coperation) – member economies benefit from preferential tariff rates. ACIS is regarded as a transitional programme to allow Australia to become competitive in vehicle trade in relation to the Asia Pacific economies.
[21] Australia's aXcess concept car is entirely engineered, designed and built in Australia.

production targets and R&D activity. The ACIS was designed within the context of increased trade liberalization and globalization of the car industry to encourage international competitiveness of the local industry. A brief account of the key features of Australia's ACIS will be outlined here. Two sub-schemes will apply – One for PMVPs (passenger motor vehicle producers) and one for CMVPs (component motor vehicle producers). Automotive benefits consist of two parts, a DFA-type allowance and an investment incentive allowance [DALP (1999: 1-6) and DISR (1998:1-4)]:

(I) Duty-free concessions equal to 25 per cent will be applied to the production value of motor vehicles for the export market. Presently, duty-free entitlements of 15 per cent only apply to Australia – New Zealand production of motor vehicles. A bilateral Closer Economic Relations (CER) Trade Agreement exists between Australia and New Zealand.

(II) Duty-free credits may be earned for the production of engines and engine parts.

(III) Under the PMVP sub-scheme, OEMs may earn up to 10 per cent credit on investments in new productive capital assets and earn benefits for R&D investment on behalf of component producers or automotive engineering and designing firms. For components, 25 per cent of the value of investment in productive assets can be claimed and 45 per cent of the value of R&D investment.

The new ACIS is expected to contribute positively to Australia's automotive industry, and economy as a whole, especially in terms of encouraging long-term investment and job creation. The ACIS authority expects that automotive industry gains to PMVPs and CMVPs will not exceed AU$ 2 billion (an average of about AU$ 400 million per annum) over the period 2001 to 2005. In other words, forgone revenue to the Australian economy will be equivalent to AU$ 2 billion due to the proposed allowances (referred to above) offered to PMVPs and CMVPs under the ACIS over the five years. The value of assistance offered to individual firms under the ACIS will be restricted to 5 per cent (in any given year) of its domestic automotive sales based on the previous year. Running costs stemming from the ACIS are estimated to be AU$ 9.18 million over the five-year period of operation. New investments under the scheme are forecast to be in the region of AU$ 4 billion by 2005. In addition 5,000 jobs are expected to be generated as well as AU$ 6 billion worth of automotive exports by 2005.

PMVPs may participate in the scheme provided that they obtain membership into the scheme by producing and selling at least 30,000 units of vehicles in the previous year. Component producers also need to obtain membership into the CMVP sub-scheme by establishing contracts to produce automotive parts for either first tier suppliers or PMVPs. Eligibility for membership may also be obtained by producing automotive machine tools, developing designs and providing engineering support for Australian PMVPs.

In the light of the above discussions, it is interesting to note that South Africa's revised MIDP has already instituted a new production-based DFA, which is based on one of the principles of Australia's ACIS, that is, it imposes production volume targets encouraging OEMs to produce more so that they may qualify for the duty-free allowance. South African OEMs will most likely achieve higher production volumes through increasing productivity levels, acquiring technology capacity, upgrading manufacturing facilities, etc., which involves substantial investment expenditure. Despite similarities, it is very important to bear in mind the fact that there are a number of distinct differences between South Africa's and Australia's automotive sectors. Presently, there are seven OEMs in South

Africa and only four in Australia. Australia's domestic market is mature, and the economy experiences higher economic growth rates and levels of consumer spending and confidence, which stimulates vehicle sales and automotive output when compared to South Africa.

Although Anthony Black, Chairman of the Motor Industry Development Council, has stated that Australia's ACIS is a likely option for South Africa, the question to pose is whether it will be suitable for future motor industry policy in South Africa? In an attempt to contribute to this debate – a first step was to highlight the key features of the ACIS (as was done above). Further research is needed in this area, to determine what the likely effects would be on the South African automotive industry should this programme be adopted when the MIDP expires. By 2007, when the MIDP terminates, the ACIS would have been in operation in Australia for several years. This grants us sufficient time to draw lessons and adjust the programme to suit and possibly benefit the South African motor industry.

4.9 CONCLUSION

In summary, the MIDP has not been successful in achieving all the objectives outlined in section 4.2. The impact of the MIDP on the motor industry has been positive in some respects, particularly in the light of exportation of automotive products and its contribution to the trade balance in real terms, and declining real vehicle prices. The likely effects of the Mid-Term Review of the MIDP has been considered and hence we can expect rationalization of the industry – low-volume vehicle models will be discontinued and inefficient firms will leave. Possibly there will be a rise in competitively-priced CBU imports and technically-sophisticated components and a deteriorated automotive trade balance, a fall in automotive exports, falling output and employment levels in the short to medium term. However, a medium to longer-term projection might include an inflow of foreign investment, higher productivity and quality levels, rising production, exports and low-volume imports.

Export expansion in the automotive industry has been significant in recent years. Comparing the export performance of the motor sector under Phase VI (section 3.4) with that of the MIDP (section 4.7), using HS-8 digit tariff classification data – it was found that total motor industry exports grew 5 per cent p.a. faster under the Phase VI regime than under the MIDP in real terms. Also, when calculating the motor sector's export share in total manufacturing exports, it fell substantially from 1993 (7.4 per cent) to 1996 (3.7 per cent), as economy-wide trade liberalization increased. Thus one can suggest that the effects of industry-specific policy and its positive spin-offs, since the late 1980s (Phase VI) through to the 1990s (MIDP), were the primary reason for export enhancement of automotive products in the motor industry rather than trade liberalization in general.

Furthermore, it seems plausible to assume that South Africa might adopt a tariffs-only automotive regime in the future (long-term policy option) as tariffs continue to fall and state support measures are expected to be discontinued. Furthermore, tariffs are said to limit international competitiveness by restricting the increased utilization of automotive products at competitive world prices. As tariffs continue to fall over the next few years, the loss of consumer surplus will be reduced and national welfare will improve. On the other hand, lowering tariffs as required by the WTO, would adversely affect government tariff revenue in future. However, it is generally accepted that the national economic benefits that accrue from tariff liberalization will far outweigh the costs.

So far, we have focused on developments and changes to motor industry policy in South Africa from the early 1960s to the late 1990s, up to the revision of the Mid-Term Review of the MIDP, and have considered their likely effects on the South African motor industry in the 21st century. The following chapter shifts focus to look at recent developments in the international automotive economy. In particular, it considers the significance of corporate strategies of TNCs competing in an oligopolistic world industry for third world markets. Finally, in the light of the changing global environment, an attempt is made to consider what the implications might be for the South African motor industry.

CHAPTER 5

THE SOUTH AFRICAN AUTOMOTIVE INDUSTRY IN AN INTERNATIONAL CONTEXT

5.1 INTRODUCTION

The motor vehicle industries of South Africa and other emerging economies are being transformed from industries producing automobiles and components mainly for the domestic market to competitors in the global automotive industry. In this international industry, South Africa contributed less than 1 per cent (0.75 per cent) of world car production in 1996 – but it has nevertheless been ranked number 18 of the top 20 producing nations worldwide, coming after Brazil and India which were in 9th and 15th positions respectively (NAAMSA, 1999). In a world of rapid change there are many forces driving the global automotive industry, especially recent trends in innovation and transport technology, corporate strategies of TNCs and the restructuring of the supply value-chain, amongst others. Such global developments and increased trade liberalization (in the world automobile industry) will strongly influence, and pose challenges for, developing automotive economies – including the South African automotive industry – in the 21st century.

Influences governing the restructuring of the world automotive industry will be discussed in section 5.2. Also, in the same section (5.2), some international developments in the world automotive industry are considered, such as global excess capacity, increased consolidation among OEMs and component producers, especially merger and acquisition (M&As) activities through TNC corporate strategies and foreign direct investment, and innovation and technological advances in automobiles. The following section, 5.3 then provides an overview of the South African automotive industry, particularly in terms of ownership structure, new vehicle sales, investments, and other related aspects in the 1990s. Furthermore section 5.4 takes a closer look at the local component sector in the context of the changing role of global component

suppliers, particularly in terms of global supply-value chains and local firm-level competitiveness. Finally, in the light of the above issues, implications and challenges are considered for South African OEMs and component suppliers in section 5.5.

5.2 INTERNATIONAL DEVELOPMENTS IN THE WORLD AUTOMOTIVE ECONOMY

This section seeks to provide a sketch of international developments that have occurred in the global automobile industry as a result of increased trade liberalization and global competition over recent years. Preliminary discussions of events are given, and the probable impacts on developing nations, such as South Africa are highlighted. A brief look at what initiated the restructuring of the industry is provided in sub-section 5.2.1.

Transnational (TN) corporate strategies and foreign direct investment, in particular merger and acquisition (M&A) activities are increasing dramatically. The rising numbers of M&As and strategic partnerships – in the areas of transport technologies, R&D and production networks – have contributed substantially to higher levels of industry concentration in automobiles. Firms are constantly seeking strategies to keep open international markets, and at the same time access and expand market share, profitability, reduce costs, risks and uncertainties. In addition, intense competition in the automobile industry has led to the changing structure of the competitive environment for both vehicle builders and component manufacturers – oligopolistic international market structure. Industry boundaries are ever-changing, industry concentration increasing and barriers to entry expanding. Sub-section 5.2.2 discusses some of these issues and considers their implications.

The last sub-section 5.2.3 provides a short account of future transport technologies and research, and the growing application of advanced lighter-weight materials incorporated in the production of vehicles and automotive components. Industrialized nations are at the forefront of these activities,

however, some opportunities may exist for developing countries with relatively cheap skilled labour and an abundant supply of natural resources in the area of contract manufacturing (sub-contracting and external sourcing).

5.2.1 Restructuring the World Automobile Industry

Firstly, the need to restructure the global automotive industry came as a result of the rapid growth of the Japanese automotive industry which involved innovations in production technologies and flexible manufacturing operations, rising exports and increased overseas "transplants". With the onset of the 1973 oil crisis and the sharp rise in fuel prices, global consumer demands changed dramatically. Consumers preferred purchasing smaller fuel-efficient vehicles. In response, Japanese OEMs made it possible to produce a wide range of smaller fuel-efficient motor vehicles at lower prices and costs. As consumer demands changed, the Japanese adopted more flexible manufacturing methods (lean production and JIT[1] methods) in an attempt to accommodate more diverse and sophisticated vehicles that were produced on the basis of smaller volume production runs. Import restrictions fuelled the emergence of increased investments by Japanese TNCs in US and European markets. Japanese market share increased considerably in these markets during the late 1980s – contributing significantly to the changing structure of the industry and the expansion of Japanese TNCs' international systems of integrated production (ISIP).

Secondly, it is expected that there will be strong growth in vehicle production, new car sales and income levels registered in many free-trading and emerging markets (MERCOSUR, ASEAN, India, etc.). This is of special significance for the character of the world industry given that developed markets have already matured. World decentralization of motor vehicle manufacturing has been at the forefront of automotive restructuring – there has been a geographical shift away from the traditional automotive production regions (Western Europe and North

[1] JIT refers to the concept Just-in-time system – components are supplied just as they are required by OEMs, thus saving on inventory costs. JIT was pioneered by Toyota in Japan in the early 1980s (Law, 1991:15).

America) toward Japan and other emerging economies such as South Korea, Brazil, Mexico, and others.

Thirdly, and related to the above, it is predicted that world excess capacity will be well in excess of 20 million motor vehicle units in the next few years. Other global industry sources suggest that presently there exist 80 assembly plants in excess of the world market demand. Evidence suggests that global excess capacity normally results in intensive price wars accompanied with lower profit margins, plant closures, and other related matters. However, the global over-capacity argument might not be as serious as is commonly supposed. According to the World Bank, most of the developed markets such as the US and Europe are expected to remain relatively stagnant, while it is expected that developing or industrializing economies will grow and increasingly demand personal transportation, which is likely to absorb a large proportion of world vehicle output. In other words, if the expectation that demand for vehicles in most emerging economies are likely to grow – then the challenge of global excess capacity of automobiles might well be offset to a certain extent.

Fourthly, transnational corporations (TNCs) are increasingly adopting corporate strategies using FDI to improve competitiveness and efficiency of international systems of integrated production (ISIP), and as a consequence rapidly changing the international competitive environment. In an innovation-based competitive industry, such as the automobile industry, TNCs are seeking ways to strengthen their market power and simultaneously reduce costs, risks and uncertainties associated with the internationalization of markets.

Fifthly, the roles of suppliers are changing, and relations between vehicle builders and component suppliers are becoming more complex and intertwined (or connected). In addition, as globalization, trade liberalization and international competition intensify, automobile and component firms are increasingly forming strategic alliances (technology-sharing and shared production facilities) and increasing their foreign shareholding in an attempt to expand manufacturing

capacity, attain larger global market share, and deal with the challenge of global over-capacity.

Sixthly, developed countries and some emerging economies are increasingly imposing stringent environmental legislation concerning low emissions, fuel efficiency and the recycling of automotive products, which are primarily driving technology advances in production materials and other automotive technologies (fuel cells, electronics, electric vehicle components, etc.). More specifically, ongoing advanced automotive research is directed toward the development of more lighter-weighted material technologies that can significantly reduce vehicle weight and volume without compromising on performance, cost-effectiveness, safety, reliability and recyclability.

These represent some of the factors contributing to the radical ongoing transformation of the global automotive industry, which has important implications for domestic firms. A few of these factors will be discussed in the following sub-sections.

5.2.2 Transnational Corporate (TNC) Strategies and FDI

The world's automotive majors are increasingly forming production, engineering and marketing strategic alliances. Vehicle builders and component suppliers are joining forces primarily to secure global market share and to access new markets. For instance, rapid global consolidations among OEMs have occurred at an alarming rate in the 1990s (within a period of 18 months) – Daewoo and Samsung, Hundai and Kia, Renault and Nissan, Daimler Benz and Chrysler, Toyota and Daihatsu, Ford and Volvo (Mateyka, 1999:7) – this trend is likely to accelerate in the future and will be reflected in different regions across the world – due to the global excess capacity and competition in the automobile industry, and the emergence and acceleration of automotive TNCs' international systems of integrated production (ISIP) facilitated by FDI. ISIP activities may involve the restructuring of existing operations, or set up new local production operations

transforming them into export production platforms (Mortimore, 2000:1616), increasing R&D in various areas of transport technologies, among others.

Corporate strategies of transnational corporations (TNCs) are at the forefront of these developments, presently taking the form of M&As (especially cross-border M&As) facilitated by foreign direct investment and strategic alliances (UNCTAD, 1999; Mytelka, 1999). It is noteworthy that the second largest cross-border M&A in 1998 (reviewing developments in all industries) occurred between Daimler-Benz (Germany) and Chrysler (USA) – worth US$ 41 billion, and took place between historic firms in the automotive industry (UNCTAD, 1999:19). More will be said in this respect in the latter part of this section.

According to Schenk (1999) explained in the World Investment Report (1999), the recent rise in cross-border M&As developed because in an oligopolistic market structure under conditions of strategic interdependence and uncertainty, in an attempt to protect their positions firms might be forced to seek suitable partners quickly (whether necessary or not) to avoid being acquired themselves. Once the partnership is concluded their large joint-size is an effective barrier against take-over (UNCTAD, 1999:25). This has tended to fuel the recent increases in M&As.

Futhermore, with rapid internationalization, trade liberalization, and deregulation and privatization, especially in developing economies – investment opportunities arise for TNCs to offset the challenge of increased pressures from global competition, and more specifically global excess capacity and the rapidly changing transport technology and innovation in the automobile industry. Through expanding and consolidating their ISIP using FDI, TNC firms are increasingly able to access natural resources and manufactures of various local markets of developing nations (Mortimore, 2000:1614). Importantly, M&As as well as strategic partnerships, such as JVs – contribute to increasing the size of the market across national boundaries, and therefore enable firms to experience the benefits of economies of scale. In addition, a larger market size essentially represents a barrier to entry in an oligopolistic market, especially

against take-overs and new entrants (especially in the motor components industry).

Economies of scale can also be realized in knowledge assets, which were initially developed in the host country and thus represent sunk costs for the partnership. The marginal cost of the development of knowledge assets for the foreign or host country is therefore zero (Stanford, 1997:5). Furthermore, rationalizing production operations across global networks and sharing R&D and marketing expenditures will significantly contribute to lower cost structures. Productivity improvements are also expected.

Another important aspect relates to the expansion and domination of market share and power, which has been an important reason for the rise in TNCs corporate strategies in recent years.

Most cross-border M&As are concentrated in industries that experience over-capacity, low demand and a reduction in comparative advantage (UNCTAD, 1999:22). With the rising number of M&As it is expected that the international automobile industry will become more concentrated, and hence change the traditional oligopolistic market structure of the industry.

Theoretically, in traditional oligopolistic markets, the market structure is characterized by a small number of competitors with substantial interdependence among them; production and sale of differentiated products; the existence of barriers to entry; monopoly power, and some other features (Mansfield, 1997:351; Mytelka, 1999:5). Because of this interdependence, in international oligopolistic markets any single firm's competitive strategy can threaten the market shares and profitability of rival firms (Stanford, 1997:9). The traditional oligopolistic market structure[2] in automobiles has been challenged resulting in a new structure or form of oligopolistic market structure. The new form of oligopoly is different to the traditional form in that there are different

[2] Traditional oligopoly is based on three pillars: (1) ability to identify a small number of competitors mainly in the domestic market (2) set of products in the industry (3) technological trajectory which these products will follow (Mytelka, 1999; UNCTAD, 1999).

forces driving them. Thus, the major force driving the new form of oligopoly is the rapid changes in the automotive industry brought about by *innovation-based* and *technology-based competition*. The new form of oligopolistic market structure is characterised by the creation of *knowledge-based networked oligopolies (KNBOs)* due the formation strategic partnering, especially in areas of advanced transport technologies (such as the recent emergence of fuel cell technologies[3]) and potential rivals in distant markets (Mytelka, 1999:5). Because of the ongoing process of innovation and technology advancement, it is difficult to identify potential competitors and rivals. This provides a motive for firms to collude and form strategic partnerships, or even contribute to the formation of cartels (UNCTAD, 1999:31). In other words, the process of innovation and technology advancement results in constant and rapid introductions of automotive new products and technologies facilitated by the rapid formation of M&As and JVs in the automotive industry, making it difficult to keep pace of developments in an expanded world market with no static boundaries.

There is evidence of the formation of research JVs across multiple product markets in the automobile industry in areas of advanced materials, fuel cell technology and environmental aspects relating to automobiles. For instance, GM participated in 105 research JVs and encountered Ford in 33 of these, and also encountered Chrysler in 21 JVs over the period 1993 to 1997. Through research JVs, dominant firms (such as GM, Ford and Chrysler) encounter each other in a multiplicity of different research JVs (UNCTAD, 1999:31). These types of strategic partnerships, especially in R&D have increased in recent years. Other strategic alliances in the automobile industry concerning future transport technology trends include: hydrogen fuel cells (fuel-cell technology) for the production of hydrogen powered vehicles and internal combustion engine-technology. In late 1997, Ford and Daimler Benz through Ballard Power Systems joined forces to work on fuel cell technology. Toyota and General

[3] A fuel cell converts the energy of a fuel (hydrogen, natural gas, methanol, gasoline) and air (oxygen) into direct current electricity and is associated with mild environmental consequences. Fuel cells do not generate carbon monoxide, nitrogen, or sulphur oxide emissions (Sage, 2000:96).

Motors are involved in extensive research programmes developing fuel cell technologies; Honda and BMW's research is in the area of internal combustion engine-technologies (Mangiamele, 1999:1).

The economic effects of the corporate strategies of TNCs are difficult to predict and assess, since the efects may depend on the type of international corporate strategy. On a theoretical basis, there are a number of associated gains and disadvantages for both the home country (from where the TNC originates) and the host country. For the purposes of this study we will focus on cross-border M&As facilitated by FDI and strategic alliances (R&D and technology). Importantly, cross-border M&As impacts on the ownership of acquired firm – transfer of ownership assets from the acquired country (firm) to the acquiring country (firm) – which presents implications for the acquired firm. To assess the impact of M&As on the acquired country or firm is beyond the scope of this study.

Nevertheless, negative implications relate to: (1) no new additional assets to capital stock are created for the acquired country (firm), at least in the short term, (2) all or part of profits that previously accrued to the acquired firm now have to be shared with the acquiring firm, leaving limited funds available for local investors and (3) lower employment levels are increasingly associated with post-M&As, especially in the acquired firm (UNCTAD, 1999:26).

On the other hand, positive economic effects may be realized: (1) funds become available to the host country (firm) resulting from cross-border capital transfers, (2) access to knowledge management practices and related expertise of TNCs, (3) technology transfers are introduced in the host or acquired country (firm), since the acquired firm is now part of global sourcing and marketing operations, which is especially important for exploiting international markets for exporting (UNACTAD, 1999:26; Mytelka, 1999:10).

Evidence of ISIP in the form of FDI in the Mexican automotive industry presents a case study highlighting the significance of corporate strategies of TNCs and their impact on this developing host country. Increasing US FDI inflows into the Mexican automobile industry was essentially a reaction by US TNCs to counteract the large number of Japanese TNCs operating in the US market. ISIP activities in Mexico by US TNCs – was the establishment of more efficient production operations in both automotive assembly and components – FDI was worth more than US$ 5.5 billion (1990–1996) in new vehicle assembly plants in Mexico (Mortimore, 2000:1617). The corporate strategy of using FDI was to improve efficiency of ISIP in Mexico and was successful in terms of rising exports, improved balance of payments and quality of vehicles (Mortimore, 2000:1619).

It is important that the national policy of the particular host country play a role in attracting FDI. Also, a certain level of technological capability is required in the host country. The national objectives of the host country should be in line with that of the TNC regarding the industry in question, so that overall objectives are met in the host country. Furthermore, it is noteworthy that there is no conclusive evidence that increased FDI is associated with higher export and employment levels in the host country. However, increased FDI will bring some positive gains to the host country (as already mentioned earlier).

Table 5.1, provides an outline of Automotive TNCs – country of origin, value of total and foreign assets, sales and employment levels in 1997.

Table 5.1 Automotive TNCs – 1997
(US$ billions and Number of Employees)

Corporation	Country	Foreign Assets	Total Assets	Foreign Sales	Total Sales	Foreign Employment	Total Employment
Ford Motor Corp.	US	72.5	275.4	48.0	153.6	174 105	363 892
General Motors	US	-	228.9	51.0	178.2	-	608 000
Toyota	Japan	41.8	105.0	50.4	88.5	-	159 035
Volkswagen Group	Germany	-	57.0	42.7	65.0	133 906	133 906
Daimler-Benz AG[a]	Germany	30.9	76.2	46.1	69.0	74 802	300 068
Nissan Motor Corp.	Japan	26.5	57.6	27.8	49.7	-	137201
BMW AG	Germany	20.3	31.8	26.4	35.9	52 149	117 624

***Source*: UNCTAD/Erasmus University Database**

Note: [a] Merger between Daimler Benz and Chrylser occurred in 1998.

Although not presented in table 5.1 above, it is worth noting that Ford Motor Corporation is ranked second amongst the worlds largest non-financial TNCs by value of foreign asset in 1997. Toyota Japan was ranked 6th, the VW Group 8th and Daimler-Benz in 10th position (before the merger).

The world's automotive majors are constantly seeking new opportunities to expand their ISIP in an attempt to preserve market power and share in a rapidly changing competitive environment. An increase in such trends will have both a direct and indirect impact on South African OEMs. For instance, a direct impact will involve a change in the ownership structure of South Africa's OEMs, several changes have already taken place, especially since the 1990s (see table 5.3). They will then be part of the TNCs' global operations, and hence probably gain from the consolidation (as already discussed earlier in this section). However, an indirect negative impact relates to employment losses or displacement that my result following the consolidation, especially in the short term.

Given the changing nature of the competitive environment of the international automobile industry, it is likely that fewer larger OEMs (TNCs) will remain as these international firms adapt their ISIP to meet the global challenge. These changes will surely have implications for both global and local component suppliers. Implications for local component firms will be discussed in section 5.4.

5.2.3 Advanced Transport Technologies

This section will very briefly list some technology advances in automobiles, and will also attempt to consider what impact it might have on vehicle manufacturing in South Africa. The technology advances that will be referred to are lighter-weight production materials, the emergence of environmental laws and low-vehicle emissions.

Firstly, developments in the global automotive industry include the growing application of advanced lighter-weight materials incorporated in the production of automotive components and vehicles. There is evidence of a shift from the utilization of steel and iron toward materials such as plastic, ceramics, natural fibres, aluminium, platinum and powder metals. For instance, the application of natural fibres to replace plastics in cars globally has fuelled developments in South Africa. Daimler-Chrysler and Brits Textiles have joined forces to establish a joint venture sisal textile plant to process locally grown sisal into a non-woven textile, which is moulded for rear parcel shelves. In addition, natural fibres will also be incorporated in the right-hand C-Class that is exported, especially to countries imposing stringent recycling laws. It is expected that the plant will generate a turnover equivalent to about R130m on an annual basis (ECDC, 2001a), and hence will contribute to employment creation and value-added in South African manufacturing.

Also, the application of platinum in automotive production is becoming quite significant, especially in catalytic converters and spark plugs. Global demand for platinum in the production of autocatalysts, to reduce exhaust emissions, has

increased significantly due to environmental legislation in industrialized economies (Ebrahim, 2000:72). Since South Africa is rated the largest world producer of platinum, global demand for platinum provides opportunities for South Africa's platinum sector to form strategic partnerships with automotive companies in an attempt to attain the benefits associated with the inflows of FDI, and the transfers of capital, knowledge and technology.

Secondly, environmental standards and legislation imposed by the Americans, Europeans and Japanese have prompted investments in South Africa relating to a new exhaust emission test centre (Eurotype) to perform exhaust emission testing and fuel consumption testing for all vehicles produced by Daimler-Chrysler and BMW for the export market according to environmental standards imposed by the importing country. It is expected that other local OEMs also exporting vehicles will make use of this facility at a later stage. The Eurotype development programme will comprise of three phases, which will not be further pursued here (ECDC, 2000b).

Thirdly, the international market demand is increasingly shifting toward smaller, clean fuel-efficient vehicles, which has prompted ongoing research and investment in areas of the development of electric vehicles, high power electric vehicle batteries and fuel cell technology. The impact on South Africa is not clear given the early stages of the development of these sophisticated automotive products. Nevertheless, strategic partnerships have been established between major automotive TNCs reacting to the pressures of innovation-based competition and globalization.

The above discussion shows clearly that recent technological developments have already begun to affect the South African motor industry. The following section 5.3 provides an overview of the domestic auto industry in light of the restructuring of the global automotive industry.

5.3 SOUTH AFRICA'S AUTOMOTIVE INDUSTRY – AN OVERVIEW

The automotive industry in South Africa is a key sector contributing significantly to the national economy in terms of manufacturing output and employment. In recent years, the sector has undergone a structural adjustment programme (Phase VI), followed by accelerated trade liberalization, to integrate the domestic industry into the global auto industry and to improve its international competitiveness. Presently there are seven OEMs producing a little over 300,000 vehicles annually. Compared to other low-volume producing countries, seven OEMs is a high number given the size of the domestic market (see table 5.2).

Table 5.2 provides comparative statistics in respect of the number of car producers and component firms, size of the domestic market, CBU exports, and other variables for South Africa, Australia, Malaysia and India. From table 5.2, it emerges that Australia and India have fewer OEMs even though they produce more vehicles. The contrast is even more striking with the motor industries of major producing countries. Germany produces 4m cars and Japan 6m cars per annum, yet they each only have six OEMs (Stewart, 1992:31).

Although, historically motor vehicles were assembled mainly for the domestic market, vehicle and component producers are now increasingly competing in international markets. In recent years import duties have been lowered but still remain relatively high according to global standards (MTIG, 1994). Automotive imports are increasing as tariffs are being lowered, contributing negatively to the automotive trade deficit in nominal terms.

Exports remain crucial to the growth and sustainability of the local automotive industry. South Africa's export component market grew strongly in nominal US dollars over recent years, although not as rapidly as India's (see table 2.5 below). Moreover, South Africa exported US$ 941m worth of components, more than both India and Malaysia in 1995/1996 in current US dollars.

Table 5.2 Comparative Automotive Statistical Data: Selected Low-volume Producing Countries

Country	South Africa	India	Malaysia	Australia
No. of Car Producers – 1995	7	3	14[a]	4
No. of component firms	280	365	281	200
Prod of Passenger Cars – 1995 (units)	242,000	389,000	239,00	325,000 (1997)
Imports/domestic market – 1997	12 per cent	13 per cent (components only)	20 per cent	-
Component exports (current US $ mill)	941 (1995)	296 (1995/6)	8 (1995)	2,400(1996)
CBU exports (units)	10,458[b] (1997) 8,000[c] (1997)	37,161 (1996/7)	21 087[b] 1 434[c]	39,500 (19967)
Growth rate – component exports (current US $ mill)	17 per cent (1996–1998)	30 per cent (1996–1998)	-	21 per cent[d] (1997–1999)
Vehicles registered – 1997 (millions)	6.8	6.2	3.2	11.1

***Source*: Compiled from ACMA (2000), Barnes (1998), DOC (1999), DTI (1999), HS (1999), Humphrey (1998), Mascitelli (1999), NAAMSA (1999), Narayan (1998), Sidorenko (1998), Tyndall (2000)**

Note: [a] Includes importers of vehicles.
[b] CBU exports – passenger vehicles
[c] CBU exports – commercial vehicles
[d] Includes total exports

The South African automotive export market for passenger vehicles rose from 10,458 units in 1997 to 25,150 units in 1998 (DTI, 1999:4). Given the figures in table 5.2 above, the South African vehicle export market for CBU exports (units) compares relatively favourable to that of the other economies (although exporting the least number of units). It is envisaged that domestically produced

CBUs will be increasingly exported in the future. The government is hopeful that approximately 60,000 units will be exported annually by 2007 (Auto Africa, 1998) compared to 18,450 units exported in 1997 (DTI, 1999:4). Undoubtedly, OEMs which are closely linked to their foreign parent firms will tend to participate more in international markets by securing export contracts through their foreign partner networks.

In recent years, shares of the various OEMs in domestic production have remained relatively constant (see table 5.3), with Toyota being the market leader. In fact, Toyota's share dropped slightly from 28.2 per cent in the mid-1980s to 25.3 per cent in 1998. Volkswagen is in second place, then Samcor and Delta in third and fourth places respectively.

Table 5.3 outlines the ownership structure of South African OEMs and indicates that all are partly or wholly owned subsidiaries of the world's leading motor manufacturers. Most of the consolidations among local OEMs have occurred since the mid-1990s. Presently, Toyota Motor Corp owns 27.8 per cent of Toyota SA; VW AG, BMW AG and Daimler Chrysler are wholly foreign-owned, Ford has acquired 45 per cent of Samcor, General Motors has a 49 per cent stake in Delta and Nissan Motor Corp owns 50 per cent of Automakers (see table 5.3). A number of importers have also entered the domestic market mainly as a result of the lowering of import tariffs – Hyundai, Daewoo, Volvo, Peugeot, Renault, Sabaru, Ssangyong (van der Walt, 1998:41).

TABLE 5.3 SOUTH AFRICAN OEMs – OWNERSHIP STRUCTURE, MAKES OF VEHICLES AND MARKET SHARE

S A OEM	OWNERSHIP STRUCTURE	VEHICLE MAKE	MKT SHARE % PHASE V	MKT SHARE % 1997	MKT SHARE % 1998
Toyota	72.2% local (Wesco), 27.8% Toyota Motor Corporation (Japan,1996)	Toyota	28.2	26.5	25.3
Volkswagen	Volkswagen AG	Volkswagen, Audi	15.1	18.7	21.5
Samcor	55% Anglo American, 45% Ford (1994)	Ford, Mazda, Mitsubishi	21.6	16.2	15.7
Delta	51% local, 49% General Motors (1997)	Opel, Isuzu	9.2	16	14.5
Daimler Chrysler	Daimler Benz AG (1992), Chrysler (1998)	Mercedes-Benz, Honda, Colt (Mitsubishi)	8.1	8.5	7.7
Automakers	Nissan Motor Company (Japan, 1997) 50%, Nissan Diesel Motor Company (Japan) 4.3%, Mitsui and Company (Japan) 8.7%, Sankorp (local) 37%	Nissan Fiat	12.4	7.4	9.4
BMW SA	BMW AG	BMW	5.4	5.1	5.9

***Source*: Barnes (1998), BTI (1988), Cokayne (1999), van der Walt (1998)**

Many of the automotive global trends are evident in South Africa, especially in terms of increased joint venture and merger activities, such as the recent merger between Daimler-Benz and Chrysler, now known as Daimler Chrysler. The primary rationale behind the spate of increased M&A and JV activities is to develop strategies for coping with the growth of global excess capacity – by expanding market share, sharing R&D costs, acquiring new markets and other profit enhancing strategies.

Presently, there are 6.8m registered vehicles in South Africa of which 65 per cent represent passenger vehicles. About 61 per cent of registered passenger vehicles are over ten years old (NAAMSA, 1999). Also, it is estimated that more than 80 per cent of new vehicle sales represent corporate purchases (Duncan, 1997:145). There seem to be no reliable statistics over time regarding the actual break down of total sales between corporate buyers and private vehicle buyers. Corporate buyers include private companies leasing motor vehicles to individuals or firms – usually as part of employee remuneration packages, vehicle rental firms and government.

Insufficient domestic demand for new vehicles is one of the main challenges facing the South African automotive sector. This has been reflected in a substantial drop in new vehicle sales (see table 5.4) and is also reflected in the under-utilized manufacturing capacity experienced by the sector. The world automotive average capacity utilization rate is in the region of 76 per cent, whereas the domestic industry average manufacturing capacity is 64.3 per cent for passenger vehicles (NAAMSA, 1999:5).

Table 5.4 shows a breakdown of annual new vehicle sales between passenger and commercial vehicles in South Africa from 1970 to 1998. There was roughly a 30 per cent drop in new vehicle sales from an historic peak in 1981 (450, 000 units) to 1998 (314,000). Vehicle ownership in South Africa is estimated to be in the region of 100 vehicles per 1000 people compared to saturation point, which

stands at 500 vehicles per 1000 persons (van der Walt, 1997:11)[4]. This implies that there exists substantial potential for growth in the new vehicle domestic market. However, domestic demand for new vehicles is dampened by the unaffordability of new vehicles. Although vehicle prices have fallen in real terms since 1995, a fall of 12.6 per cent, this has not been reflected in new vehicle sales, except for 1995 when new vehicle sales increased by 20 per cent (see table, 5.4), following the change in government rule and the run up to the new motor industry policy (MIDP) in 1994 and 1995. The restraining influence on demand for new vehicles can be attributed to the decline in domestic real wages since around 1981 and stagnant real GDP per capita in recent years. Real GDP per capita increased by just about 2 per cent over four years, 1994 to 1998[5], whereas population is growing over 2 per cent p.a.

Given the unaffordability of new vehicles, second-hand cars have been the option for many South Africans. Thus it seems useful to present a brief note on this market. The used car market has been fluctuating in recent years, which is a function of the level of interest rates, prices of used and new cars, real income, local fuel prices, etc. In 1994, 246,611 units of used passenger cars were sold and in 1998 the market registered sales of 250,804 units (DTI, 1999:6); hence there was a minimal increase of about 2 per cent over four years. Thus, the used car market also presents a gloomy picture in terms of dampened domestic demand and unaffordability of vehicles in general in South Africa.

[4] India's vehicle ownership is only 0.5 per cent (Narayan, 1998:10), Australia's 51 per cent (APEC, 2000) and South Africa registers 10 per cent. Saturation point generally stands at 50 per cent by international standards.
[5] Calculated from CountryWatch.com (2000).

TABLE 5.4 ANNUAL SALES OF NEW PASSENGER AND COMMERCIAL VEHICLES, 1970–1998

YEAR	CARS	COMM. VEHICLE	TOTAL	CHANGE %
1970	201,854	95,719	297,573	-
1971	175,884	119,798	295,682	-0.64
1972	182,961	109,316	292,277	-1.16
1973	229,442	112,941	342,383	14.63
1974	226,776	115,151	341,927	-0.13
1975	229,031	134,574	363,605	5.96
1976	185,132	115,116	300,248	-21.10
1977	166,764	90,037	256.801	-16.92
1978	204,736	98,959	303,695	15.44
1979	213,270	100,797	314,067	3.30
1980	277,058	127,708	404,766	22.41
1981	301,528	152,013	453,541	10.75
1982	283,433	142,690	426,123	-6.43
1983	272,822	132,317	405,139	-5.18
1984	268,751	137,059	405,810	0.17
1985	204,322	101,005	305,327	-32.91
1986	174,453	90,223	264,676	-15.36
1987	200,824	108,326	309,150	14.39
1988	230,500	127,393	357,893	13.62
1989	221,342	131,287	352,629	-1.49
1990	209,603	125,171	334,774	-5.33
1991	197,736	110,339	308,075	-8.67
1992	182,900	102,000	284,900	-8.13
1993	193,666	98,000	291,666	2.32
1994	199,979	111,144	303,123	3.78
1995	236,584	140,200	376,784	19.55
1996	249,838	143,142	392,980	4.12
1997	239,762	127,113	366,875	-7.12
1998	203,821	110,589	314,410	-16.69

***Source*: NAAMSA (1999), DTI (1999)**

According to Pitot, collectively the profits of South African OEMs fell from R2 billion in 1995 to losses of R550 million in 1997 (Auto Africa, 1998). The major reasons include low domestic demand, underutilized manufacturing capacity, limited vehicle price increases and low production volumes. The falling trend in profitability is likely to continue as trade liberalization and competition is enhanced. To survive, vehicle assemblers will be looking for means to lower costs and increase sales in order to revive profit margins.

As is well known, the local automotive industry is a large employer, although in recent years employment numbers have been declining. From 1994, employment levels in the assembly and component industries fell from 83,600 to 73,700 by 1998 (DTI, 1999:17), also see table 4.7 and figure 4.3. This declining trend is likely to continue in the short to medium term, particularly as a result of increased consolidations amongst OEMs and among component producers, and other related developments already discussed.

Labour productivity in the industry is said to have improved substantially. In 1994, a typical vehicle took about 112 hours to be assembled at a local plant. Presently, it takes 60 hours compared to 20 hours at a typical European plant (Robertson, 2000). Thus, even though productivity levels have improved over the past few years, they still remain poor by international standards. On a general basis, according to the World Productivity Report of 1997, South Africa was ranked 44th out of 45 developing countries in terms of its human resource development (Summers, 1997). It is well known that training development and human resources are essential to enhance productivity levels in any industry and economy for that matter. More specifically, according to the DTI (1999:17), OEMs increased their share of expenditure on training by 5 per cent in 1998 (R60m) in an attempt to improve productivity levels in the local auto industry.

Automotive investment into South Africa has been minimal in recent years. However, since the 1990s the situation has improved and it is believed that the local motor industry has received the second largest amount of foreign investment among manufacturing industries since April 1994 (RIC, 2000:1). Investment expenditure by vehicle assemblers increased from R847m in 1995 to over R1 343m in 1998 (DTI, 1999:15). Although South African automotive products are perceived to be of inferior quality, all domestic OEMs conform to ISO 9001 quality standards and subscribe to important environmental conditions (DTI, 1999:6).

According to various studies, the strengths of the South African motor industry include flexible manufacturing capacity; ability to produce short production runs efficiently, engineering modifications, advanced infrastructure and cheap electricity. Investors rate South Africa second best after Mauritius, as an investment destination within the SADC region (Kobokoane, 2000:1). There exists some potential for increased investment into South Africa, especially in the motor industry, given that South Africa is viewed as the gateway to the rest of the SADC economies, especially in areas of replacement parts and accessories. Even though South Africa faces strong competition from other emerging economies for foreign investment, it is still viewed as a potential investment destination. On the other hand, low production volumes and capacity utilization do not justify investments in expensive capital equipment and extensive R&D operations in the automotive industry.

As fully and partly owned foreign firms are integrated into the international networks of their parent firms, we can expect increased investment inflows into the local motor industry as shown (beyond the formal terminal point of this research) by BMW when its German parent invested R1 billion in its Rosslyn plant in 1998 to expand production capacity of assembly operations (Business Editor, 2000). Globally the number of M&As, JVs and strategic partnerships are expected to increase dramatically over the next few years as trade liberalization and global competition intensifies, and TNCs adopt new corporate strategies to access new markets. Developing host countries (firms), such as South Africa are likely to benefit from international corporate strategies of TNCs depending whether the country's national policies and objectives, state of technology and human resources are line with TNCs' objectives.

Focus now shifts from the industry as a whole, more specifically to component manufacturers both locally and globally. Some parallel issues that were discussed above relating to vehicle builders will also be referred to in section 5.4, along with other related aspects of the components industry.

5.4 GLOBALIZATION AND THE AUTOMOTIVE COMPONENT PRODUCING SECTOR IN SOUTH AFRICA

The concept of the world car is often referred to as; "the vehicle whose origin of manufacture is virtually impossible to determine since its parts are made in so many different locations" across the world (Sidorenko and Sarfudin, 1998:8). In other words, the various components that make-up a motor vehicle can be manufactured in entirely different parts of the world, which has been made possible by increased trade liberalization, globalization and innovative technology. Hence, geographical locations of automotive participants are becoming less important – they may be located anywhere in the world across geographical boundaries, thus highlighting the importance of effective connectedness among key players along the automotive supply value chain.

The internationalization of the world automotive industry (as was discussed in section 5.3) has put pressure on local OEMs to provide a wide variety of models with enhanced quality, higher standards of vehicle performance and improved environmental standards, in turn exerting pressure on the component producing sector to adapt to requirements set by the OEMs. Naturally, the growth of a motor vehicle industry, which aspires to more than simple assembly, is closely linked to the growth of the component producing sector. The importance of the component sector is reflected in the idea that a motor vehicle effectively comprises of between 3,000 and 5,000 components. In addition to the demand from vehicle builders in domestic and international markets, there is substantial demand for motor components in the replacement and accessories markets.

In addition, competition in automobiles is now more innovation-based and product differentiation occurs through a process of ongoing innovation and M&As and JVs across a wide range of end market products (Mytelka, 1999:7). These developments have motivated OEMs to form strategic partnerships with first tier component firms and system integrators mostly located within OEMs' own factories (types of component firms will be defined in section 5.4.1). The rapid acceleration of M&As in auto components since the 1990s have increased

and led to a reduction in the number of component firms, sharing of risks and costs of designing, and the establishment of long-term contracts. It has also resulted a number of barriers – size barriers attributable to an increase in firm size, knowledge barriers attributable to transfer of technology and design, and long-term contracts – preventing the entry of new firms and other independent suppliers (UNACTAD, 1999:35). Hence, the competitive environment (oligopolistic market structure) in which component firms, especially system integrators and first tier firms operate are increasingly being transformed due to the corporate strategies of TNCs. Importantly, global strategies of TNCs are influencing developments in local markets for both motor vehicles and components.

5.4.1 Automotive Value Supply Chains

In recent years the trend globally has been to distinguish between component producers, especially with the recent advent of modular assembly[6] and the development of the tiered structuring of the motor components sector. One reason for the introduction of the production of modules rather than the conventional production of components is that it becomes easier to introduce new product (module) designs and manufacturing technology while possibly minimizing the number of component producers. This section will very briefly explain and illustrate the automotive value supply chain and highlight South Africa's value supply chain.

The changing structure of the components sector has resulted in component suppliers being sub-divided into various categories – system integrators, first-tier suppliers, and indirect or second and third tier component suppliers. System integrators are responsible for the engineering and design of new modules or system parts with little or no design input from OEMs. First tier (tier-one) component firms normally have technological, engineering and design capacity, but to a lesser extent than system integrators. They produce entire sub-

[6] Modular assembly" or "modularization" refers to the physical sub-assembly (modules) of motor components, which can be further assembled into a finished vehicle.

assemblies from components manufactured and supplied by second-tier and sometimes third-tier component firms.

The trend world-wide is to reduce the number of first-tier suppliers, establish long-term relationships and award them greater design and development responsibility. Generally, system integrators and tier-one component firms are increasingly being taken over by TNCs whereas non-TNC suppliers are most likely to acquire the roles of indirect component suppliers, that is second and third tier component firms.

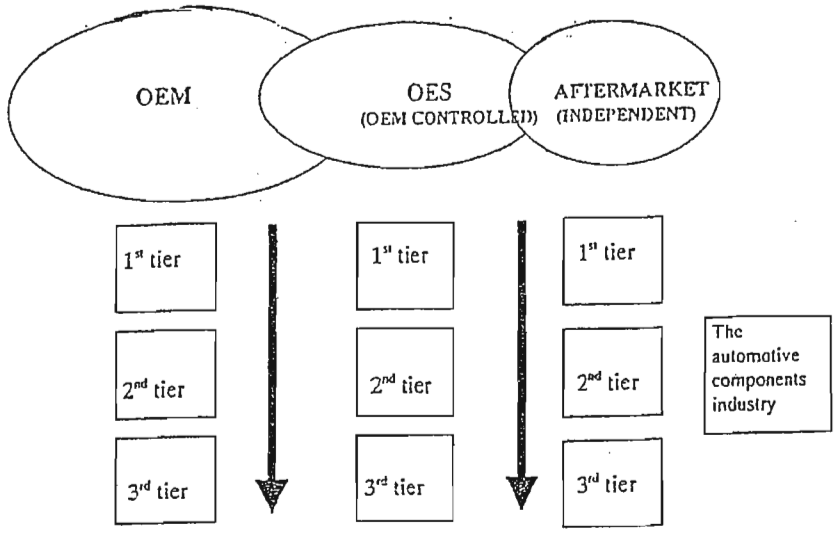
In further classification of the distinctions between the tiers, we can say that second tier component producers are involved in limited designing and engineering, by modifying certain motor components like seating, exhaust systems and suspensions to local conditions. Third tier component firms produce minor components and parts, especially for the replacement and accessories markets, and also supply parts to second tier firms.

Automotive supply chains[7] or networks are now more globally-connected, and the roles and responsibilities of automotive participants in the value-chain have become radically restructured. Relations between assemblers and component suppliers have been transformed due to the new competitive environment – they are now working more closely together and have established long-term contracts. The design and engineering of new product developments are centralized (by system integrators and tier-one component firms) closer to TNCs, while production and manufacturing operations are decentralized (second and third tier component firms) around the world, especially in competitive developing economies.

[7] A supply chain is a network of facilities and distribution options that performs functions of procurement of materials, transformation of these materials into intermediate and final products, including the distribution of these final products to the end customer (Ganeshan and Harrison, 1995).

Figure 5.1 models South Africa's automotive value-supply chain (Barnes, 2000a:403). The automotive component sector in South Africa is represented by first, second and third tier component firms.

Figure 5.1 South Africa's Automotive Value Chain



***Source*: Barnes (2000a:403)**

The local supply-value chain is largely controlled by local OEMs since 53 per cent of total component production in 1997 was produced for OEMs. The figure shows that production flows in response to the demands of OEMs to first tier suppliers, then to second tier and finally to third tier component firms. In other words, first tier firms manufacture components (normally sub-assemblies) to the specifications of OEMs and these are supplied on a JIT basis. They themselves are served by second and third tier component firms, which are drawn into the process through subcontracting or outsourcing. They tend to produce smaller non-sophisticated components. Also, components demanded for Original Equipment Supply (OES)[8] and the aftermarket are produced following a similar procedure as indicated by figure 5.1 above, but may also be sourced directly from second and third tier components[9].

[8] OES refers to automotive parts and accessory sales through OEMs (Barnes, 2000a:52).
[9] Together OES and the aftermarket constituted 21 per cent of total component output and 26 per cent were accounted for by exports in 1997.

Internationally the automotive supply chain is expected to tighten and become more complex as global production overcapacity and competition intensify. Large MNC-component firms (normally system integrators or first-tier firms) produce automotive products for a number of TNC OEMs across the world and award and second tier component firms long-standing supplier contracts. For example, Lear Seating (a first tier supplier in the US) designs and develops seating systems for Ford Motor Co., Fiat, and others. In turn, Lear Seating purchased Dunlop Cox Ltd. (UK) for its ability to design and manufacture automobile electronic and manual seat adjusters (Mytelka, 1999:8, Barnes, 2000b:57). Dunlop Cox Ltd. acquires the status of a partly first/second tier supplier. There tends to be slight overlapping of roles and responsibilities among various component suppliers, as indicated in the above illustration.

We now extend our examination to discuss South Africa's components sector in the light of the forgoing discussion of changes affecting the world components industry.

5.4.2 South Africa's Component Producing Sector

South African component manufacturers mainly produce parts built to local OEM demands and specifications. According to Barnes, South Africa's automotive component industry consists of first, second and third tier component firms, which they supply components and parts for OEMs and OES (Original Equipment Supply) or the aftermarket. In 1997 total automotive component manufacturing output registered R15.9 billion of which R8.4 billion (53 per cent) was supplied to OEMs, R3.4 billion (21 per cent) was accounted for by the replacement and aftermarket, and R4.1 billion (26 per cent) was exported (Barnes, 2000a:402). (The exportation of component exports has been extensively covered in earlier sections of this study, and will not be discussed in detail here).

In line with international trends, there have been recent changes in ownership of South African subsidiaries in both segments, automobiles and components due to increases in strategic partnerships and M&As. South African OEMs have increasingly been becoming part of their parent firms' global operations, and thus their demands on domestic component firms have increased. Global automotive developments in respect of innovation and research, and advanced transport technologies such as low emissions and the inclusion of lighter-weight materials in vehicles have contributed to developments in the South African motor industry, such as JVs and partnerships in intra-industry and inter-industry activities (see section 5.2.3). Other developments such as the incorporation of greater use of electronic parts and electronic management and control devices for engines, cellular production systems, regenerative braking systems and recyclable products are increasing. Hence, component manufacturers need to gain relevant expertise in these growing areas as the automotive industry is being transformed at an alarming rate.

To understand how globalization might have impacted on the domestic component sector, we turn our focus to micro-level developments in the local industry. Over recent years a number of studies have been undertaken by various authors relating to the restructuring of the domestic components industry (Black 1996, Barnes, 1998; Valodia 1998, Kaplinsky and Morris 1999). A summary of these studies will be provided here.

According to Barnes (1998:18)[10] the local component industry has made significant progress and improvement over the last four years (1993–1997) regarding their international competitiveness. However, reaching such levels of international efficiency remains a challenge for the local industry. The sampled firms that were surveyed were mostly tier-one component firms and a few tier-two firms, and they were all locally owned. In his study some indication is given of the average state of the industry, the strengths and weaknesses of local component firms compared to foreign firms, and some challenges that domestic

[10] The study is based on the perceptions of domestic OEMs toward the performance of domestic component firms, relative to foreign component firms, and their performance as assessed by themselves toward market demands (Barnes, 1998).

component firms are faced with. His study further shows that domestic component suppliers tend to be lacking in the areas of innovation, quality and pricing, while they have an advantage in delivery reliability and flexibility, which is as a result of their close proximity to customers.

Among the obstacles facing domestic component firms are the relatively high costs associated with the production of low volumes (lack of scale economies), the cost of resources in the domestic market (steel, aluminium, platinum, rubbers, etc), reliance on foreign technology, and low R&D budgets.

In terms of the scale of production in automotive components, South Africa compares poorly to international producers. For example, when producing steering wheels, a typical South African plant has the capacity to produce 300,000 per annum compared to its German counterpart which produces 2 million with less of a variety (Black, 1996:13). Although substantial improvements, on average, have been made in terms of the domestic component industry's internal performance and capabilities, the progress is not such as to enable component suppliers to compete effectively on an international level. Hence, there is a pressing challenge for local component firms aspiring to become increasingly globally competitive to improve their internal efficiency operations. This will involve a reduction in inventory levels, improvement of quality, successful adoption of JIT practices, reduction in machinery changeover times, improvement in human resource capacity and new product development (Barnes, 1998). However, such changes may not necessarily lead to success, since there exist no clear-cut recipes for international competitiveness based only on the efficiency of micro-level internal performance.

Apparently, local firms' production methods and operations have largely remained unchanged since the early period of industry-protection (Kaplinsky and Morris, 1999:728), which has contributed to the lack of efficiency in firms internal operations. In addition, Kaplinsky and Morris (1999:733) maintain that the lack of firm-level competitiveness in auto components can be explained by

the fact that local firms have continued to produce a wide range of components for a wide range of vehicle models, and have hence sacrificed the gains from producing large volumes of components, which would have followed from specialization. This in turn impacted negatively on internal firm-level operations, such as efficiency and quality.

Furthermore, there is a widely held view that there is a relatively large gap between local and foreign firms, especially at the level of technological innovation and new product development. One problem that lies behind the lack of innovation by local firms is that the process of innovation and new product developments tends to be driven by local demand (which is not that aggressive) instead of by aggressive international market demands[11]. Other obstacles to innovative performance are limited R&D investment expenditures, and lack of engineering, design and technological competence. On the other hand, Black (1996) notes that a few domestic firms have been involved in innovation and design, while some have tended to be more competent in adapting and upgrading process technology and product development. One example of innovation is provided by a domestic aluminium wheel producer who introduced modifications to die cooling systems that reduced the casting time to 180 seconds compared to a similar operation in Europe, which took 300 seconds (Black, 1996:19).

As noted above, R&D investment is an important requirement for innovation, design and new product developments. However, the scale of such investments is limited in South Africa compared to that in other developing countries. South Korea, for example, spent an estimated 5 per cent of GDP on R&D in 2000 compared to South Africa's 0.65 of GDP in 1993 (Cloete, 1997:36). Since domestic component suppliers lack R&D funds the most likely option would be for them to seek foreign investment, and establish R&D partnerships or JVs with MNC-suppliers. For example, Tenneco Automotive[12] formed a joint venture with

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[11] Surveyed component firms by Barnes (1998) and Valodia (1998) maintain that innovation and new product developments were driven by the domestic market.

[12] Tenneco Automotive is the leading global manufacturer of ride control products and exhaust systems for both original equipment and replacement markets (Tenneco Automotive, 1997).

a South African company, Armstrong Holdings Ltd., to manufacture ride control products for light vehicles (Tenneco Automotive, 1997). However, given the small size of our domestic market, large-scale investments by global firms do are not justified by expected returns. In South Africa's favour, on the other hand, is the fact that she represents the hub of the expanded SADC region. This increases the likelihood of being an investment recipient since South Africa is the gateway to the rest of the markets in the region.

Domestic component manufacturers are competitive in producing and exporting primarily raw material intensive auto parts such as catalytic converters, automotive leather seats, castings and engines – achieving substantial local content levels in some component exports. Automotive component exports have extensively been dealt with in chapters 3 and 4 (sections 3.4. and 4.7). In light of this, another relevant study was by Valodia (1998:13-19). It was a preliminary study of component firms in KwaZulu Natal and it distinguished between exporting and non-exporting firms. He found that exporting companies tended to have performed better on average than non-exporting firms in respect of turnover, employment, profitability, and spent a greater share of turnover on R&D expenditure. However, it is interesting to note that exporting firms were weaker when it came to production efficiencies in terms of inventory management, throughput times and in particular lead times, which probably can be explained by customers of non-exporting firms being geographically closer to their markets.

Importantly, all three studies tend to lack emphasis on human resource development and perhaps the benefits associated with information technology (IT) in the automotive industry. According to Kaplinsky and Morris, training in human resource capabilities has been insufficiently developed to meet the demands associated with the recent industrial restructuring of automobiles (Kaplinsky & Morris, 1999:731). Information Technology (IT) is growing strongly in all spheres of business. More specifically, Flynn (1998:1) maintains that IT in the automotive sector links technologies that may accelerate the pace of both achieving internal company objectives and co-ordinating activities across the

automotive production network. The importance of implementing IT, especially among system integrators and first-tier firms, is to achieve integration across various tasks, functions, firms and geographical locations, which are likely to become very important as the competitive environment of the automobile industry is changing, and the associated uncertainties and risks intensify. The importance of IT should be noted, but will not be further pursued in this study.

South African component producers are faced with enormous challenges. How many local firms are likely to survive in the next few years? It can be expected that some independent suppliers will most probably leave the industry and those who remain will produce low value-added components for the local market. On the other hand, component firms who are part of TNC operations will gain business, acquire engineering and design capability and support, and will be able to produce higher value-added automotive components that will facilitate exports. Local suppliers need to improve competitiveness so that they become attractive to local OEMs and move upward along the supply-value chain.

5.5 CONCLUSION

The precise future structure of the South African automotive industry is unknown and difficult to predict, in that it tends to be heavily responsive to the changing structure of the world automotive industry. Global environmental impacts, innovation and technology, and the recent behaviour of TNCs have contributed significantly to the changing automotive economy. Many industry analysts predict that the world auto industry will become increasingly integrated across national boundaries.

The modernization of motor vehicles is inevitable and is likely to have far-reaching consequences for both foreign and local firms. As the growth of global excess capacity and innovation-based competition intensify, fewer larger global vehicle builders and component firms will exist creating significant barriers to entry. This will automatically be reflected within the South African motor industry

in respect of the number of OEMs and component producers, and possibly falling output and employment levels.

The supply automotive value chain is expected to become more intertwined and complex. It is predicted that the number of system integrators world-wide is likely rise, while that of tier-one suppliers will drop. Along the supplier network emphasis is on supplier integration, collaboration, joint goals and planning, and supplier involvement from the initial stages of design and new product development.

Overall, the future of South Africa's local component industry does not seem to be all that bright. Locally, the need to integrate local component manufacturers into the global supplier networks of foreign firms is becoming increasingly important. If not, most South African component producers will most likely adopt an indirect supplier role (second and third tier suppliers) since they tend to lack engineering and design capabilities and expertise, and R&D funding to become system integrators. It is important for local OEMs to commit themselves to using local firms in their operations as frequently as possible. External sourcing is expected to grow dramatically in the years to come, especially in developing countries, thus providing opportunities for competitive component suppliers. Smaller second and third tier component firms might consider seeking markets other than the automotive market to produce for. They also need to seek and form alliances (buy-outs, sharing manufacturing capacities and technology arrangements) enabling them to invest in expanding manufacturing capacity for replacement parts and accessories to export to the rest of the African continent. Despite the limitations experienced by automotive exporting firms, it is suggested that exporting component firms need to channel resources into the production of more high value-added automotive products.

On a final note, the future development of the South African motor industry is susceptible to a whole range of factors and developments, which have been discussed in this study. Apart from the successful impact of industry-specific policy in terms of exports, there have been associated negative impacts – of

course not entirely attributable to industry-specific policy. We do not have control over global developments impacting on our national economy, and in particular the domestic automotive industry. However, we can develop and structure our own automotive policy so as to optimize within the space allowed to us. Given this, the final chapter 6 considers future policy options for motor industry policy in South Africa.

CHAPTER 6

CONCLUSION

6.1 SUMMARY OF THE KEY FINDINGS

The South African motor industry operated under a protected automotive regime, that is, the local content programme, which shaped the development of the automotive sector since the early 1960s. The local content programme comprised of a series of six phases – Phases I to VI. Phases I–V were similar in that varying local content requirements based on weight were applied, and the requirements increased from Phase I to Phase V. Phase V of the local content programme impacted on the motor industry in a number of ways – weight-based local content was associated with cost premiums, high retail vehicle prices, limited rationalization of vehicle models, notable automotive export growth, and a deterioration of the industry's foreign exchange balance in nominal terms.

Many believed that Phase V was primarily responsible for excessive foreign exchange usage by the motor industry, and thus worsened the nation's balance of payments position. The data at hand suggest that automotive policy in South Africa, especially Phase V of the local content programme, did not contribute significantly to net foreign exchange usage by the motor industry, since net imports fell by 37 per cent in real term between 1980 and 1988. Part of the explanation for the questionable claims made about local content and the industry trade deficit seems to be that an inadequate distinction has often been made between nominal and real deficits. Furthermore, local content has been blamed for the price effects of the depreciation of the real exchange rate, which took place in the 1980s after the appreciation in the 1970s.

A major part of the study focuses on the export performance of South Africa's motor sector from Phase V through to the current version of the MIDP, including Phase VI. There was a notable rise in automotive exports, especially automotive components from the late 1980s – the export incentive of R4 per kg

was implemented in 1985 and played some role in stimulating exports, including other economy-wide factors. The need to further encourage exports of automotive products prompted government to introduce the export facilitation scheme (that is, import-export complementation scheme), which came into effect in March 1989 under Phase VI of the local content programme.

The change in policy from Phase V to Phase VI, a structural adjustment programme, came mainly as a result of trade liberalization efforts by the government to enhance exports and the need to save foreign exchange, and thus improve the automotive trade balance, and in turn the country's balance of payments. In fact, Phase VI did not adequately reduce nominal foreign exchange usage by the motor industry as the policy was intended to.

The IEC – an effective export subsidy, one of the main features of Phase VI – contributed significantly to the growth of automotive exports in real and nominal Rand terms, and real US dollar terms. OEMs and component firms are constantly faced with problems and challenges when exporting – geographical distance, logistical issues, restrictions relating to licensing agreements, and others. Nevertheless, motor industry exports continue to grow. Given the fact that motor industry exports grew faster than most manufacturing sub-sectors, and that the motor sector's export share in total manufacturing exports also increased substantially, particularly during the Phase VI period, suggests that industry-specific policy was the main reason for the rapid export expansion that occurred in the motor sector over the period 1989 to 1994.

Another change in automotive policy came in September 1995, when the government introduced a new motor industry programme, the Motor Industry Development Programme (MIDP), which was initially scheduled to continue to the year 2002. Export success of automotive products continued under the reign of the MIDP. However, after limited success relating to the overall objectives of the MIDP, in mid-1999, the Mid-Term Review of the MIDP proposed amendments to the existing version of the MIDP. The changes included – the continuance of the tariff phase-down programme, the phase-

down of the SVI and its eventual termination, the new DFA structure and its phasing-out, and the phase-down of the IEC scheme. It is also expected that the IEC (export subsidy) will eventually cease.

Likely effects of the current version of the MIDP have been considered, that is, a short to medium term and longer-term projection for South Africa's motor industry. In the short to medium term the likely effects of the revised MIDP may result in the following – imported CBUs will increasingly enter the domestic market and the production of low-volume CBU models will terminate. One might expect automotive exports to fall only marginally provided that OEMs and component suppliers maintain their global ties with TNCs. Over the medium to longer term, we can expect fewer OEMs and component suppliers; if this happens it will probably be due to global production overcapacity and increased collaboration in the world automotive economy. Furthermore, as the industry adjusts, we can expect automotive exports to rise as trade and the inflow of foreign investment accelerates, which will further stimulate automotive production thereby increasing the industry's contribution to national growth.

Possible policy options for future automotive policy reform were also considered once the present-MIDP expires in 2007. A transition automotive programme similar to Australia's ACIS, which is based on investment and production targets might be considered in the short-term post-MIDP, and the adoption of a tariffs-only automotive policy in the longer term as tariffs fall (but remain) and government support measures are also expected to fall. The theoretical implications of such a policy and some automotive country evidence include – a reduction in consumer welfare loss, and pressure on domestic component producers and vehicle builders to become more internationally competitive as imports increase. Vehicles will be priced at competitive world prices, and thus be more affordable to domestic vehicle buyers, in turn stimulating vehicle production. The theoretical analysis indicates that the net welfare effect will benefit the national economy in that the expected gains will outweigh the costs.

6.2 RECOMMENDATIONS FOR FUTURE AUTOMOTIVE POLICY

The importance of growing domestic demand has already been noted earlier, especially in countries like Brazil, Malaysia, and others experiencing trade liberalization. Inevitably, trade liberalization programmes and globalization in the developing world and South Africa will intensify, hence the need to stimulate domestic demand in the automotive sector – these may include dropping vehicle prices, lower profits to OEMs and component firms (short term), generous non-price benefits for vehicle buyers, and even possibly the introduction of an affordable "National Car". It has been maintained that real vehicle prices have been falling under the MIDP; however vehicle affordability remains a challenge for South Africans. New vehicle and used car sales have been stagnant in recent years reflecting the depressed state of domestic demand for automotive products. The domestic economy needs to grow faster and macroeconomic variables such as inflation, interest rates, domestic fuel prices and the exchange rate to be sound and stable – these are essential components for growth and development of manufacturing and, in particular the motor industry.

On the basis of an industry-specific policy, South Africa should consider a "performance based automotive policy" within the framework of trade liberalization and globalization post-MIDP. In short, this policy should include – production, investment and export targets (similar to Australia's ACIS). As evidenced by other developing automotive economies, appropriate complementary policies – labour support programmes, especially in training (technical, engineering and IT) need to be designed in an attempt to assist the industry through the period of transition. Close co-operation and ongoing collaboration between various industry stakeholders would be important in this respect. The Automotive Industry Development Centre (AIDC) recently signed an aggreement with four Gauteng-based tertiary institutions – Soshanguve College, Technikon Northern Gauteng, Technikon Pretoria and the University of Pretoria. The agreement was for R12m, to enhance capacity in the areas of technical, engineering and managerial skills (McGregor, 2001).

It is expected that the number of local OEMs will drop due to increased consolidation among TNCs and global excess production capacity. This will have the effect of forcing the withdrawal of uncompetitive OEMs and the revival of internationally integrated and competitive OEMs. Domestic component firms will need to become increasingly attractive to TNCs in order to establish and maintain export contracts and be the recipients of foreign direct investment. Furthermore, second and third tier firms will need to seek export markets and contracts by forming alliances and JVs. Others might consider finding niche markets in non-automotive sectors to increase production and export to. The replacement component market has not yet been fully exploited, especially in the SADC region and other markets such as North America.

A further recommendation is that automotive industry analysts and researchers should consider investigating the option of introducing an affordable "National Car" programme for South Africa, like Malaysia (Proton and Perodua), India (Maruti Udyog) and Australia (aXcess). The South African "indigenization" model should be designed, engineered and built completely locally with South African resources and automotive expertise already gained. The possibility of exporting this vehicle to the rest of SADC is also seen as a potential endeavour, as well as other developing economies. Another is to consider examining whether Australia's Competitiveness Investment Scheme (ACIS) may indeed be a likely policy-option for South Africa post-2007.

Once the current version of the MIDP has run its course, tariffs will remain (although at relatively low rates) and government assistance programmes are expected to fall away; hence the tariffs-only automotive policy seems to be a likely option in the light of global developments. Apart from the effects of the preliminary theoretical analysis already done, it would be necessary to undertake a quantitative analysis to estimate the likely benefits and costs to society if such a policy was considered for South Africa in the future.

As I have already mentioned, export expansion can contribute significantly to improving the automotive trade balance in real terms, given that we expect an increase in CBU imports following falling tariffs and the elimination of the new DFA and SVI. The importation of low-volume CBUs will rise; hence there will be a reduction in the proliferation of low volume models produced domestically. It is also important for OEMs to modernize and increase installed capacity in vehicle assembly to produce high-volume CBUs, especially for exporting. Once the wide range of vehicle models produced in the domestic market is reduced, it will allow OEMs to specialize in a few vehicle models, especially high-volume models, and thus gain from economies of scale in manufacturing.

Some sources provide another option for South Africa, which is rather far-reaching – that is, if local OEMs become full vehicle assemblers, only importing CKD and SKD sets to assemble CBU units. However, this option is unlikely and is not supported in my view. This would have a devastating effect on the motor industry and the South African economy as whole in terms of loss of employment (plant closures due to loss of production in both motor vehicles and components) foreign exchange earnings and national income.

This study has detailed developments in the local automotive industry in the context of the domestic macroeconomic environment and an international automotive framework, and has highlighted the significance of this industry within the national economy and the importance of industry-specific policy to facilitate the long-term development and future success of the industry. This is accordance with the overall objective of the study, which has been to contribute to the on-going debate on future automotive policy in South Africa.

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